

POPULATION SITUATION ANALYSIS: *Beyond the Demographic Transition in Azerbaijan*



POPULATION SITUATION ANALYSIS: Beyond the Demographic Transition in Azerbaijan

AUTHOR:

Alexandre Avdeev,

Professor, the Institute of Demography at the University Paris 1 Pantheon Sorbonne;
Head of the Information, Bibliography and Historical Research Unit, Center of Population
Problems Studies, the Economic Faculty of the Moscow State Lomonosov University

PROJECT TECHNICAL ADVISORS:

Farid Babayev, Assistant Representative, UNFPA

Narmina Melikova, Programme Analyst (Population and Development), UNFPA

Jamila Ibrahimova, Assistant Resident Representative, UNDP

NATIONAL ADVISORY PANEL:

Naila Verdiyeva, Employment Policy Department, Head of Demography and Population
Development Sector, Ministry of Labor and Social Protection of Population of the Republic of
Azerbaijan

Roza Mirzoyeva, Employment Policy Department, Senior Adviser of Employment Policy Sector,
Ministry of Labor and Social Protection of Population of the Republic of Azerbaijan

Teymur Huseynov, Health Adviser, Public Health and Reforms Center, Ministry of Health of the
Republic of Azerbaijan

Aysel Vezirova , international gender expert

DESIGN & LAYOUT:

Hikmat Maharramov

This report presents an analytical overview of the modern demographic situation and trends in population developments of the Republic of Azerbaijan in the early 21st century. It is intended for a wide audience, primarily decision-makers at various government levels, monitoring specialists in the socio-economic sector, and civil society organisations involved in the provision and protection of social rights. The content of the report may also be of interest to the academic staff and students of higher and secondary schools specialising in population issues and the demographic aspect of socio-economic development of Azerbaijan.

The importance of the analytical report on demographic situation is explained by the fact that the correlation between population and resources is the major determinant of the economic potential and social stability of any country. Changes in population size, age structure, spatial distribution and mobility are critical for long-term socio-economic development.

This is an independent publication commissioned by UNFPA and UNDP. The views expressed in this publication are those of the author and do not necessarily represent those of the United Nations, including UNFPA and UNDP, or its Member States.

Table of content

Executive Summary	8
Methodology and objectives	8
Structure and content	8
Data	13
Introduction	15
Global context: population dynamics and demographic challenges of the modern age	16
The consequences of demographic transition in Third World Countries	16
New challenges or second demographic transition	17
The gender dimension of demographic transition	18
Demographic challenges of the modern world and population policy	18
Local context (historical overview)	19
Collapse of the USSR and territorial integrity problems	27
1. Population Growth and Structure in Azerbaijan	31
1.1. Dynamics of the population size and factors of the population growth in Azerbaijan	32
1.1.1. Population Growth Rates in Azerbaijan	32
1.1.2. Components of the population growth in Azerbaijan	33
1.1.3. Dynamics of the urban and rural population size	35
1.2. Peculiarities of the dynamics and age structure	38
1.2.1. Methodological notes	38
1.2.2. Evolution of the age structure during the demographic transition in Azerbaijan	39
1.2.3. Population age structure and labour market replenishment	40
1.2.4. Total (demographic) ageing of the population	41
1.2.5. Ageing of the labour force	42
1.2.6. Dynamics of the population at the retirement and old ages	43
1.2.7. Growth potential and demographic tides	44
1.2.8. Sex ratio and gender aspect of the age and sex structure of the population of Azerbaijan	46

1.3. Dynamics of regional demography in 1990-2011	48
1.3.1. Spatial distribution of the population of Azerbaijan	48
1.3.2. Trends in the spatial distribution of Azerbaijani population between 1990 and 2012	50
1.3.3. Demographic components of the changes in the spatial structure of the population	52
1.3.4. Changes in the regional structure of the urban population	53
1.3.5. Change in the regional structure of the rural population	55
1.3.6. Classifying regions based on demographic development	56
1.4. Ethnic and ethno-linguistic structure of the population of Azerbaijan	58
1.4.1. Ethnic structure of the population of Azerbaijan	58
1.4.2. Ethno-linguistic structure of the population of Azerbaijan	59
Conclusions:	60
2. Family and Fertility in Azerbaijan	67
2.1 Family	68
2.1.1. Theoretical approaches to the demographic analysis of the family	68
2.1.2. Data and methodology for the analysis of family size and structure	69
2.1.3. Dynamics of the number of families and single persons	70
2.1.4. Gender and age aspects of singleness	71
2.1.5. Size of a family-household	72
2.1.6. Typology of family-households	76
2.1.7. Population structure by marital status	79
2.1.8. Formation and disintegration of married couples and population structure by marital status	82
Conclusions:	85
2.2. Fertility	86
2.2.1. Conceptual framework of modern fertility patterns	86
2.2.2. Fertility dynamics in Azerbaijan	86
2.2.3. Fertility by birth order and birth intervals	89
2.2.4. Marital and extramarital fertility	90
2.2.5. Sex ratio at birth in Azerbaijan	92

2.2.6. Fertility in real cohorts	95
2.2.7. Changes in the family component of social capital	98
2.3. Birth control and family planning	100
2.3.1. Abortions	100
2.3.2. Contraception	101
2.3.3. Preferences for the number of children in a family	103
Conclusions:	105
3. Mortality and life expectancy in Azerbaijan	111
Introduction: theoretical framework for analysing mortality	112
3.1. The main trends in the levels and patterns of causes of death in Azerbaijan	114
3.1.1. Historical dynamics and demographic factors of mortality levels in Azerbaijan	114
3.1.2. Structural factors of mortality dynamics	114
3.2. Causes of death	118
3.2.1. Patterns and dynamics of mortality by cause in 1990-2011	118
3.2.2. Age-standardised mortality by causes of death	122
3.3. Infant and child mortality	126
3.3.1. Methodological comments	126
3.3.1.1. Main concepts	126
3.3.1.2. Indicators of infant and child mortality	127
3.3.1.3. The procedure of registration and statistical accounting of infant mortality	127
3.3.2. Dynamics of infant and child mortality in Azerbaijan	129
3.3.3. Problems of data quality and alternative estimations of infant mortality in Azerbaijan	130
3.3.4. Infant mortality difference between urban and rural areas	132
3.3.5. Territorial differences in infant mortality	133
3.3.6. Causes of infant deaths	135
3.3.7. Age-specific infant mortality	137

3.4. Evolution of life expectancy	138
3.4.1. Life expectancy dynamics and main trends	138
3.4.2. Influence of mortality decline at specific ages on life expectancy dynamics	139
3.4.3. Gender inequality toward death	142
Conclusions:	144
4. Gender	153
4.1. Gender inequality in the demographic context	154
4.2. Measuring gender inequality	154
4.3. Gender routes in education	155
4.3.1. Literacy	155
4.3.1.1. Primary and secondary education	156
4.3.1.2. Higher Education	156
4.3.2. Educational choices and gender segregation	157
4.4. Gender inequality in economy	157
4.4.1. Gender inequality and income distribution	158
4.4.1.1 Horizontal and vertical gender segregation	159
4.4.2. Women in agriculture	159
4.5. Time allocation and 'triple workload'	160
4.6. Gender pay gap	161
4.7. Gender aspects of the ageing population	161
4.8. Gender equality in decision-making	162
Conclusions:	163
5. Annex	165
5.1. Population development policies in Azerbaijan	166
5.2. Legislation, policies and programmes in the area of migration and the territorial distribution of the population	168
5.2.1. External migration policy	168
5.2.2. Urbanization, internal migration and territorial development policies	169
5.2.3. Environmental policy and improvement of urban environment	169
5.3. Overview of policies on marriage, family planning, maternal and child health	172
6. Bibliography	175

Executive Summary

This report was commissioned by the United Nations Population Fund (UNFPA) and the United Nations Development Programme (UNDP) in Azerbaijan. The report presents an analytical overview of the modern demographic situation and trends in population development of the Republic of Azerbaijan in the early 21st century. It is intended for a wide audience, primarily decision-makers at various government levels, monitoring specialists in the socio-economic sector, and civil society organisations involved in the provision and protection of social rights. The content of the report may also be of interest to the academic staff and students of higher and secondary schools specialising in population issues and the demographic aspect of socio-economic development of Azerbaijan.

The importance of the analytical report on demographic situation is explained by the fact that the correlation between population and resources is the major determinant of the economic potential and social stability of any country. Changes in population size, age structure, spatial distribution and mobility are critical for long-term socio-economic development.

Methodology and objectives

This report offers an analysis of the dynamics and components of population reproduction in the Republic of Azerbaijan and seeks to understand the prospects of demographic development and to identify national policy priorities to address population-related problems as reflected in the decisions of the Cairo Conference, and the sustainable development agenda.

The analysis applies a three-level methodological approach. First, the underlying population trends of Azerbaijan are studied in the context of the general

demographic transition model which provides the basic scheme for the analysis of fertility, mortality, evolution of the age structure and population size in Azerbaijan. Second, the analysis explores the national specifics of the demographic processes influenced by the cultural environment (a set of traditions, beliefs, religions, behaviours, etc.) in a broad historical socio-cultural context. Finally, the analysis identifies the specific features of the demographic trends and demographic situation that are influenced by the transformation processes, and by political and economic developments in the social context of Azerbaijan's development. This approach helps to identify the influence of long-term trends and fluctuations on demographic dynamics and to achieve a balanced demographic situation whilst identifying population reproduction prospects in Azerbaijan.

Although the research is focused primarily on the analysis of demographic development since regaining independence, in some cases lengthy historical time series of demographic indicators are presented to illustrate long-term trends and the inert nature of the demographic processes.

Structure and content

The report consists of the introduction, four chapters and the annex providing an overview of social and population policies in the Republic of Azerbaijan. The introduction presents the global context and the concept of demographic development in the modern world, and provides an overview of the national social and political history that is fundamental for understanding the specific features of population reproduction in present-day Azerbaijan.

CHAPTER 1 explores the dynamics of the population size and the evolution of population

Figure 1
Population growth in Azerbaijan, 1897-2014, and prospects until 2050

Figure 2
Components of the change in Azerbaijan's population size, 1935-2014

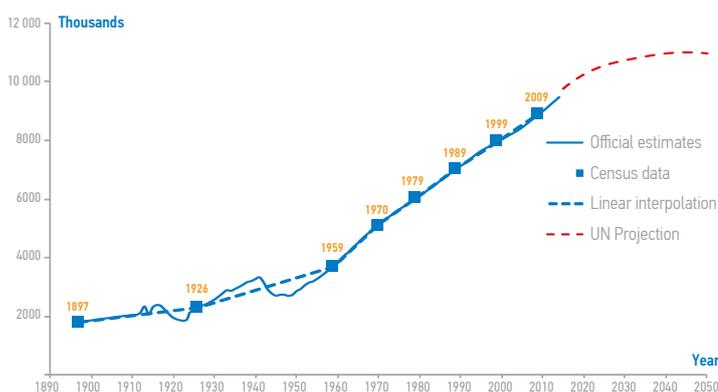


Figure 1

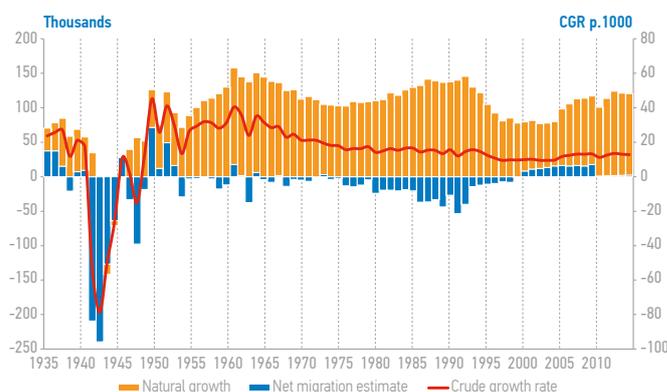


Figure 2

structures in Azerbaijan. It starts with an analysis of the population size dynamics, and changes in the pace and components of population growth. This analysis is summarised in Figures 1 and 2 which illustrate Azerbaijan's population growth since 1897, and the changes in the ratio of the demographic components of this growth (births, deaths and migration). The Chapter focuses on the specific features of the demographic transition in Azerbaijan characterised by the rapid decline of the death rate and high birth rate that lasted into the early 1990s.

The Chapter also studies the dynamics of the urban and rural population and highlights the regression of urbanisation (declining share of the urban population) between 1989 -1999 that may well have been caused by the hardship of the transition to the market economy.

Further on, Chapter 1 describes the evolution of the age and sex structure of Azerbaijan's population, demonstrating that the period of demographic dividend, which began in 1975 and lasted to 2010s, largely coincided with the times of instability and recovery period. From the early 2010s Azerbaijan entered the phase of rapid population ageing. However, despite the rapid increase in the proportion of the pension-age population, by the mid-21st century dependency ratio of population would not exceed 80 persons aged 0-19 and above the pension age (60 years old for women and 63 for men) per 100 person working age. The Chapter also outlines changes in the age structure of the working-age population, labour force ageing and the substitution of generations in the labour market. It reveals that the nowadays accelerating growth of the pension -age population in Azerbaijan results mostly from the historical peculiarities of population age-sex composition rather than the increase in mean life length. In addition, in the next 50 years the dynamics of Azerbaijani population will be influenced by a strong demographic tide generated by the multiplying demographic effects of the First and Second World Wars. It also demonstrates that the age-sex composition of the Azerbaijani population has a substantial growth potential, or "population momentum" which should provide the population size with an increase by 30% other things being equal.

The Chapter also discusses regional demographic dynamics, including the spatial distribution of urban and rural populations by administrative regions and the changing trends between 1990 and 2014. However, given the instability of the regional demographic dynamics during 1990s its demographic components were analysed only for the period from 2000-onwards. It emphasises a highly concentrated urban population, predominantly in the three largest cities of Azerbaijan – Baku, Ganja and Sumgayit (56%), while half the other urban settlements have a population of less than 3,000 people. This results in dramatic constraints on effective regional development and the implementation

of infrastructural projects. Finally, the general classification of administrative regions, based on the main characteristics of the population reproduction balance, shows that from 2010 onwards the demographic situation everywhere has been favourable for sustainable development.

Chapter 1 concludes by providing an analysis of the ethno-linguistic structure that emphasises the increasing ethnic homogeneity of Azerbaijan's population, which is mainly due to the decline in the Armenian and Slavic populations. Nearly all Azerbaijanis, Kurds, Tats and Talyshes, and over 95% of the indigenous minorities of the North Caucasus (Avars, Tzakhurs and Lezghins) are proficient in Azerbaijani, While less than half the Russians, Ukrainians, Tatars and Jewish population speak Azerbaijani.

CHAPTER 2 analyses the dynamics of fertility and the family structures of the population in Azerbaijan. The Chapter starts with a brief theoretical introduction of methodological approaches to studying the demographic dimensions of family and fertility. It points out that currently Azerbaijan follows the internationally recommended approach to conducting population censuses and uses the household as a unit of observation, while the Soviet censuses used family. The resulting differences should be taken in account when analysing the trends in the family size (households) and family structure of Azerbaijan's population. By analysing the data of the population censuses and a representative national Demographic and Health Survey carried out in 2006, this report shows that in Azerbaijan the definition of the household is very similar to the definition of the family applied in the Soviet censuses because most household members are relatives. Further in the analysis reference is made to a family-household which is defined as a group of relatives (by blood or by marriage) residing together, jointly managing the household affairs.

The Chapter also analyses the dynamics of the size and evolution of the structure of family-households in Azerbaijan. The findings of the analysis show that the increase in the population size runs parallel with the increase in the number of family-household and the family remains the main stable social unit, and 99% of the population of Azerbaijan lives in family-household consisting of two or more members.

The family structure analysis pays special attention to the situation of single people as one of the vulnerable groups. The analysis of data from the population censuses revealed that the majority of single people are women and the elderly. However, in general single-member households in Azerbaijan are uncommon, meaning that the inter-generational and intra-family support in Azerbaijan constitutes an importance factor for social protection and the family continues to perform the function of a social safety net.

Between 1989 and 1999 the mean family (by Soviet definition) size and mean household size in Azerbaijan increased and then it remained at nearly the same level. In 2009, the mean family size was about five people while the mean household size was 4.7 people. This difference results from the fact that the count of family size includes family members living separately, for example, adult children-students living in a dormitory during the academic year but having economic and social ties with the parents' family. The actual increase of the mean household and family size results mainly from the reduction in the number of single and two-member households compared to 1989, concurrently with a considerable increase in the number of four- and five-member households, which reached 45% of all households in 2009. The results of the analysis are presented in Figures 3 and 4.

Figure 3
Number of families and average annual growth rate of the number of families in Azerbaijan based on population censuses data from 1959 - 2009

Figure 4
Dynamics of compatible mean size of family-household based on the population censuses data.

¹ For example, see Guilimoto, Christophe Z. "The sex ratio transition in Asia," *Population and Development Review* 35(3): 519-549; Das Gupta, Monica. 2010. "Family systems, political systems and Asia's 'missing girls': The construction of son preference and its unravelling," *Asian Population Studies* 6 (2): 123-152; Eu, Ki-Soo, P. Wongboonsin, and N.H. Mihn. 2011. "Is there gender preference for children in Asia? A comparative study," paper presented at the ISA RC06-CFR Seminar "Reconstruction of Intimate and Public Spheres," Kyoto University, September.

A comparative analysis of data from the 1989 population census and the 2006 Demographic and Health Survey showed that the distribution of various family types in Azerbaijan remains almost unchanged. The majority of families in Azerbaijan (65%) are nuclear families, i.e. families with one married couple, with or without children and other relatives. The proportion of the families with a deformed or deficient nuclear consisting of a parent, usually mother, with children, and with or without other relatives, also remains constant.

The analysis of family structures is followed by the analysis of marriage and divorce statistics, which shows that marriage in Azerbaijan has been and remains customary, and virtually all the adult population is married. However, over the past decade the proportion of men and women never married by the age of 50 years old (known as 'ultimate celibacy') is steadily growing, particularly among women. According to the population censuses, the percentage of women never married by the age of 50 increased from 2% in 1999 to 6% in 2009. Ultimate celibacy among men remains very rare, although increased from 1% in 1989 to 2.2%

in 2009. Men's mean age at first marriage is 27 and women's is 23, and this has remained constant during the past 15 years. Divorces are exceptionally rare; with the current divorce rate depending on the duration of marriage, only 16 out of 100 marriages can end in a divorce.

Later, Chapter 2 sheds light on the trends and factors of fertility in Azerbaijan. It reveals that the historical trend towards a decline in fertility lasted until 2002 when the total fertility rate reached 1.8 births per woman, then it increased to 2.3 by 2005 and ever since it has remained at about the same level. Currently the mean age at maternity is 26 years for the urban population and 25 years for the rural population. Over the past twenty years the mean maternal age in cities has remained at the same level, while in rural areas it has decreased by 1.5 years. The period of family formation in Azerbaijan is short, the first and second child are born within the first three years after the marriage. The third child is born two to three years later. So, as a norm Azerbaijani families tend to have two children irrespective of their situation, and those who want to have a third child choose to do so only if the situation is favourable. The level of extramarital fertility is low, but over the past few decades the percentage of out-of-wedlock births increased from 3% in the late 1980s to 15% in present-day Azerbaijan. Pre-marital births constitute a significant share of extramarital births, and a child born out-of-wedlock is often acknowledged by both parents, and 80% of couples enter into marriage within two years from the date of birth of the extramarital child.

The fertility analysis also highlights the problem of the skewed sex ratio at birth, as the share of newborn boys increased dramatically from 1990. During 1998-2004 there were 118 newborn boys per 100 newborn girls in Azerbaijan. This phenomenon, already widespread in South-Eastern and Southern Asia and in all countries of Transcaucasia, has not yet been sufficiently explored and explained. From 2005 the bias of the sex ratio at birth has slowly been decreasing.¹

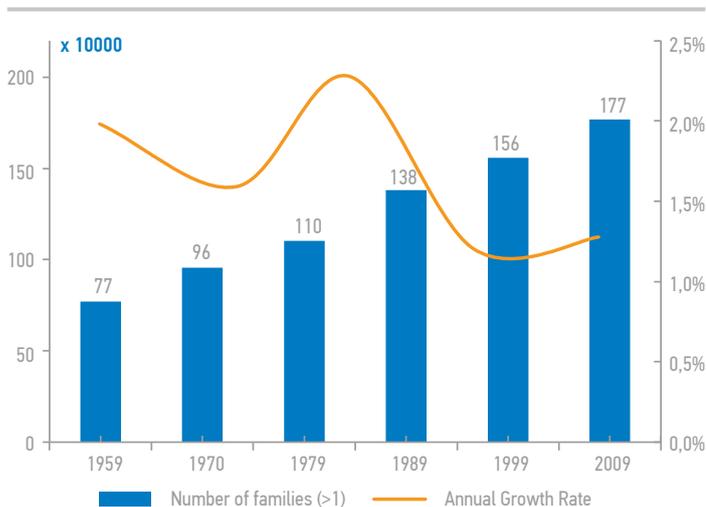


Figure 3

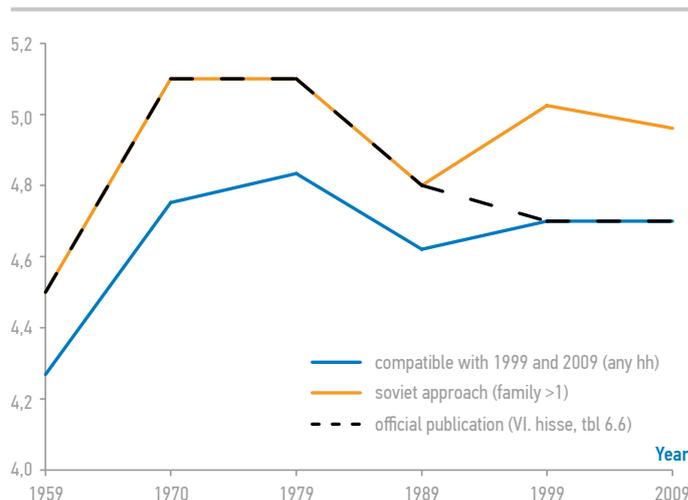


Figure 4

The analysis of fertility in real cohorts revealed that in the late 20th century the dominant family model in the urban population was a two-child family, the rural population chose to have a family with three children, and families with four or more children were rare. Childlessness and single-child families are uncommon and the majority of children grow up in a favourable environment surrounded by partners and one or two brothers and sisters.

A decline in fertility implies that the population's need for information, medical services and means for preventing unwanted pregnancy are growing, so that the special attention is paid to the prevalence of the different methods of birth control used in Azerbaijan. The data of the Demographic and Health Survey shows that induced abortion is the prevailing birth control method in Azerbaijan. Approximately one in two pregnancies is terminated through abortion. This means that in the mid-2000s about 140,000-150,000 induced abortions were performed in Azerbaijan while only 20,000 were officially registered. The main reason for the high abortion rates in Azerbaijan is that modern contraceptives are used by less than 20% of women aged 30+, who have normally completed their family formation and do not want to have more children.

The final part of Chapter 2 is devoted to analysing men's and women's preferences for the number of children in a family. About 60% of women and nearly half the men regard a two-child family as ideal, and only 5% of men and women prefer to have a single-child family. 70% of women and 55% of men believe that the ideal family should have the same number of boys and girls. Chapter 2 ends with general conclusions based on the analysis of the family structure, formation of married couples, fertility and family planning.

CHAPTER 3 provides an analysis of mortality and life expectancy. It introduces the theoretical framework for analysing mortality based on the concept of epidemiologic transition. The Chapter offers an overview of the historical dynamics and demographic factors of mortality levels in Azerbaijan in the second half of the 20th century. It points out that the mortality in Azerbaijan was low during the entire period for which data on the number of deaths and population size seems reliable. To assess the influence of the change of population age structure on the dynamics of the overall mortality, age-standardised mortality rates were calculated and analysed. This analysis shows that from 2005 the age structure of Azerbaijani population has a negative effect on the dynamics of the overall level of mortality. By comparing the mortality rates between men and women it was found that, although the differences in gender-specific mortality rates were steadily declining from 1994, the standardised risk (rate) of death for men is about 1.4 times higher than for women. It is also noted that the increase in mortality for men and women in the first half of the 2000s was

entirely resulting from the dynamics of age composition population, in the way that was more noticeable for male than for female population. The differences in the dynamics of the overall mortality levels in the urban and rural populations are insignificant. Usually the death rate in cities is slightly lower than in rural areas, however, an opposite picture was observed in the second half of the 1950s and in the mid-2000s.

The analysis of mortality by the causes of death testifies that over the past two decades cardiovascular diseases have been the principal cause of death in Azerbaijan, and the mortality rates from these diseases have increased significantly since the early 21st century. The second highest cause of death is cancer. The death rate from cancer is five times less than from cardiovascular diseases, however it has been increasing since 2000. These are followed by the diseases related to the digestive system, injury, poisoning and some consequences of external causes. The structure of causes of death leads to the conclusion that Azerbaijan is in the final stage of epidemiological transition, when the proportion of deaths from infectious diseases declines and the non-communicable degenerative diseases and diseases of endogenous origin become the principal cause of death, and the risk of these diseases increases with age. The Chapter also looks into the dynamics of the overall mortality rates for men and women and assesses the risk of death for men by the main groups of causes.

Given that the death rates from specific causes correlate to age more than to overall mortality, the study produced estimations and analysis of age-standardised mortality for the male and female populations.

The Chapter also gives consideration to infant mortality. First of all, it discusses the definition of live birth used in Azerbaijan. The instructions of the Ministry of Health suggest that the formal procedure in Azerbaijan since 2007 for all medical facilities, and since 2004 for all civil registries, has been to use WHO criteria when defining a live birth.

The analysis of infant mortality provided in the Chapter shows that the level of infant mortality in Azerbaijan progressively decreased from the early 1950s. In the 1970s the level of infant mortality stabilised and even increased, but from the beginning of the 1980s it again began to decrease. The declining trend, interrupted in 1990-1994, continues today and continues to drop with each decade. According to official statistics, currently 11 of 1,000 newborn children die before their first birthday. The report pays particular attention to the fact that infant mortality in rural areas is much lower than in urban areas. This situation is rather unusual, as infant mortality is lower in the cities, where the birth rate is lower, the level of education of women is higher and the health care facilities are more available than in the rural settlements. Nowadays, about 5 newborns die before the first anniversary per

thousand live-births in the rural area against about 17 per thousand in the cities.

Given the differences in the infant mortality rates between urban and rural areas, the report discusses the issue of data quality and completeness of birth and death registration, irrespective of the definition of a live birth. As a number of scientific publications provide different estimates of the magnitude of under-reporting of infant mortality, the report makes its own calculations on the basis of data from the various population censuses and mortality tables of Azerbaijan. These calculations confirm that infant mortality is indeed under-reported and reveal that during the first half of the 2000s the actual infant mortality level was 48% higher than the official level, dropping to 35% higher in the second half of the decade. Thus, around half the infant deaths and 1% of live births were not registered. The calculations also showed that the magnitude of under-reporting is, in fact, reducing.

The territorial differences in infant mortality in Azerbaijan seem very significant. But as the number of infant births and deaths in many administrative districts is very small, the differences between infant mortality rates in regions and their deviation from the national level are statistically insignificant.

The Chapter also provides an analysis of infant mortality by causes of death. It reveals that the dynamics of infant mortality before the age of one fit the general pattern of decline in infant mortality associated with improvements in sanitary conditions, personal hygiene and health care, that lead to a decrease in mortality from respiratory infections, infectious diseases transmitted through food, and exposure to cold. The available data show that from 1981, infant mortality declined as a result of a decrease in mortality from infectious and parasitic diseases and diseases of the respiratory system. However, since 2005, the structure of infant mortality

causes in Azerbaijan has seen significant changes. Firstly, between 2005 and 2012, mortality from respiratory disease halved (52-26%), while mortality from congenital and chromosomal abnormalities almost doubled (8-15%). Infant death related to conditions originating in the perinatal period, which had shown a minimal but steady growth since 2005, suddenly increased from 19% in 2010 to 27% in 2012.

Finally, the Chapter presents an analysis of age-specific infant mortality, albeit that published official statistics contain almost no data to estimate the age-specific structure of infant mortality in Azerbaijan and its changes over the past 20 years. Information published in official sources with reference to the Ministry of Health's Department of Health Statistics reveals an unusual age structure of infant mortality in Azerbaijan in the late 1990s, with 20% of infant deaths occurring during the neonatal period and 80% in the post neonatal period. Given that the official overall infant mortality in this period was 15-16‰, the ratio of neonatal to post neonatal mortality should have been the reverse. This raises again the question of the completeness of the registration of demographic events and the quality of mortality statistics in Azerbaijan. The 2006 Azerbaijan Demographic and Health Survey (the 2006 AzDHS) showed that, in the first half of the 1990s, neonatal mortality represented around 45% of the total number of infant deaths. In the second half of the 1990s, this increased to 55% and during the five-year period preceding the 2006 survey, accounted for 65% of infant mortality. Hence, the 2006 AzDHS results suggest that, if 16% of neonatal and 55% of post neonatal deaths were recorded by official statistics in the 1990s, and 13% of neonatal and 50% of post-neonatal deaths were recorded in the first half of the 2000s, then the registration process had in fact worsened.

The Chapter concludes with an analysis of life expectancy dynamics for men and women in urban and rural areas of Azerbaijan. Given that during the demographic transition infant mortality was the key factor influencing the increase in life expectancy, the results of the analysis should be treated with caution because of the contestability of the infant mortality data.

The analysis of the dynamics and components of the evolution of life expectancy in Azerbaijan showed that until the end of the 20th century, the growth in life expectancy in Azerbaijan was mainly, if not entirely, due to the reduction in infant and child mortality. During the last 20 years, the decrease in mortality in men of working age has played an important role in the increase in overall life expectancy. It is interesting to note that in Azerbaijan there are no significant differences in life expectancy between urban and rural populations. Between 1990 and 2000, an unexplained mortality increase was observed in older age groups in Azerbaijan. Azerbaijani men currently live an average

Figure 5
Dynamics of male and female life expectancy in urban and rural areas. Azerbaijan, 1970-2011

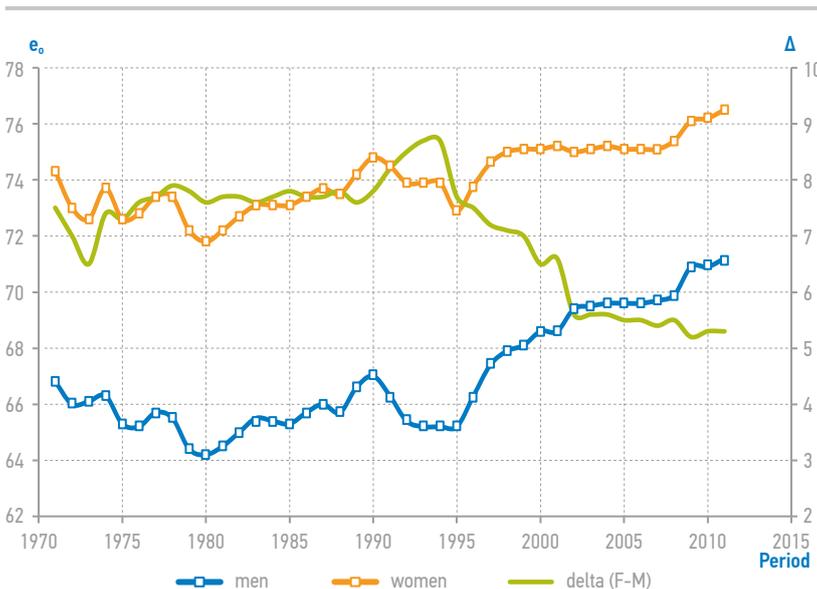


Figure 5

of 5.5 years less than women and are more likely to die during middle age than women. The current decline in male mortality at ages 50 and older represents the main reserve of the decrease in the gender difference in life expectancy, although the widest gender gap is observed in the 40-45 age group. Chapter 3 ends with general conclusions drawn from the analysis of mortality and life expectancy in the Republic of Azerbaijan.

CHAPTER 4 complements the three chapters of the demographic analysis with an overview of the gender dimension of Azerbaijan's present-day society and women's situation. The Chapter analyses the current legislative environment and statistical data and reveals that despite the legal guarantees of equal rights for all citizens regardless of sex, gender inequality remains an important factor influencing the organisation and functioning of a family and society as a whole.

The Chapter looks into the gender inequalities in education, professional development, career choices, employment, income, time allocation, participation in decision-making and in holding high-level government posts. The Chapter points to the unequal division of family responsibilities that limits women's activities to family labour with the responsibility of bearing and raising children being the most important. As a result, in Azerbaijan the access women have to resources (economic, cultural, information and social) is significantly restricted compared to men. The level of women's participation in decision-making in personal, public and political domains is also considerably lower than men's.

The analysis of the gender inequalities in education shows that girls drop out of school more often than boys after completing primary school but before finishing secondary education. The Chapter highlights the problem of gender segregation in higher education as women are traditionally over-represented in teachers' training faculties, humanitarian and social sciences, while the majority of students studying the exact sciences, economics, management, and professions related to oil industry, civil engineering and transport are male.

The analysis of male and female employment in the various economic sectors leads to the conclusion that vertical and horizontal gender segregation in professional activity continues to be an issue in Azerbaijan, and can reduce the positive effect of the 'demographic window' period on socio-economic development. The gender inequality in employment is further exacerbated by the disproportionate engagement of women in the informal sector, and men's labour migration.

Despite the fact that the legislation of Azerbaijan guarantees men and women equal rights to work and equal pay for equal jobs, women earn 1.5 times less than men as a result of gender segregation in economic activities.

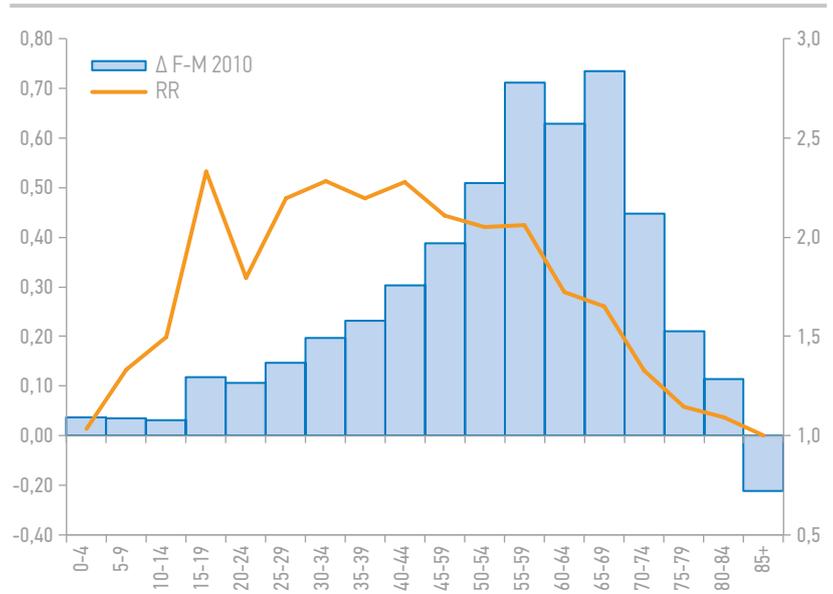


Figure 6

Finally, the Chapter considers the gender aspects of the ageing population. It shows that since 2007 over 60% of all pensioners in Azerbaijan were women, due to longer life expectancy and earlier retirement age compared to men. As women are concentrated in the low-paid sectors and at the bottom of the occupational hierarchies and are involved in unpaid family labour, they fall into the category of citizens with minimal pension benefits.

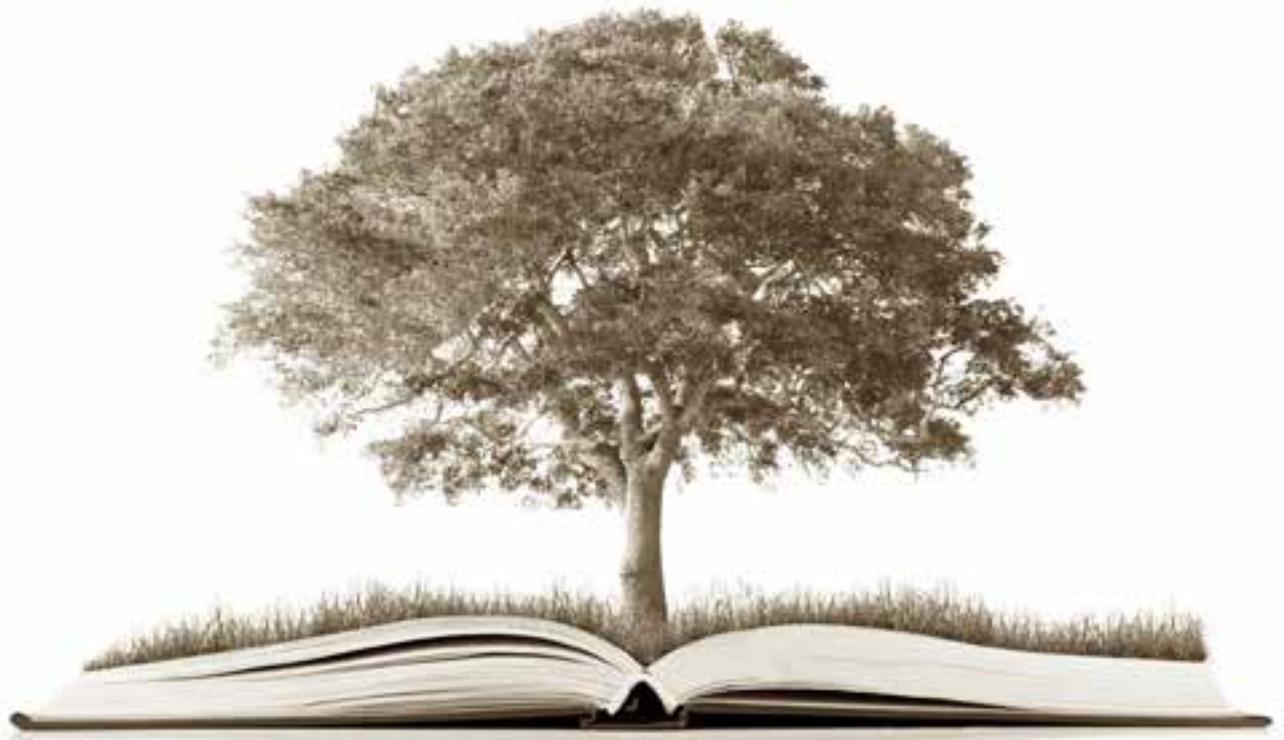
Annexed to the report is a short overview of the current national population policies of the Republic of Azerbaijan prepared by a team of national experts.

Data

The report uses data from the official sources of the Republic of Azerbaijan, namely the statistical yearbooks for 2011, 2012, 2013 and 2014 and the web portal of the State Statistics Committee of the Republic of Azerbaijan. In some cases the analysis was complemented by data from other sources, such as the UN World Population Prospects database, the WHO mortality data by cause of death, data from the statistical agencies of other countries, and this data is duly referenced in all projections and graphics. Reference sources are not provided for data from official sources of the Republic of Azerbaijan.

All indicators used in the tables, figures or maps are calculated based on the primary data of the demographic events (marriages, births, divorces, deaths etc.), even in those cases when these indicators are available from the reference tables of the State Statistics Committee of the Republic of Azerbaijan.

Figure 6
Age-specific decomposition of gender gap in life expectancy and relative risk of death for men. Azerbaijan, 2010



INTRODUCTION

Global context: population dynamics and demographic challenges of the modern age

The fundamental and most stable characteristic of any demographic situation is the natural reproduction regime; a historical combination of fertility and mortality. A change in the reproduction regime of a population is the rarest phenomenon in human history and can last from a few decades to a several centuries, as demographic processes are highly inert and their long-term dynamics react only slightly to the changes in the socio-economic condition. A demographic situation cannot be adapted to the goals of development, rather development should be adapted to the demographic situation to avoid the deterioration of living conditions, or crises and the destruction of fundamental social structures.

The geopolitical situation in the modern world has, to a large extent, been shaped by historical changes in the population reproduction regime that affected north-western European countries three centuries ago - known as the demographic revolution or demographic transition. This demographic transition was characterised by a decline in the mortality followed by a decline in the fertility, caused by what is commonly called the 'modernisation of the society'. As the fertility decrease has been lagging behind the decline of mortality, the size of the population of Western Europe expanded rapidly, and the excess of European population rushed in turn towards other parts of the World. As a result of the mass migration of the European population to North America, Australia, New Zealand, South Africa and some Latin American countries, the indigenous populations in these countries became ethnic minorities.

The demographic expansion of the European world went hand in hand with its economic might. The declines in

death and birth rates during the demographic transition led to a radical transformation of the age structure. With the decline in the infant and child mortality population becomes younger with growing percentage of children and youth. Later, as the fertility began to decline, there was a decrease in child population and an increase in the working-age population. During the period called "demographic windows" of "demographic dividend", the excess of cheap labour (high labour potential of the population) and the decrease in the share of the population of non-working ages boosted investments and enabled the rapid industrialisation of Europe. Thus, by the early 20th century demographic transition had shaped the present-day geopolitical situation, with the largest share of the scientific potential, political power and wealth concentrated in the countries of the "European World" regardless of their geographical location. In the second half of the 19th century and first half of the 20th century the European world took control of many countries and territories through the establishment of colonies, protectorates and other forms of dependency.

In the early 20th century signs of demographic transition were observed in the Central and Eastern European countries and in the European part of the Russian Empire and later the USSR.

The consequences of demographic transition in Third World Countries

In the 1950-1960s demographic transition began to occur in other continents - Africa, Asia, Latin America and Oceania. However, in the countries of these regions the dynamics and consequences of demographic transition were different. In Western Europe the mortality declined very slowly, as a result of improvements in sanitation and environment, whereas in the countries of the Third World¹, a term coined by French demographer Alfred Sauvy in 1952, mortality

¹ L'Observateur [politique, économique et littéraire], August 14, 1952

fell rapidly owing to the transfer of medical technologies and, primarily, mass vaccinations. At the same time, in the context of a pre-industrial society and agrarian economy, the fertility level was remaining constant, or in some cases began increasing as women's health improved. As a result, from the 1950s the countries of the Third World experienced a rapid population increase termed 'population explosion'.² While the demographic transition in the 'European world' was a factor of economic development, the rapid population increase in the Third World impeded socio-economic progress, deepened poverty and constrained the supply of drinking water and food.

As the demographic transition, characterised by the falling fertility and longer life expectancy progressed, the period of demographic dividend was replaced by a period of demographic ageing of the population. In fact, the entire history of humankind is a history of population ageing, as expressed in the increase of the mean age caused by the increase in the mean life expectancy and resulting in the rising share of the older population. The ageing of the population was not a cause for concern until the period of demographic dividend ended, as the mean number of years lived in the working age (e.g. from 18 to 60 or 65) increased more than the mean life expectancy of those persons who reached the upper ceiling of the working age. In developed countries the number of years lived in the working age reached its maximum by the end of the 20th century and mean life expectancy increased exclusively due to the increase in the number of years lived beyond working age. The proportion of the aged population continues to rise globally. Addressing this new demographic challenge requires the large-scale re-distribution of resources between generations in favour of older people. In north-eastern Europe the proportion of the population aged 65 and above increased from 9.5% in 1950 to 16% in 2010, or by nearly 1.7 times, and included a high proportion of very old people with specific needs. However, the proportion of the population under 20 decreased from 32% to 23.7%, or by nearly 1.4 times. In the northern European countries, which are at the most advanced stage of demographic transition, the proportion of the population aged 80 and above increased from 1.3% in 1950 to 4.4% in 2010, or by 3.3 times. This trend gives rise to a number of administrative, economic and moral challenges that need to be addressed.

New challenges or second demographic transition

The problems related to the ageing of the population are further complicated by the new social transformation being experienced by developed countries where demographic transition was believed to have ended. This transformation, known as 'the second demographic transition', involves fundamental changes to family and

marriage patterns, gender structure and social relations³. At the outset, the second demographic transition was characterised by a limited number of demographic indicators, such as an increase in the mean age of the first marriage and an increase in the mean age of women having their first child. In the 1990s a new characteristic – lowest-low fertility – was added. Whereas in the 1980s in average the total fertility rate (TFR) in European countries was 1.97 births per woman aged 15-49 (i.e. close to the basic generation replacement level), this indicator fell to 1.6 births by the 1990s and to 1.5 births by the early 21st century. Over the past few years the fertility in developed countries has gone up, but it remains considerably lower than the critical level of 2.01 births per woman. For example, despite the economic well-being, the TFR in Germany has remained below 1.5 births per woman for the past 30 years.

Today researchers are interested in the social and economic dimensions of the second demographic transition. The primary cause of this interest is the crisis of the civil marriage institution and the emergence of informal, or alternative, partner relations between men and women that maintain family functions such as cohabitation, common budget and home maintenance, childbirth and rearing of children, etc. The economic dimension of the second demographic transition relates to the reducing gap in the financial contribution of men and women into the family budget and greater gender equality in the distribution of family responsibilities.⁴

In theory, these observations point to the transition from a conventional to an egalitarian model of the gender structures of society that has begun in the developed countries. Some researchers believe, based on the experience of Scandinavian countries, that the exceptionally low fertility rate recorded in European countries in the 1990s and 2000s is a consequence of the transition to gender equality, and once that transition is completed, the fertility rate should increase to the replacement level. The increase in fertility and the stabilisation of the fertility rates will slow population ageing and stabilise the age structure.

In practice, since the early 21st century the countries of the "European world" have begun reviewing social protection policies related to family and marriage. Priority has been placed on the development of a legal framework for informal and alternative unions to provide for social protection, legal rights and the responsibilities of partners and their children. In addition, many countries are working to reflect the gender dimension in the provision of targeted social assistance for families with children to ensure greater equality between the two parents in terms of their eligibility for benefits, leave and special rights related to birth and rearing of children.

Hence, the present demographic situation produces a number of challenges arising from reducing fertility,

² See. Paul R. Ehrlich (1968) *The Population Bomb* New York, Ballantine Books, 223 p.; Paul R. Ehrlich, Anne Ehrlich (1990) *The Population Explosion* New York: Simon and Schuster, 1990, 320 p.

³ This term was introduced by D. van de Kaa and R. Lesthaeghe in the title of their article published in 1986. See Lesthaeghe, R. and van de Kaa, D.J. (1986): "Twee Demografische Transitie's?", in R. Lesthaeghe and van de Kaa, D.J. (eds): *Bevolking: Groei en Krimp, Mens en Maatschappij* book supplement, p. 9-24. Deventer: Van Loghum-Slatereus. Detailed narrative of the history of the concept and its interpretations was presented by Ron Lesthaeghe in 2010. See Ron Lesthaeghe «The Unfolding Story of the Second Demographic Transition». Population Studies Center, University of Michigan, Institute for Social Research. Report 10-696 January 2010

⁴ For detailed information, see Gøsta Esping-Andersen and Anders Holm, "A Fatal Leap? Gendered Income Dominance and Partner Instability". Paper prepared for the 2014 EPC meetings, Budapest (session 37); Gustav Feichtinger, Alexia Prskawetz, Andrea Seidl, Christa Simon and Stefan Wrzaczek, "Do Egalitarian Societies Boost Fertility?" Austrian Academy of Sciences, Vienna Institute of Demography. Working Papers 2 / 2013

increasing life expectancy, high international mobility and changing family behaviour and family relations. Responses to these challenges should be formulated with due consideration to the specific regional and national demographic context and trends. In countries where demographic transition is ongoing and the population continues to increase at a high rate, priority attention should be given to the development of reproductive health and family planning services, promotion of gender equality, and environmental and food security, including access to drinking water. Those countries approaching or reaching the stage of demographic dividend should also strengthen general and vocational education systems, create jobs and improve the business environment to promote investments in the national economy. Those countries where demographic transition has finished should give priority to the problems of social security and health care for older people.

The gender dimension of demographic transition

Besides the specific to particular stage of the demographic transition problems there are a number of end-to-end issues related to universal values and rights in regards to the health, worthy life conditions, education, access to information, personal security etc. Among the latter, the ensuring of gender equity, i.e. equal rights and opportunities for men and women, claims a special attention, because of the fundamental changes in status social and family roles of men and women that are occurring in the course of demographic transition.

Before demographic transition, in pre-industrial, or traditional societies, the social roles and status of men and women in society and family were rooted in the conventional gender-based division of labour that allocated responsibilities for acquiring (producing) commodities to men and responsibilities for housekeeping and childcare to women. In traditional societies the family played a role of the key institution providing social protection, allocating responsibilities for child rearing to parents and responsibilities for parents support to children. As the industrial revolution progressed and society modernised, especially in the first half of the 19th century, families no longer deal with production that was the main domain of men's work. However, the intra-family roles and statuses remain almost unchanged. Men continue to be responsible for acquiring commodities, but do so outside the family-household by being employed at an industrial or agrarian enterprise. Women continue to be in charge of managing the household and taking care of the family. By the late 19th century, as industrial development progressed, more and more women were engaged in paid labour and assumed the male role of producing commodities, while maintaining the traditional

women's role of running the house and carrying the burden of raising the children. As education and professional training becomes more valuable, this double or even triple workload puts women in an unfavourable position as they have less time and opportunity to take advantage of this than men. World War One created a huge demand for a female workforce and triggered the irreversible process of the mass involvement of women in paid labour, mainly in low-paid and sub-standard jobs. In the context of the global economic crisis in the first half of the 20th century, paid labour for women was no longer a matter of choice but a necessity, as one income was not enough to sustain a livelihood. This was followed by a dramatic drop in the fertility rate throughout the industrialized countries in the 1920-1930s. After World War Two, the developed countries established a social protection system that highlighted, along with health and education, the importance of the pension system. As the amount of pension benefit is defined by the amount of income and the duration of employment, women were again at a disadvantage because they spent part of their working age raising children and their incomes were lower than men's. Thus, elderly women continued to depend on their husbands and families for social protection. As the life expectancy of retired men was much lower than for women, women faced a higher risk of widowhood. In the second half of the 20th century, the economic vulnerability of women was further aggravated as the family institution weakened. Against the background of rapid population ageing, the economic vulnerability of women became an obvious barrier to the growth of national well-being.

Demographic challenges of the modern world and population policy

Society and the state respond to the demographic challenges through the development of a demographic policy or population policy, which is conveyed in the development and implementation of national action programmes or other national level political and social actions. As countries at different stages of demographic transition have different levels of socio-economic development and specific cultural and historic contexts, they also have a different resource base from which to tackle the problems of population dynamics. Therefore, choosing effective national priorities and population policies depends to a large extent on the quality of monitoring and analysis of the national trends of population dynamics. One should keep in mind the lessons learned from the demographic history of the 20th century - no country is isolated from the global demographic processes and all follow the same general path of the demographic transition, with some specific features.

Demographic challenges trigger a change in the social environment that can occur either spontaneously (as

with European countries in the 19th century), or can be regulated through social and economic policy measures, as happened in many countries in the second half of the 20th century. There is no one-size-fits-all recipe to solve demographic problems, however, international experience and socio-demographic history point to some common principles and approaches for identifying priorities and assessing the effectiveness of a national population policy. Many of these principles were formulated following decisions taken at UN population conferences. The First and Second World Population Conferences held in 1954 (Rome) and 1965 (Belgrade) were attended by experts who discussed the general principles and approaches to the problems of population and development. The next World Population Conference took place in Bucharest at the government level and the first World Population Plan of Action was adopted. It was followed by the International Conference on Population in Mexico in 1984 that developed the basic provisions of the population policy and action programme. The decision of the Conference signed by nearly all participating Member States stated that a population policy shall not violate human rights and freedoms in personal and family life, including the right to decide freely and responsibly on the number of children, access to safe birth control and family planning services, including termination of unwanted pregnancy. Finally, the International Conference on Population and Development (ICPD) held in Cairo in 1994, recognised that socio-economic development and improvement of quality of life is not achieved by influencing population growth but, on the contrary, socio-economic development, gender equality and improved well-being are fundamental for successfully solving population problems. This decision was embedded in the ICPD Programme of Action signed by 179 participating Member States that envisioned measures to improve people's well-being and defined long-term objectives and priorities.⁵ The decisions of the Cairo Conference laid the foundation for the Millennium Development Goals that set global priorities for poverty eradication until 2015. This document was adopted by 189 UN Member States at the 55th session of the General Assembly on 8 September 2000⁶.

Progress towards the implementation of the ICPD Programme of Action over the past 20 years was reviewed at the 60th session of the UN and 47th session of the Commission on Population and Development of the UN Economic and Social Council (ECOSOC). The report of the UN Secretary-General - Framework of Actions for the follow-up to the Programme of Action of the International Conference on Population and Development Beyond 2014 - points to a greater demographic diversity between different regions and countries.⁷ The report also recognizes that "...our very accomplishments, reflected in ever-greater human consumption and extraction of the Earth's resources, are increasingly inequitably distributed, threatening inclusive development, the environment and our common future"⁸.

Progress towards the goals and targets of the ICPD Programme of Action and successful implementation of the new framework of ICPD Beyond 2014 cannot be achieved without a detailed and comprehensive analysis of the demographic situation and population reproductions trends at the national level. The detailed demographic analysis is feasible only if there are available adequate statistics on demographic events, population size and structure. All provisions of the ICPD Programme of Action and the ICPD Beyond 2014 emphasise the importance of data collection and the creation of databases on population movements and structure. In addition, policies to ensure the effectiveness of follow-up actions to the ICPD Programme of Action and ICPD Beyond 2014 should be devised with due consideration given to the specifics of national demographic development in a given historical and socio-political context. In this regard, the main purpose of a demographic analysis is not only to identify the general trends of population reproduction, determined by the fundamental changes of demographic behaviour and socio-economic and sanitary conditions, but also to understand the specifics of demographic dynamics as determined by the national historical context.

Local context (historical overview)

Today the Republic of Azerbaijan is an independent secular state in Eastern Transcaucasia, with a population of about 9 million people. It is rich in natural resources, has a developed economy and borders Russia (Republic of Dagestan), Georgia, Armenia, Turkey (Nakhchivan Autonomous Republic) and Iran. Although Azerbaijan has an ancient history, it first appeared on the political map as an independent state in 1918. Before that, geopolitically Azerbaijan was a toponym for a geographic region populated predominantly by Shia Muslims speaking a language of the Turkic group. The language and religion were the two key elements that laid the foundation for the Azerbaijani population to form their own nation state, a process that took centuries.

The history of the first independent Republic of Azerbaijan dates back to 28th May 1918 when the National Assembly of Azerbaijan adopted the Declaration of Independence and proclaimed the establishment of the Azerbaijan Democratic Republic (Azərbaycan Xalq Cümhuriyyəti) on the territory of Eastern and Southern Transcaucasia.

Although Azerbaijan's independence was proclaimed by the representatives of political parties that emphasised their Muslim or Turkic identity, the Democratic Republic of Azerbaijan instantly positioned itself as a secular state where all are equal before the law regardless of their religion, ethnicity, gender and political affiliation. This principle was embedded in the Law on Elections adopted on 21 July 1919 providing the basis

⁵ Cf. International Conference on Population and Development Programme of Action. <http://www.unfpa.org/fr/node/9038>

⁶ Cf. "United Nations Millennium Declaration" General Assembly, Fifty-fifth session UN A/RES/55/2 http://www.un.org/en/events/pastevents/millennium_summit.shtml

⁷ Framework of Actions for the follow-up to the Programme of Action of International Conference on Population and Development Beyond 2014 Report of the Secretary-General, 69th session, 8 February 2014, Item 13(b) of the preliminary list UN A/69/62, p.2/358: "Today, national demographic trajectories are more diverse than in 1994, as wealthy countries of Europe, Asia and the Americas face rapid population ageing while Africa and some countries in Asia prepare for the largest cohort of young people the world has ever seen, and the 49 poorest countries, particularly in sub-Saharan Africa, continue to face premature mortality and high fertility."

⁸ Ibid

for democratic elections for the National Assembly through universal, direct and secret balloting. Thus, Azerbaijan was the first Muslim country that granted suffrage to women. On 19 November, 1918, the National Assembly adopted the Law on the Establishment of the Parliament of Azerbaijan that affirmed the democratic and secular nature of the Republic of Azerbaijan. The Law reiterated the universal voting right and secret balloting and stipulated proportional representation of various ethnic groups. According to the Law on Citizenship of Azerbaijan, dated 11 August 1919, the right to obtain Azeri citizenship was granted to the nationals of the former Russian Empire regardless of religion and ethnicity if they or their parents were born on the territory of the Republic of Azerbaijan. Thus, nearly all the residents of Azerbaijan were considered citizens of the Azerbaijan Democratic Republic.

The Azerbaijan Democratic Republic faced a complex geopolitical context because the Russian government, did not wish to relinquish its exclusive rights to the Baku oil fields; nor did the politically influential Turkey and Great Britain. But Turkey was exhausted by its defeat in World War One and Great Britain was too far and could only access Azerbaijan's territory via Georgia or Iran. At the same time, Soviet Russia not only had an immediate border with Azerbaijan but also enjoyed strong in-country support from the members of the Russian left-wing parties that were broadly represented among the labour class of Baku. On 27th April 1920, the 11th Army of the Workers' and Peasants' Red Army crossed Azerbaijan's border; they invaded Baku the following day and declared the country the Azerbaijan Soviet Socialist Republic.

In early Soviet history the three newly created Soviet Socialist Republics of Transcaucasia were de-jure independent and de-facto controlled by Russia and the Russian Communist Party (Bolsheviks). In March 1922 the Azerbaijan, Armenian and Georgian Soviet Socialist Republics signed an agreement to establish the Transcaucasian Federation of the Soviet Socialist Republics (TFSSR). The first Congress of Soviets of Transcaucasia that took place on 13 December 1922 when the decision was taken to transform the TFSSR into the Transcaucasian Socialist Federative Soviet Republic (TSFSR) still preserving the independence of its constituent republics. The next step towards the integration of Transcaucasia into the Soviet system was the establishment of the Union of the Soviet Socialist Republics. The TSFSR became part of the USSR on 30 December 1922 along with Belorussian SSR, the Russian Soviet Federative Republic and Ukrainian SSR. Finally, when the new USSR Constitution was adopted on 5th December 1936, the Azerbaijan, Armenian and Georgian Soviet Socialist Republics were granted the status of independent union states and the TSFSR was de-facto abolished. At that time the Azerbaijani Turks were officially re-named Azerbaijanis, the national language was called Azerbaijani and the alphabet

changed from Latin to Cyrillic.⁹ The present-day national borderline and administrative and territorial structure of Azerbaijan was formed under the Soviet regime at the end of 1930s.

Under the Soviets the government system of Azerbaijan developed a new format. The real political power in Azerbaijan, like in other Soviet Republics, belonged to the leadership of the Communist Party¹⁰ and decisions related to economic development policies were made by Moscow. Formally, Azerbaijan continued to be an independent state with its national flag and emblem, constitution, legislative and executive powers, its own finances and state budget, although the latter were integrated into the All-Union system.¹¹ Politically, having Soviet citizenship helped to promote the perception of common space, however territorial disputes between Azerbaijan and Armenia continued. To a certain extent, the conflicts of 1905-1906 and 1918-1920 were perceived as being the remote past and would never be repeated, however the ethnic tensions between Azerbaijanis and Armenians continued to linger until an open conflict broke out in the late 1980s.

The mass deportation policy pursued by Stalin in the 1940-1950s did not affect Azerbaijanis as dramatically as other nationalities from the Caucasus and Transcaucasia. In 1947 the Kremlin decided to resettle Azerbaijanis from the Armenian SSR to the Kura-Araks (Kura-Araz) Lowland of Azerbaijan SSR. Following this decision, around 100,000 Azerbaijanis "volunteered to move" but in fact were deported to Azerbaijan, although different sources provide figures varying from 50,000 to 150,000.¹² It is assumed that one of the reasons behind the resettlement of the kolkhoz (collective farm) members was the demand for labour for the intensive cotton cultivation introduced on the irrigated lands of the Kura-Araz Lowland.

As was the case at the turn of the 19th and 20th centuries, the rapid development of oil production and oil processing in Azerbaijan in Soviet times resulted in a high concentration of people and manufacturing industries on the Absheron Peninsular and in Baku. By the early 1960s Baku became the fourth largest urban, centre by size of population, after Moscow, Leningrad and Kiev, becoming home to 26% of the total population of Azerbaijan SSR and 53% of its urban population.¹³ In comparison, the population of Kirovabad (Ganja), the second biggest city of Azerbaijan, was only 123,000 people. In total, between 1920 and 1989, the population of Baku increased from 330,000 to 1.8 million people. The new city of Sumgayit developed next to Baku on the Absheron Peninsular, with a population of 250,000 (Source: National 1989 census). This population growth on the Absheron Peninsular was fuelled by migration, as reflected in its ethnic structure: 78% Azerbaijanis, 8% Russians and 8% Armenians in Azerbaijan and 56% Azerbaijanis, 22% Russians and 17% Armenians in Baku.¹⁴

⁹ The national census of 1926 classified the population as 'Turks' (in the TSFSR their number was equal to 1 652 768 people), 'Ottoman Turks' (5 661 people) and 'Tatars' (10 574 people).

¹⁰ From 1918 to 1925 the party was named the Russian Communist Party (of Bolsheviks), from 1925 to 1952 – All-Union Communist Party (of Bolsheviks) and from 1952 to 1991 – the Communist Party of the Soviet Union.

¹¹ Over 23 months of its existence in the politically charged internal situation and challenging international environment the Azerbaijan Democratic Republic could not create its own constitution. Following the arrival of the Soviet power, the 1st All-Union Congress of Soviets held on 19 May 1921 adopted the first Constitution of Azerbaijan SSR based on the Constitution of the RSFSR. The Constitution of Azerbaijan was updated twice (new Constitution was adopted) to reflect the changes made to the Constitution of the USSR. The first update of the Constitution of Azerbaijan SSR was made at the 9th All-Azerbaijan Congress of Soviets on 14 March 1937. The last Constitution of Azerbaijan SSR was adopted at the Extraordinary 7th Session of the ninth convocation of the Supreme Council of Azerbaijan SSR on 21 April 1978. The current Constitution of the Azerbaijan was adopted by the national referendum of 12 November 1995. In 2009, 29 articles of the current Constitution were amended by referendum.

¹² The figure of 53,000 is referred to in "USSR After the Collapse" by O.L. Margania (editor)-SPb.: "Economic School", State University, Higher School of Economics, 2007, Chapter 7 "Azerbaijan: the last buffer of Europe on border with Iran?", p.334 (accessible at: <http://seinst.ru/page162/>); the figure of 150,000 is referred to in the Decree of Azerbaijan President Heydar Aliyev dated 18 December 1997. None of the figures is properly documented.

¹³ See National Economy in USSR in 1961 (Народное хозяйство СССР в 1961 году), Yearly Statistics Book, Moscow, Gosstatizdat, 1961, p.49

¹⁴ National Population Census, 1979

Although in Soviet times, the number of cities in Azerbaijan increased from five (Baku, Ganja, Shemakha, Lenkoran and Nakhchivan) to 65, these cities were rather small. In 1989, besides Baku, the most populous cities were Ganja (Kirovabad) with a population of 289,000, and Sumgayit, a satellite city of Baku on the Absheron, with a population of 254,000. These were followed by Mingechavir (82,000) and Lenkoran (72,000). In Shirvan, Nakhchivan, Khankendi and Evlakh the size of the population ranged from 50,000 to 60,000 people. The population size in other urban settlements varied from 2,000 to 40,000 people.

The Soviet period was marked by reforms in the social sphere and changes in social structure, which were geared towards the status of women in society. Political equality between men and women had been embedded in the Constitution of Azerbaijan SSR, 1921, and was reiterated by the Constitution of 1927.¹⁵ In addition to the equality of men and women in political and public life guaranteed by the Constitution, the Code on Family and Marriage adopted on 29 May 1928 established the legal equality of spouses and defined the mutual responsibilities of parents and children.

The Constitution of 1937 strengthened the legal protection of the population of Azerbaijan. First, it granted political rights to all citizens of Azerbaijan SSR regardless of their social status, whereas the Constitutions of 1921 and 1927 had limited the rights of certain social groups (e.g. individuals employing paid labour were not entitled to voting rights). Second, it introduced a special article guaranteeing gender equality – Article 129, Chapter 9 “Main rights and responsibilities of citizens” that read: «Women in Azerbaijan SSR shall have equal rights with men in all spheres of economic, state, cultural and political life. This right is ensured through granting them equal rights with men to work, to be paid for work, to leisure and recreation, to social insurance and education, and by state protection of the interests of mother and child, state assistance to mothers with many children and single mothers, paid maternity leave, and provision of a wide network of maternity houses, nurseries and kindergartens”. Third, the Constitutions of 1921 and 1927 only stated the task of providing citizens with full, comprehensive and free education, whereas the Constitution of 1937 guaranteed the right to education. According to Article 128, this right was ensured through ‘mandatory eight-year education’ and development of vocational education systems, higher and specialised secondary education, free access to all types of education and by providing instruction in the native language.¹⁶

Finally, Article 127 of the Constitution of 1937 guaranteed the rights of the citizens of Azerbaijan to free medical aid and to “allowances in old age and in case of a disease and disability”. The legal framework for social protection and meeting citizens’ needs embedded in the Constitution of 1937 remained nearly unchanged until the end of the Soviet period. The new

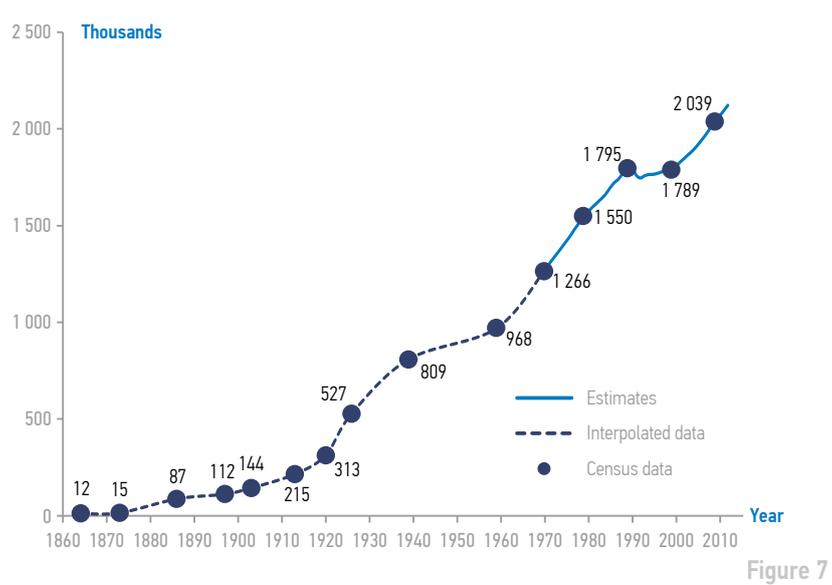


Figure 7

Figure 7
Baku population growth
(Source: population censuses and estimates between the censuses)

Constitution of Azerbaijan SSR of 1976 ensured the rights of citizens to health services, through the delivery of free, qualified medical services by state-owned public health institutions, and introduced an article on the right to housing.¹⁷ Thus, in 1937 Azerbaijan created the legal framework for the well-being of its population that would be at the heart of the Programme of Action of the Cairo Conference 57 years later.

Although independent Azerbaijan inherited the legal basis for preserving the social protection of the population and gender equality, the new socio-economic conditions require certain amendments to be made to the basic legal acts. For example, the present Constitution guarantees the right to free education only at the level of compulsory general secondary education, and no longer guarantees access to free medical services. These amendments do not necessarily imply of limitation of social entitlements as Article 3, Clause 2 of the Law of the Republic of Azerbaijan on Education guarantees the right to free education in state-owned education institutions, and higher and secondary specialised education is largely subsidised by the state through the scholarship system. Access to free medical aid is ensured by the Law on Health Protection of Population dated 26 June 1997 that guarantees the provision of medical services free-of-charge in state-owned public health institutions.¹⁸

It is noteworthy that the Constitution of Azerbaijan pays special attention to the issues of family and marriage that had not been part of the constitutional framework before. Specifically, Article 17, Clause 1 states that the family” as the foundation of society is under special protection of the State”. Article 34 reads that everybody has the right to marry upon reaching the age specified by law, no one shall be forced to marry, the rights of a husband and wife are equal and parents and children are obligated to take care of each other. Article 38 adds that “it is the primary obligation of the family members to

¹⁵ The Constitution of Azerbaijan SSR, 1921, Section 3, Chapter 11, Article 79; the Constitution of Azerbaijan SSR, 1927, Article 80, Chapter 8, Section A.

¹⁶ See Constitution of AzSSR 1921, Section 1, Chapter 1, Article 8; Constitution of AzSSR, 1927, Section 1, Chapter 1, Articles 10; Constitution of AzSSR, 1937, Chapter XI, Article 128: «Citizens of Azerbaijan SSR have right to education. This right is ensured by the mandatory 8-year education, extensive development of secondary polytechnic education, vocational education, specialized secondary and higher education based on linkages of education with life, industry; development of distant education and education in post-working hours, free access to all types of education, provision of state stipends, delivery of instructions in schools in native language, organization of free industrial polytechnic and agronomic trainings at factories, collective farms ».

¹⁷ See Constitution of Azerbaijan SSR, 1976, Chapter 6 Major freedoms, rights and responsibilities of the citizens of Azerbaijan SSR, articles 40 and 42.

¹⁸ See Law of the Republic of Azerbaijan on Health Protection of the Population, 29 June 1997, Chapter III, article 10 “Citizens of the Republic of Azerbaijan have the right to health protection and medical aid. Medical aid provided by the state-owned health facilities shall be rendered gratis; types of paid specialized medical aid are defined by respective executive authority with the exception of cases envisaged by this Law ... Stateless persons permanently residing in the Republic of Azerbaijan and citizens of the Republic of Azerbaijan have equal rights to health protection”. The Law on Sanitary and Epidemiological Well-being passed in 1992 guarantees to citizens free access to information “on the stage of the disease, epidemiological and radiation situation, state of environment and its impact on human health, results of hygienic and other special examinations, on government decisions that may have impact on human health and environment” (Chapter 1, p.6)

¹⁹ The decree of the Government of ADR "On the nationalization of lower and upper primary schools, and secondary schools" dated 28 August 1918 envisaged instruction to be conducted in the Azerbaijani language in primary and secondary schools, opening of the teachers' training and other courses, opening of primary and secondary schools teaching in state language. The question of the state language and language of instruction was very important because in the tsar Russia and later during the Azerbaijan Democratic Republic all government and administrative records were kept in Russian. From 1887 Russian was the language of instruction even in the Russian-Tatar schools whereas lesson of Azerbaijani language was taught only once a week. For this reason, instruction in Azerbaijani language, intellectual leaders of Muslim democratic movements in the Transcaucasia were keen to promote study of the Azerbaijani language and introduce it as a language of instruction and record-keeping. On the contrary, the Baku Council of People's Commissars established on 18 April 1918 was openly supported the All-Russian central authority and advocated for the "internationalization" of education. But it existed only until 31 July 1918. Until Baku was taken by the troops of the Azerbaijan Democratic Republic, it was governed by the dictatorship of the Central Committee of the Caspian Navy backed by the British troops. For detailed information on the history of the language of instruction see Aziza Nazarli People's Education in the Republic of Azerbaijan (1918-1920), Baku: Nurlan, 2008

²⁰ In reality only two faculties were opened: the medical faculty for three years and faculty of history and philology for one year. For detailed history of the Baku State University see A. Nazraliyeva (2008) People's Education in the Azerbaijan Republic (1918-1920), Baku, "Nurlan", 2008, p. 150 and onward; and A. Atakishiyev (1989), History of Azerbaijan State University, Baku, Azerbaijan University Publishing House, p. 829+1

²¹ Decree of the Azerbaijan Revolution Committee dated 30 May 1921 "On protection of motherhood and infancy in Azerbaijan"

²² See Decree of the People's Commissariat of Internal Affairs of Azerbaijan SSR dated 22 May 1920 "On the organization of the registries of the civil status acts under the revolution committees" and Decree of the Azerbaijan Central Executive Committee dated 9 February 1923 "On Islamic marriage contracts concluded before 28 April 1920"

render assistance to those in their family who need it". With respect to the social protection of old people and people with disabilities, Article 38 of the Constitution guarantees all citizens "the right to social security in old age, sickness as stipulated by Law, disability, when losing work ability or the breadwinner of the family, when unemployed and in other cases specified by the law." This provision is further elaborated in the first edition of the Law on the Provision of Pensions to Citizens, adopted on 23 September 1992, and the Law on Labour Pensions dated 7 February 2006.

To summarise, one can conclude that from 1918 onwards the national legislation of Azerbaijan provided legal support to protect equality between men and women, the family, the health of the population, motherhood and childhood, the right of young people to education, and the right of old people, people with disabilities and vulnerable groups to social security.

In addition to the legal changes that took place in the 20th century, Azerbaijan experienced a fundamental transformation of its social structure and in the population's lifestyle. In addition to industrial development, predominantly oil production, transportation and processing, the country built its national education and public health systems, and an infrastructure to promote culture. These developments were accompanied by an increasing level of education within the population and the emancipation of women. The latter is particularly important because demographic transition is largely dependent on the evolving social role, function and status of women in the modernization process. In countries where demographic transition occurred early, the mass emancipation of women as a socio-historic phenomenon did not happen as quickly as the industrial revolution, the emancipation of men and other aspects of the modernization process, including the drop in the fertility rate, and the smaller and simplified family structure. However, in Azerbaijan and other countries of the Soviet Union, the emancipation of women took place in parallel or even before the other modernization processes.

With the gain of independence in 1918 and the beginning of the Soviet period, Azerbaijan provided constitutional guarantees for the right to education, the protection of health and for gender equality, though it would take years to establish the national education and public health systems. Among the first decrees of the newly-proclaimed Azerbaijan Democratic Republic was the establishment of the Ministry of People's Education on 28 May 1918 and the nationalisation of schools.¹⁹ On 1st September 1919 the Baku State University was founded. With its four faculties - History and Philology, Medicine, Physics and Mathematics, and Law, the University was expected to provide the local human resource pool for the nascent education and public health systems.²⁰

The Ministry of Health was created by the decree of the Government of Azerbaijan Democratic Republic on 17 June 1918 and given the responsibility for the protection of public health; at this point the provision of free medical aid was introduced. The Ministry was tasked with fighting epidemics, developing a medical infrastructure, procuring drugs, conducting sanitary monitoring and similar activities. In 1920 the Government of ADR allocated 43.3 million manats to expand the network of medical facilities. These funds were used to open 19 hospitals and 27 first-aid stations in Baku province, 15 hospitals and 34 first-aid stations in Ganja province, and 1 hospital and 2 first-aid stations in Zagatala region.

When the Soviets came to power and established the Azerbaijan SSR, efforts to develop the national education and public health systems continued. The Ministries of Education and Public Health were renamed the People's Commissariats but their functions remained the same. On 30 May 1920 a new department for the protection of childhood, motherhood and infancy was created under the People's Commissariat. It assumed responsibility for "providing healthy housing, sufficient nutrition and adequate conditions to ensure the physical and spiritual development for all children from birth to the age of 17".²¹ The decision of the People's Commissariat of Labour dated 13 December 1920 prohibited women from working at night or in harmful and unsafe environments. Women received 12 weeks' paid maternity leave and 16 weeks for those employed in harmful industries. In addition, breastfeeding mothers were entitled to a 30-minute break every three hours during the working day. The legislation on marriage and family was amended to provide for mandatory civic registration of marriage and divorce, child births and deaths.²² Polygamy was prohibited and was prosecutable.²³

The Civil Code of the Azerbaijan Republic, containing regulations regarding family and marriage, was adopted on 16 July 1923 at the 3rd session of Azerbaijan Central Executive Committee and enacted on 8 September 1923. This law established the equal rights of men and women in terms of inheriting the property of a surviving spouse and provided for the protection of children's right of inheritance. The Code of 1923 recognised that only marriages registered in the civil registry departments could have legal implications. Marriage could only be entered into on mutual consent and on reaching the age of 16 for girls and 18 for boys. In addition, it identified categories of individuals who were prohibited from entering into marriage including lineal relatives of ascending and descending line, adopted children and adoptive parents, and full, half and step brothers and sisters. Finally, it established equal rights for children born in or out of wedlock.

A substantial and positive transformation in the social sphere is difficult to achieve when faced with

occupation, military action and changes in the political regime. In 1926, 62% of the population was ethnic Azerbaijani (Turks) (60% of the population aged 9+), 12% Armenian and 10% Russian, while per 100 literate persons of both sexes Azerbaijanis constituted only 29%, Armenians 22% and Russians – 32%. The mismatch between the ethnic structure and literacy level of the population was even greater from the gender perspective – among the 100 literate men there were 36 Azerbaijanis, 27 Russians and 20 Armenians. Amongst literate women, however, the proportion of Russian and Armenian women increased to 44% and 25% respectively, while proportion of literate Azerbaijani women was as little as 12%.²⁴

This trend was also observed in the first decade of the 20th century. Although to a lesser extent and in a different context, it is likely to have had implications for inter-ethnic relations as the imbalances between the ethno-demographic and ethno-educational structure resulted in a disproportionate representation of the most populous ethnic groups among the administrative, ruling and intellectual elites.²⁵ The Soviet regime tried to address inter-ethnic tension by pursuing a policy of positive discrimination favouring the native population for managerial and decision-making positions at all levels of government. However, this policy did not solve the problem, instead it added fuel to fire as devalued professional qualifications and competences and allowed to reject any candidate regardless of his/her ethnicity. The only solution would be to improve the educational level of the population and to reduce the educational disparities throughout the country.

In the 1930s Azerbaijan witnessed the rapid development of the social infrastructure, primarily in the public health and education sectors. By 1940 the number of beds for pregnant women and women in labour increased up to 2025, which fully met the population's obstetrical needs.²⁶

In 1940 the country had 88 antenatal and paediatric clinics and 222 hospitals, with 12,600 beds, i.e. ten times more than in 1913, 3,000 doctors and 7,500 nurses. This represented a six-fold increase in the number of doctors and 10-fold increase in the number of nurses per 1,000 people as compared to 1913.

Moreover, in the 1930s Azerbaijan developed a social protection system for the elderly. The regulations on the provision of pensions by age, which granted a pension entitlement to men reaching 60 years old and to women reaching 55, were adopted by the decree of the People's Commissariat for Labour dated 11 February 1930. It also established the requirement for length of service of 25 years for men and 20 years for women. Special preferential conditions for retirement were also introduced for people working in hard and harmful environments, for long-serving workers engaged in education, civil aviation, public health, and

for scientists. In 1933 the responsibility for managing social insurance and pension provision was transferred to the trade unions. But as the trade unions were funded from the state budget, social coverage in the USSR and its republics ended up being subsidised by the state and not through the insurance scheme.

The number of pre-school facilities also increased rapidly in the 1930s and by 1940 Azerbaijan had 909 kindergartens and nurseries attended by nearly 44,000 children, with pre-school facilities accommodating about 57,000 children.²⁷ Tertiary and secondary specialised education was developing and in 1940 Azerbaijan had 16 higher schools enrolling 14,600 students and 91 vocational schools enrolling 17,400 students.²⁸ 1,900 scientists worked in scientific and research institutions of the country in 1940s.²⁹

The progress made towards eradicating illiteracy was impressive. As evidenced by the 1939 population census, the proportion of literate men and women aged 9-49 leaped from 28% in 1926 to 83% and gender disparities in the literacy level reduced considerably. From 1926 to 1939 the proportion of literate women aged 9-49 increased from 19% to 76% and the proportion of literate men in the same age group from 36% to 89%.

Azerbaijan achieved universal literacy in the 1950s and by the 1959 population census the percentage of literate men aged 9 to 50 reached 99% and literate women, 97%. From the mid-20th century the priority shifted from measuring the literacy level to measuring the dynamics of the educational level, i.e. measuring the structure of the population by the level of education corresponding to certain diplomas and years of schooling.

The low illiteracy rate in Azerbaijan achieved by 1940 was largely due to universal, compulsory secondary education that was free-of-charge and included in the Constitution and legislation of the Azerbaijan Republic and Azerbaijan SSR. The high literacy level and improvements in educational level resulted in the wider participation of women in paid labour. Between 1922 and 1939 the percentage of women in the total number of waged and salaried workers more than doubled - from 14% to 34%.

Along with rising educational levels in the 1920s and 1930s an infrastructure for the promotion of culture was also being built. By 1940 Azerbaijan had 31 theatres from two in 1913, 22 museums, and over 1,600 clubs. Not only had the population of Azerbaijan become literate, but people had begun to read more. Library numbers increased from 25 in 1913 to nearly 1,400 in 1940. That same year Azerbaijan published over 1,100 books with a total circulation of nearly five million copies including 614 books in Azerbaijani with a total circulation 3.9 million copies. In 1913 only 91 books existed, which were published in Azerbaijani, with a total circulation of 112,000 copies. In 1950, 94

²³ Article 96 of the Criminal Code of Azerbaijan SSR, revision of 10 June 1923, envisaged penal labour for at least one year as a punishment for concluding a new marriage while being in marriage that has not ended in a death of spouse or divorce. As it did not have the expected effect, the decree of the Azerbaijan Central Executive Committee dated 26 December 1925 introduced a penalty of 5 years of imprisonment for plural marriages, making a special provision that religious marriages also count. Penalty was also envisaged for those who had bogus divorce to be able to enter into a second marriage while continuing to cohabit with the first wife.

²⁴ Calculations based on the same source.

²⁵ For example, A. Nazarly wrote: "The high level positions in the People's Commissariat for Enlightenment were not offered to the natives but to Russians, Armenians or others. For example, Armenians were appointed to the position of the head of department of pre-schools education and head of the department of secondary schools, and Russian was in charge of the department for lower school. Of 7 persons elected into the publication commission under the People's Commissariat of Enlightenment tasked with the publishing of the school magazine only 2 were Azerbaijanis: Narimanov and Akhundov", *People's Education in the Azerbaijan Republic*, Baku, Nurlan, 2008, p.44

²⁶ See National economy of the USSR in 1960. Yearly statistical book, Gosstatizdat, Moscow, 1961, p. 827. According to the State Statistics Committee of the Republic of Azerbaijan (table 2.2) about 98,000 births were registered in Azerbaijan in 1940 (on average 102,000 births per year between 1937-1940) that given the number of available beds makes an average of 7 bed/days per delivery.

²⁷ Works in this direction were stimulated by the Decree #65 of the Central Executive Committee of the USSR and Decree # 1134 of the Council of People's Commissars of the USSR dated 27 June 1936 «On prohibiting abortions, increasing material aid to women in labour, on defining state assistance to large families, expanding network of maternity hospitals, nurseries kindergartens, toughening criminal penalty for failure to pay alimony and introducing amendments into the legislation on divorces».

²⁸ See National Economy of the USSR in 1960, pp. 548-549.

²⁹ See National Economy of the USSR over 70 years. Anniversary edition of the statistical yearbook. "Finance and Statistics", Moscow: 1987, p.65

newspapers with a circulation of 419,000 copies were published including 73 newspapers in Azerbaijani with a circulation of 224,000 copies.³⁰

Finally, by the early 1930s, Azerbaijan had created a system of statistical monitoring for economic and social development and population dynamics. The national statistical system was closely integrated with the All-Union statistical service, and managed, coordinated and controlled by the Central Statistics Administration (CSA) based in Moscow. In this highly centralised environment, that continued until the end of the Soviet period in Azerbaijan's history, local statistical bodies were responsible for collecting information in compliance with the methodologies developed by the CSA that then provided local administrations with the statistical data necessary for management. Nevertheless, in 1920-1930s Azerbaijan created a modern system of demographical statistics that collected information in two ways – through the routine recording of demographic events (marriages, births and deaths) and through the organisation of one-time counting (census) of the population. Prior to World War Two Azerbaijan conducted three country-wide population censuses – in 1926, 1937 (census cancelled and data not processed) and 1939. Additionally, by the late 1920s Azerbaijan had created the most extensive network of civil registry departments in the Soviet Union by opening branches in both cities and rural areas. In 1926 local branches of the civil registry existed in 1395 out of 1451 rural councils.³¹ Social statistics was also developing with due consideration to sex-disaggregated data that enabled to monitor the situation of women in the Azerbaijani society.

By the 1930s Azerbaijan had in place all conditions required for the modernization of demographic behaviour but many problems remained unresolved. Despite the rapid development of the public health

system and the increased access to qualified obstetric services, the infant mortality rate in Azerbaijan remained high – in 1935-1940, nearly 11% of infants died in their first year.

A rapid analysis of the social, demographic and gender statistics reveals that on the eve of World War Two, Azerbaijan was a transformed state with a literate population and a pool of local intellectuals. It had a well-developed social infrastructure, and effectively functioning public health, education and social protection systems financed by the state. In the period from 1918 to 1940 the transformation of social life in Azerbaijan was advancing faster than its industrial development and changes in the mind-sets of most Azerbaijanis who continued to stick to traditional family values. This probably explains the fact that the increase in education, improvements in public health and the living standards of the population in the 1930s and 1950s were accompanied by a considerable rise in the fertility rate. Although partly incentivised by national policies which encouraged large families to stimulate increased fertility in the European part of the USSR, in reality they merely created a conducive environment for preserving the traditional family setup and maintained high fertility in those regions of the USSR where the demographic transition was still in its early stages.

The transformation of Azerbaijan's society continued into the 1950s. This post-war decade was marked by a noticeable reduction in the mortality rate, owing to the expanding network of medical facilities, improvements in hygienic conditions and the use of antibiotics in treating infections. As a result, the mortality level dropped from 13 deaths per 1,000 population in 1937-1940 to 9 deaths in 1950-1955.

In the 1950s the fertility rate surged considerably, driven by both the value placed on large families by Soviet policies, to stimulate fertility and enable women to combine family and professional responsibilities, and by the post-war “baby-boom”. As a result, the fertility rate surged from 31 births per 1,000 in 1938-1939 to 40-41 births per 1,000 by the late 1950s. With the drop in mortality and the rise in fertility rates Azerbaijan entered a period of ‘demographic explosion’ in 1955-1959.

From 1955, the annual natural population increase exceeded 100,000, consequently doubling Azerbaijan's population over a period of 17-23 years. Although from the mid-1950s external net migration was negative the volume of migration outflow was incomparable to the rate of natural population increase. The natural population increase reached its peak in the early 1960s, and the trend of linear growth has remained constant until now. As a result, in the second half of the 20th century the population size increased from 2.9 to 8 million turning Azerbaijan into a demographic leader in the Transcaucasia.

Figure 8
Proportion of women and men employed by economic sectors, as % of the total number of people employed in each sector (calculated based on the 1989 population census)

³⁰ See National Economy of the USSR in 1960, pp. 796, 802, 809-811, 814

³¹ In other words, in rural areas of Azerbaijan there were 1193 residents per a civil registry department. The civil registries were more expanded only in the Armenian SSR, with 871 residents per a rural civil registry. For comparison, in the rural areas of Ukraine there were 2232 residents per civil registry, and in Belarus -2914. See the background of the issue M.P. Krasilinokov “Legislation on the civil registry of civil status acts” in the book Natural movement of the population of the USSR in 1923-1925, Central Statistics Committee, USSR, Department of social statistics. Division of the statistics of social composition and movement of the population. Volume 1, Edition 1, Moscow: Published by CSC USSR, 1928. p. III- XIII (Introduction)

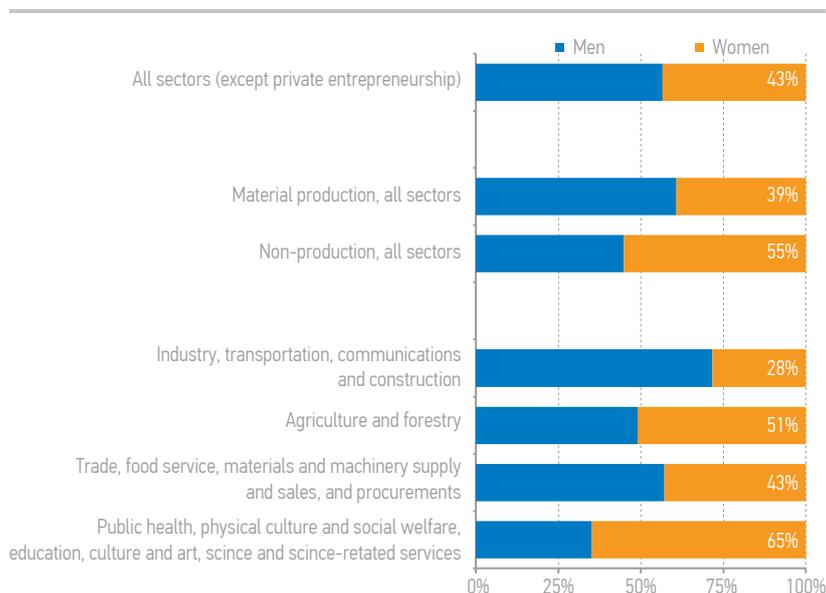


Figure 8

The rapid population growth in the 2nd half of the 20th century could have put constraints on the socio-economic development of the country, however this was not the case and Azerbaijan maintained its transformation dynamics in the 1960s and onward. The network of healthcare and pre-schools facilities further developed and the quantitative capacities of the healthcare system created by the 1980s fully met the needs of the population in health protection and obstetrics services. However, in the 1970s and 1980s, as the increase in life expectancy in the USSR slowed down and even reversed, the effectiveness of the Soviet healthcare system was questioned in the new epidemiological context where non-communicable diseases became the main cause of death, and services for preventing unwanted pregnancy was required more and more.

In the post-war period, pension provision by age, disability and loss of breadwinner also continued to improve. In the 1980s of the nearly 800,000 pensioners half received retirement benefits by age (60 years for men and 55 for women). As Soviet legislation allowed pensioners to both work and receive retirement benefits, for many retirees work pay was the main source of income. According to the 1989 census, work pay was the main income for 33% of men aged 60+ and pensions for 65%. 75% of women aged 55+ reported receiving main income from pension and 18% from paid work. Combining paid work with a pension allowed 98% of men and 93% of women of retirement age to have an independent income and only 5% of the population of retirement age were financially fully dependent (Chart 9).

By the early 1970s Azerbaijan had nearly achieved 100% literacy among the population aged 9 to 49. To ensure the rapidly growing population had access to universal secondary education, the construction of new secondary schools continued and by 1980 4,300 secondary schools were functioning, with an enrolment of 1.6 million students, i.e., all children of school age, both boys and girls.

In the 1980s the country had 17 tertiary schools (100,000 students) and 75 secondary specialised schools (around 80,000 students).³² According to the 1989 census, 88% of the population aged 15+ had high and secondary complete or incomplete education, and 12% of the population had higher complete or incomplete education. 18% of the population aged 25-49 has tertiary complete and incomplete education, 20% completed secondary specialised education and 46% completed general secondary education. Only 12% of the population aged 25-49 had incomplete secondary education and 3% had primary education. In other words, in 1980s the population of Azerbaijan had a very high level of education. The number of libraries continued to grow in the 1980s, meeting the demand of the population and, in 1985, a total of 914 books were

published in Azerbaijani with a circulation of 12 million copies, hitting a record volume for the Soviet period in Azerbaijan's history. In 1990 149 newspapers with an annual circulation of 141 million copies were published in Azerbaijani.³³

Last but not least, the situation of women in Azerbaijani society changed significantly. By the late 1980s 43% of women were receiving salaries and wages and 51% were farmers. The 1989 census showed that women represented the majority in the sectors of education, health, culture and science (Figure 8). In the 1980s the share of employed women and those represented in decision-making bodies were nearly the same, e.g., in 1985 out of 450 deputies of the Supreme Council of Azerbaijan SSR, 179 were women, or 39.8%. At that time this was the highest indicator of women's participation in law-making bodies among all USSR republics. Women accounted for nearly half (48.1%) of the 50,799 deputies in local councils in the Azerbaijan SSR.³⁴

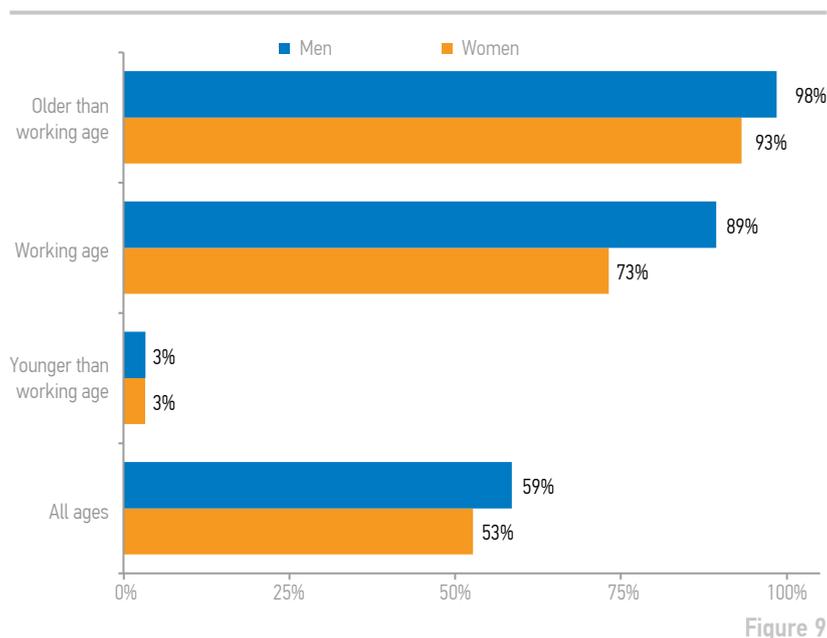
Nonetheless, certain gender disparities persisted in the 1980s. Although women represented the majority in education, health and science, the average education level of women was lower than that of men. According to the 1989 census, 15% of women and 22% of men aged 25-49 had higher education (complete and incomplete), 18% of women and 22% of men had secondary specialised education and 46% of women and 45% of men aged 25-49 had general secondary education. More women than men aged 25-49 had incomplete secondary education (15% and 9% respectively), while 4% of women and only 1% of men had primary education. Moreover, women had a lower employment rate than men, and less often had an independent source of income (Figure 9). The latter was due to the still relatively high fertility rate in the 1970-1980s, when an Azerbaijani woman had an average of

Figure 9
Proportion of women and men having income, by age, as % of the total number of people in each age group (calculated based on the 1989 population census)

³² Ibid, pp.222-223

³³ Ibid, p.239

³⁴ 24 432 women were deputies of local councils at all levels (1987 elections)



3-4 children and had to spend a significant amount of time on family responsibilities and was often deprived of opportunities for professional development. Finally, women were concentrated in the lower-paid sectors of the economy. Thus, the average income of women was lower than that of men despite the de-jure equal rights.

As mentioned earlier, improvements in sanitation and hygienic conditions, the development of healthcare and the use of antibiotics for treating infectious diseases had reduced the mortality rate to a minimum level by the mid-1950s (Figure 10). Thereafter, fertility became the driving factor of demographic dynamics in Azerbaijan. According to population data published by the State Statistics Committee of the Republic of Azerbaijan, the rapid transformation of the Azerbaijani society in the 1920s and 1930s had little implications on family behaviour patterns, and the fertility increased further in 1937 and 1950s as a consequence of the national assistance programmes which targeting large families. In 1959-1962 birthrate hit an historic record of 40 births per 1,000 population. By the mid-1970s this indicator reduced by nearly half and stabilised at around 25 births per 1,000 population until the end of the Soviet period.

The ratio between the number of live births in a given year to the mean annual population size shows the annual contribution of the birthrate to the population increase. The magnitude of this indicator - 'the crude birth rate' - largely depends on the age structure of the population, i.e., the number of women in the population and the number of women of reproductive age.³⁵ As the transformation of the society progresses and the notion of an ideal family changes towards having less children, the crude birth rate may grow simply because the proportion of children in a given population declines and as a consequence the proportion of women of reproductive age increases. This was the case in Azerbaijan in the 1970s and 1980s, in the period of stabilisation of the crude birth rate. The age structure of the population also depends on the crude birth rate, as it defines the width of the base of the demographic

pyramid that illustrates the distribution of population by sex and age groups. Owing to the high fertility in the 1950s-1980s, by the end of the Soviet period Azerbaijan had a very young population, with 33% of children and teenagers below the age of 15 by early 1991. The reproductive potential of the population was determined by the fact that women of reproductive age constituted nearly 25% of the total population, and the workforce potential was determined by the fact that half of the population was aged 18 to 55 years, whereas only 10% of population were pensioners, i.e., in the late 1980s Azerbaijan entered the period of 'demographic dividend'.

Although the 'the demographic dividend' period promised certain advantages, the declining fertility rate gave rise to new problems related to the growing need to prevent unwanted pregnancy. The 1959 population census and vital statistical data point out that, despite societal transformation and the increasing employment rate and education level of women, the traditional, practically unlimited fertility prevailed as a model in Azerbaijan until mid-1960s. The cumulative birth rate during this period hit its historic record of 5.3 births per woman and was one of the highest birth rates in the world.

In the second half of the 1960s the ideal model of a large family gradually became a thing of the past in Azerbaijani society. By the late 1980s the total fertility rate dropped to 2.8 births per woman. With its fully employed population and state-provided housing and universal and free access to medical services and education, Azerbaijan had now adopted a family model already in existence in those Soviet Republics where the decline in the fertility had started earlier. This model is characterised by early and universal marriage, low fertility and a rapid pace of family formation. In 1979, whereas only 1.4% of women aged 17 were married, this figure reached 18% by age 19 and 75% by age 25. This trend continued in 1989. The mean age of motherhood was 30 years in 1967 and dropped to 27 by the late 1980s

Figure 10
Specifics of the demographic transition in Azerbaijan from 1935 to 2014

Figure 11
Age pyramid of Azerbaijan SSR (population structure by sex and age) as of 1 January 1991

³⁵ Historically, age structure of the population is determined by the dynamics of fertility, mortality and migration over the past hundred years impacted by non-demographic events such as wars, epidemics, natural disasters, social catastrophes etc.

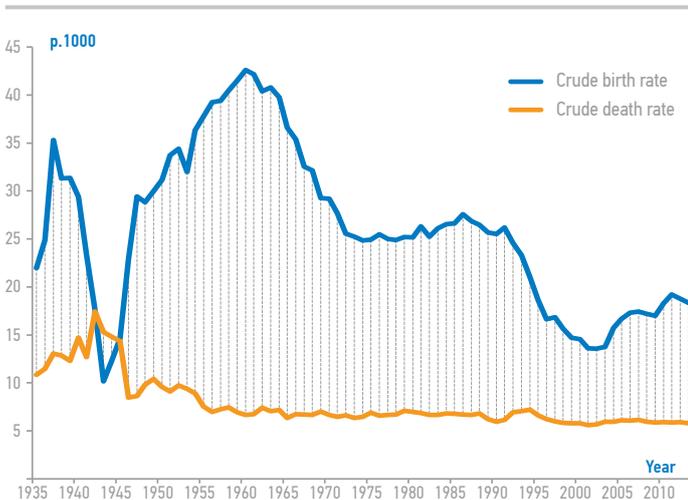


Figure 10

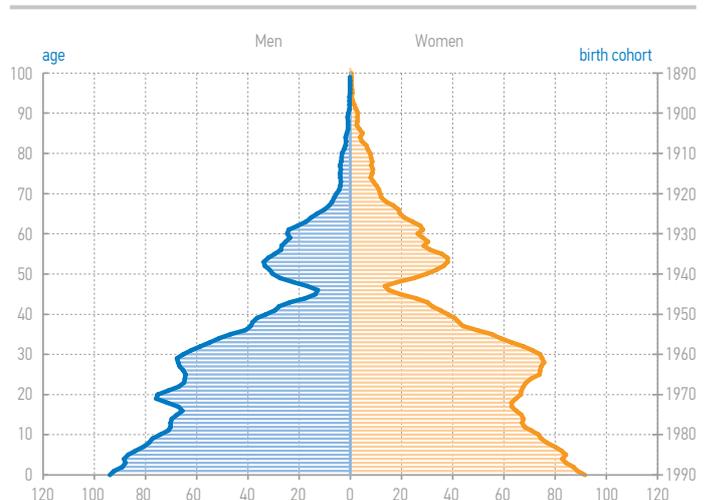


Figure 11

with the declining fertility rate. Over the same period, the fertility rate reduced five times among women aged 35-39, two times among women aged 30-34, 1.5 times among women aged 25-29 and did not change among women aged 20-24. Women aged 30+, who already had the desired number of children, then faced the problem of how to prevent unwanted pregnancies.

By the end of the Soviet period Azerbaijan was a modern, secular, autonomous state integrated into the Soviet system, having a well-educated population with high literacy, a democratic tradition and legislation that guaranteed gender equality, provided for the protection of the rights and interests of children and parents, a state with a human resource base and developed education, healthcare and a pension system. In the late 1980s Azerbaijan, with its young population, high growth potential, low mortality and optimal fertility rates, was at the final stage of the demographic transition, and experiencing the early 'demographic dividend' period.

Collapse of the USSR and territorial integrity problems

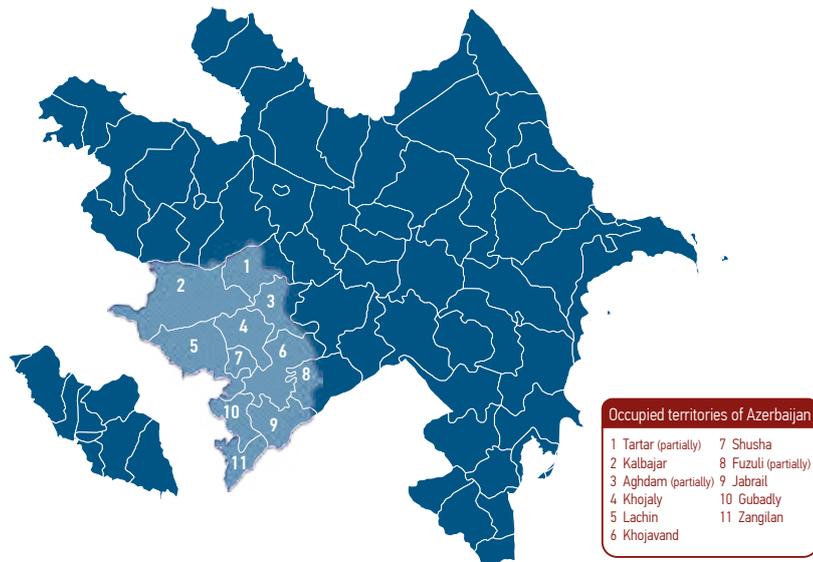
The 1980s systemic crisis faced by the USSR and the spill-over effect experienced by all socialist countries of Eastern and Central Europe, brought about the collapse of all political and economic systems and by the early 1990s had caused the disintegration of the Soviet Union and other federal states of East European. The collapse of the Soviet economic system and the deteriorating living conditions of the population in the Soviet Union fuelled separatist movements in the Soviet republics, and their populations blamed the Moscow-based central government and questioned its legitimacy. Potential conflicts of interests between various groups began to emerge in the social, political and economic spheres. In multi-ethnic regions these conflicts began as confrontation between ethnic groups and escalated to conflict and open clashes. Growing tension between Armenians and Azerbaijanis culminated in an open conflict in 1987-1988 causing casualties and a massive influx of refugees and internally displaced persons (IDP). Against this background, relations between the Republic's government and the central Soviet authorities became even more strained. An independence movement began and on 23 September 1989 under pressure from the opposition forces, the Constitutional Law "On the Sovereignty of the Azerbaijan SSR" was adopted, and in January 1990 Soviet troops entered Baku to suppress the opposition movement, which resulted in extensive casualties among the civilian population. This act led to a loss of legitimacy of Soviet power in the opinion of the Azerbaijani people making Azerbaijan's exit from the USSR irreversible. Following a chain of events, on 30 August 1991 the Supreme Council of the Azerbaijan's SSR passed the Declaration on the Restoration of the State Independence of the Azerbaijan

Republic and on 18 October the Constitutional Act "On State Independence of the Republic of Azerbaijan" was passed.

The fall of the USSR, the post-Soviet economic crisis, the introduction of national currencies and national financial and credit institutions all had serious implications for the social sphere in all newly independent states, including Azerbaijan. The period was characterised by galloping inflation and all financial transfers and monetary instruments of social policy depreciated and became ineffective. However, non-monetary instruments of social protection including maternity leave, sick leave, leave to care for sick children or other family members, medical aid, secondary education and pension entitlements by age, remained in effect. In addition, Azerbaijan had inherited a developed social infrastructure and well-established healthcare, education and pension system. Ensuring these systems functioned normally and maintaining the social infrastructure required large investments that could only be provided by economic growth. On 20 September 1994 the Government of Azerbaijan signed a landmark agreement to develop three major oil fields – Azeri, Chirag, Guneshli – in Azerbaijan's sector of the Caspian Sea, with the State Oil Company of Azerbaijan and lead international oil and gas companies: BP (UK), Amoco, Unocal, Exxon, McDermott and Pennzoil (USA), Lukoil (Russia), Statoil (Norway), TPAO (Turkey), Delta Nimir (Saudi Arabia) and Ramco (Scotland). Dubbed the 'contract of the century' the agreement was extremely important for the socio-economic stability of the country and became the driver for the growth of the national economy, attracting significant foreign investments and strengthening the position of Azerbaijan in the international arena.

Following the collapse of the USSR the military hostilities in Nagorno Karabakh escalated into a full-scale war resulting in the exodus of the Azerbaijani population from the Nagorno Karabakh Autonomous Region and surrounding territories. In 1991-1994 the successes and failures of the Karabakh war were among the key factors of the political instability in the young state. The fighting ended with the signing of a truce agreement in May 1994 that introduced a cease-fire and kept the status quo in relation to the control of the region. Thus, Azerbaijan Government de facto lost control over a significant part of its national territory that fell out of its jurisdiction although this was never recognized de-jure by the international community (Map 1).

Since the signing of the truce the displaced Azerbaijani population was not able to return to their homes as the Government of Azerbaijan could not provide protection or guarantee security. Thus, Azerbaijan faced the formidable challenge of having to deal with a large number of refugees and IDPs.



Map 1

Map 1
Occupied territories of Azerbaijan (since the truce agreement of 12 May 1994)

³⁶ On 20 June 2013, Chairman of the State Committee for Refugees and IDPs Ali Hasanov said that there are 1.2 million of refugees and IDPs in Azerbaijan. He explained that in 1992-1993 Azerbaijan had 1 million of refugees and IDPs but over the past 20 years their number increased to 1.2 million due to the annual natural increase of 1% on average. See <http://www.1news.az/society/20130620045702036.html> Archived on 03/05/2015. In late May 2015, this information appeared as a rolling title on the official website of the State Committee of the Republic of Azerbaijan on Refugees and IDPs <http://www.refugees-idps-committee.gov.az/> «Azərbaycanda 1.200.000-dək qaçqın və məcburi köçkün vardır.» (Archived on 26 May 2015)

³⁷ This change in the number implies annual average increase of less than 0.5% for over 13 years of the 21 century and can be accounted for the natural increase as children inherit the IDP status from their parents. At the same time, UNHCR provides data on the number of refugees and IDPs that benefited from their protection and aid programmes and does not claim to possess full information on the actual number of forced migrants within countries.

³⁸ See Results of the population census of the Nagorno Karabakh Republic, 2005, section 5 "Ethnic composition of the permanent population" (the census was carried out from 18 to 27 October 2005) <http://census.stat-nkr.am/>

Today the estimated number of IDPs provided by different sources varies from 700,000 to 1.2 million people, representing 7% to 12% of the total population of Azerbaijan.³⁶ The most reliable source is likely to be the database of the UN High Commission for Refugees citing 575,500 IDPs in 2000, which had increased to 609,000 by 2013.³⁷

Whatever the exact figures are, hundreds of thousands of people became hostage to the political situation and have remained internally displaced for over 20 years, passing the IDP status to their children and possibly even grandchildren. As the return of IDPs to their homeland is one of the key conditions put forward by the Government of Azerbaijan for the Nagorno Karabakh conflict resolution, it is not in their interest to promote the assimilation of this population into their resettlement areas, as they would lose IDP status.

IDPs live in refugee camps, settlements and dormitories located along the eastern border of the territory controlled by the Armenian armed forces, as well as along the line connecting Sheki and Ismailly and along the railway running from Fizuli to the Caspian coast. In addition, large numbers of refugees are concentrated in Baku, Sumgayit and around Mingechevir. The Government of Azerbaijan denies the existence of the self-proclaimed Nagorno Karabakh Republic but continues to include all uncontrolled territories in the administrative division and population statistics as if they were under the full control and jurisdiction of the Republic of Azerbaijan. Thus, despite a large number of IDPs and refugees spread across Azerbaijan's territory to the east from the uncontrolled zone, the official statistics of Azerbaijan shows an increase of the population in that zone from 780,000 to 835,000 people between the 1999 and 2009 censuses. At the same time, the population census conducted by the statistical

agency of the self-proclaimed Nagorno Karabakh Republic in 2005 counted only 135,000 residents, of which over 99% were Armenian.³⁸ The difference in the population estimates between the two statistical entities nearly equals the United Nations High Commissioner for Refugees (UNHCR) data on the number of IDPs in Azerbaijan. Thus, it is very likely that in reality the movement of the virtual population in the zone controlled by the Armenian armed forces reflects the demography of the internally displaced population.

Paradoxically, the dramatic events that concluded the Soviet era in Azerbaijan's history and the painful early years of independence did not seriously affect the population dynamics of the country. The migration-related decrease in the population, peaking in 1998-1991, began to subside and by 1999 was replaced by a migration increase that had not been observed in Azerbaijan since the mid-1960s. 1996 marked a decrease in infant mortality and an increase in life expectancy that lost a year between 1990 and 1995. From 1995 the economic and social spheres, as well as population reproduction entered a period of revival that ended in the late 1990s to early 2000s. Thereafter the dynamics of demographic processes returned to the trends of the past, the details of which will be analysed in the main body of the report.



1

POPULATION GROWTH AND STRUCTURE IN AZERBAIJAN

1.1. Dynamics of the population size and factors of the population growth in Azerbaijan

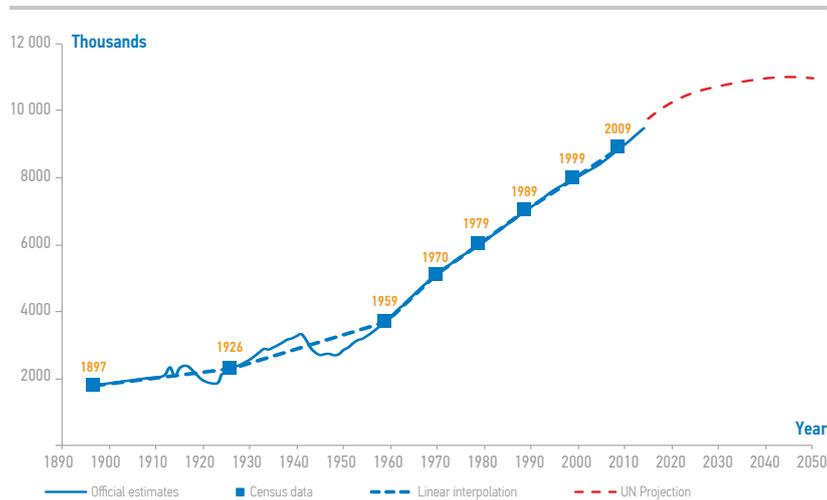


Figure 1.1

Figure 1.1
Growth of the population of Azerbaijan, source: population censuses and estimates made between the censuses; projections till 2050, source: medium scenario of the UN population projections, 2015

Azerbaijan is the most dynamic nation in the South Caucasus in terms of demographic development. During the 20th century the population grew by over 6 million, a more than four-fold increase. Nearly 70% of the increase occurred between 1959 and 1999 when the population grew by over 900 thousands each decade. This population growth has continued in the 21st century (Figure 1.1) with a nearly 1.5 million increase since 2000. In early 2015, the State Statistics Committee estimated the population of Azerbaijan reached 9.6 million people.

Azerbaijan is currently the most populous state in the South Caucasus with a population twice that of Georgia and three times that of Armenia. According to the medium scenario of the UN population projections¹, the population of Azerbaijan will reach 11 million by 2045 whereas the population of Georgia and Armenia will decline to 3.6 and 2.8 million people, respectively.

1.1.1. Population Growth Rates in Azerbaijan

One of the most important characteristics features of Azerbaijan's demographic situation is the relative rate of increase of the population number that depends on the fertility and mortality rates, balance of the external migration and the peculiarities of the population structure by sex and age. To measure the pace of population increase demographers use what is known as the "crude growth rate" which represents the ratio of the absolute change in the population size to the number of person-

years lived by that population over a given period of time. Thus, the indicator is always associated with a specific year, i.e. represents an average annual population growth rate for the period under investigation. The crude growth rate can also be calculated as the sum of both natural and migration increases, the former one being the sum of crude birth and death rates and the latter one being the ratio of the net external migration to the number of person-years lived by the population over a given period.

Although most of the catastrophic historical events can cause substantial fluctuations in the crude growth rate, the mean value over the long term will remain relatively stable. This is because the period of sharp decline in the population growth rate caused by the event tends to be followed by a period of increased compensatory growth, and the indicators therefore balance each other out. Additionally, the crude growth rate and the natural growth rate are subject to fluctuations that are determined by the dependency of the value of these indicators on the crude fertility rate.² Thus, because the crude growth rate, crude fertility rate and crude death rate fluctuate periodically and non-periodically, fluctuations are also found with the associated indicators. Realistic projections of the level and long-term trends in the crude growth rate and its components should therefore be based on data covering a long time span.

During the 20th century the average annual population increase rate in Azerbaijan was about 1.5%. Though, this average dissimulates the two different periods of the demographic and social history of the country. In the first half of the 20th century the population dynamics in Azerbaijan were uneven; periods of demographic depression caused by two World Wars, by political cataclysms and local hostilities were alternated by the periods of relatively rapid population growth. Nonetheless, the total demographic balance of Azerbaijan in the first half of the 20th century was positive, and its population grew by 0.85% on average per year. As a result, between 1900 and 1950 the population increased from 1.8 to 2.8 million people and by the middle of the 20th century Azerbaijan lagged behind Georgia with its population of 3.5 million people but is ahead of Armenia with a population of about 1.4 million people.

In the second half of the 20th century the population growth rate remained high, began to stabilize, and reached an historic peak of around 4% per year in the early 1960s and between 1950 and 1975 population had doubled. However, by the 1970s the pace of the

¹ SOURCE: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, DVD Edition. File POP/1-1: Total population (both sexes combined) by major area, region and country, annually for 1950-2100 (thousands). <http://esa.un.org/unpd/wpp/>

² In demographics, the feature of amortization, similar to the function of a mechanical shock-absorber in a car, is expressed when a sharp rise of the crude birthrate is followed by a period of decline in birthrate because the population in the denominator of the formula is increasing at the expense of the newborns who will not reach the fertile age soon, and also because women do not give birth every year etc. Thanks to this cushioning/shock-absorption feature the dynamics of the majority of demographic indicators has a wave-like nature.

population growth rate had slowed down and by the beginning of the 21st century the crude growth rate had fallen to 0.9% per year. (Figure 1.2)

Yet another acceleration of the population growth in Azerbaijan has been observed since 2003 reaching 1.3 percent in the period between 2006 and 2013. Such rapid population growth that warrants doubling of the population in 50 years can be stable in the long term only in exceptional conditions of the demographic transition (historical decline of mortality followed by decline in fertility) or as a consequence of the large inflow of migrants. As both these conditions are missing in Azerbaijan one can expect that the average annual population growth rate in Azerbaijan would slow down. According to the medium scenario of the UN population projection, it should decline to 0.1 percent per year that will lead to the stabilization of the population numbers, other things being equal.

Notwithstanding the declining growth rate, the absolute annual increase of the population of Azerbaijan will remain stable (the so-called ‘mass effect’), though less considerable than at the end of the 20th century. Nevertheless, in the next three decades Azerbaijan’s population is projected to grow by over half a million people per decade. It is expected that during the 21st century the population of Azerbaijan is likely to increase by over 3 million people and 70% of the growth will occur in the first half of the century. So, Azerbaijan will certainly retain its position of the demographic leader in the South Caucasus throughout the century.

1.1.2. Components of the population growth in Azerbaijan

Two factors affect changes in population size. The first is natural population increase (the difference between the number of births and deaths registered over a certain time period, usually a calendar year). The second is net migration (the difference between the inflow and outflow of migrants over a certain timeframe).

Natural population increase estimate is usually based on data collected by statistical agencies from births and deaths registries. The civic status acts registries³ present monthly reports on the number of registered births, marriages and deaths to the State Statistics Committee of the Republic of Azerbaijan. The Committee is responsible for the aggregation and further statistical processing of data. Azerbaijan has all necessary legislative frameworks and technical capacities for the comprehensive and timely registration of the civil status acts, which is used to provide information on the natural movement of the urban and rural population of Azerbaijan at the national and regional levels.

The most precise estimates of net migration can be obtained only from the data of the two population



Figure 1.2

censuses by calculating the difference between the crude population growth and natural population increase. Other sources of information on migration flows, such as the number of work/residence permits issued, the number of people who have legally crossed the border, do not provide an adequate picture of the migration flows of the population. The present analysis looks at migration exclusively from the point of view of its contribution to the change in the population size. Therefore, quantitatively migration is estimated using a net migration indicator representing the difference between the change in the population size between two dates and the natural increase.⁴ The estimates of the net migration value are based exclusively on data published by the State Statistics Committee of the Republic of Azerbaijan.

After World War II the only factor contributing to the increase in the size of Azerbaijan’s population was natural growth (Figure 1.3). Until the beginning of the 21st century net migration was negative but until the late 1970s its magnitude was far less than that of natural growth. Although in the 1980s-1990s negative net migration has increased, it is still three times less than the amount of natural growth.

Figure 1.2
Crude population growth rate in Azerbaijan from 1925 to 2014 (per 1000 population)

Figure 1.3
Components of the change in the population size and the crude growth rate of Azerbaijan’s population, 1936-2014

³ <http://www.justice.gov.az/eng/cat.php?cat=0401>

⁴ It should be noted that the net migration value does not say much about the migration mobility of the population if the so-called gross migration representing the sum of the number of persons leaving and arriving to the population, is not taken into consideration. It is evident that zero net migration can occur in two cases: when the migration mobility of the population is totally absent, or when the population has fully replaced during the period under examination.

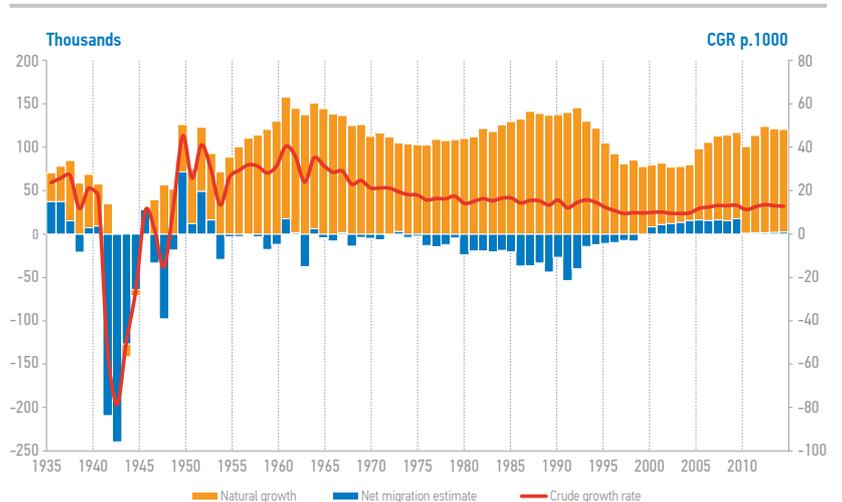


Figure 1.3

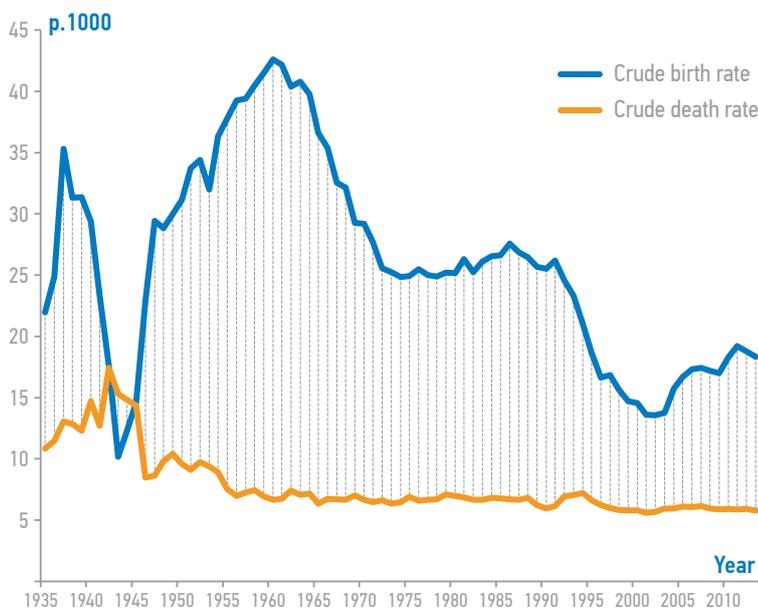


Figure 1.4

Figure 1.4
Demographic transition: crude fertility and mortality rates in Azerbaijan, 1950 – 2013

Figure 1.5
Absolute population growth in Azerbaijan by years (left) and by 5-year intervals (right) in 1990-2011.

From the 1990s negative net migration began to decline and since the beginning of the 21st c net migration became positive, so that between 2000-2008 it provided the population of Azerbaijan with about 140 thousands. This growth of positive net migration began to ease and by 2009 net migration had decreased to about 1,000 people, so the contribution of the migration component in the overall population growth remained low, equating to less than 2% of the total population growth. Thus, throughout the past 60 years migration has not played a significant role in the population increase in Azerbaijan.

The relatively stable natural growth rate of the population of Azerbaijan during the second half of the twentieth century was the result of a rapid declining mortality and increasing birthrate – a demographic transition⁵ (Figure 1.4). In the mid-30s, mortality rates fell due to improved sanitary conditions, literacy rates, the development of obstetric and child-care institutions, immunization and the introduction of antibiotics in medical practice. By the end of the 1940s the crude death rate in Azerbaijan

had fallen below 15 deaths per 1,000 per year, and from 1945 to 1960 had halved. Because of the very young age structure of population this low level of crude death rate persisted even in the 1970s, when life expectancy was decreasing. The increase in life expectancy in the 1980s was an additional factor contributing to a very low crude death rate. By the early 1990s, mortality rates had stabilized at 6-7 deaths per 1,000.

While the mortality in Azerbaijan was decreasing between 1930 and 1960, the birthrate was increasing, and this was particularly evident in the 1950s when Azerbaijan experienced a ‘baby-boom’ following the Second World War. One of the reasons behind the rise in the number of births was an increase in the number of women of childbearing age accompanied by the sizeable generation born in the second half of the 1930s.

As a result, by 1960 the crude birth rate had reached a peak of 42 births per 1,000 persons. In theory, such an extremely high level corresponds to the so-called ‘natural fertility regime’ when virtually all women marry at early age, do not resort to induced abortion and do not use any means of contraception. This pattern of reproductive behaviour appears to have continued in Azerbaijan until the late 1950s. The fertility was particularly high among the rural population with an average of seven births per woman by the end of reproductive age.

In the 1960s the fertility began to decrease but the population size continued to increase rapidly, by 2% per year on average. As a result, the population of Azerbaijan doubled between 1960 and 1995; the main reason for this being natural growth. In the 1970s – 1980s the absolute natural population growth increased again driven by structural factors, but the crude population growth declined as migration outflow progressively increased from the early 1970s until the late 1990s.

Following independence, Azerbaijani population continued to grow at a high rate, increasing from 7.132 million in 1990 to 9.477 million by 2014 (33%).

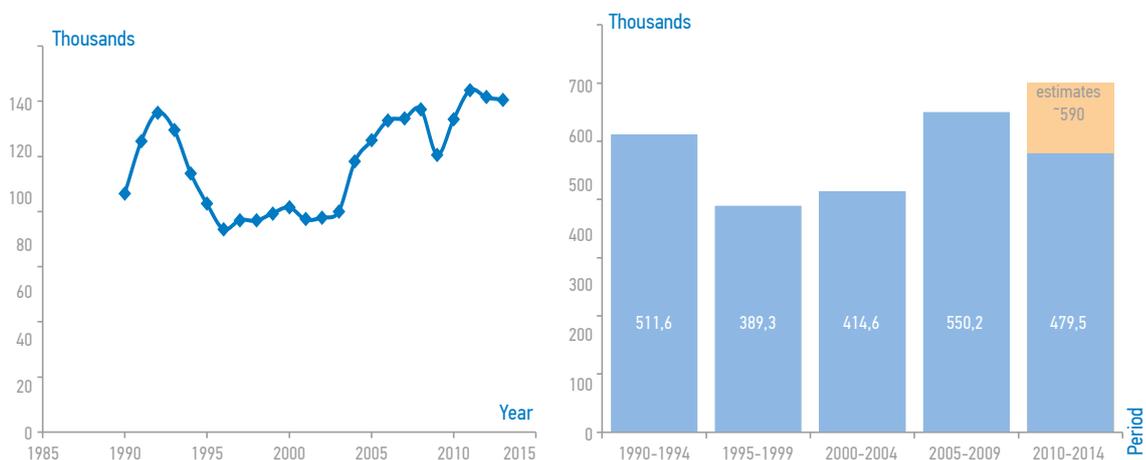


Figure 1.5

⁵ Demographic transition (DT) refers to the transition from high birth and death rates to low birth and death rates as a country develops from a pre-industrial to an industrialized economic system.

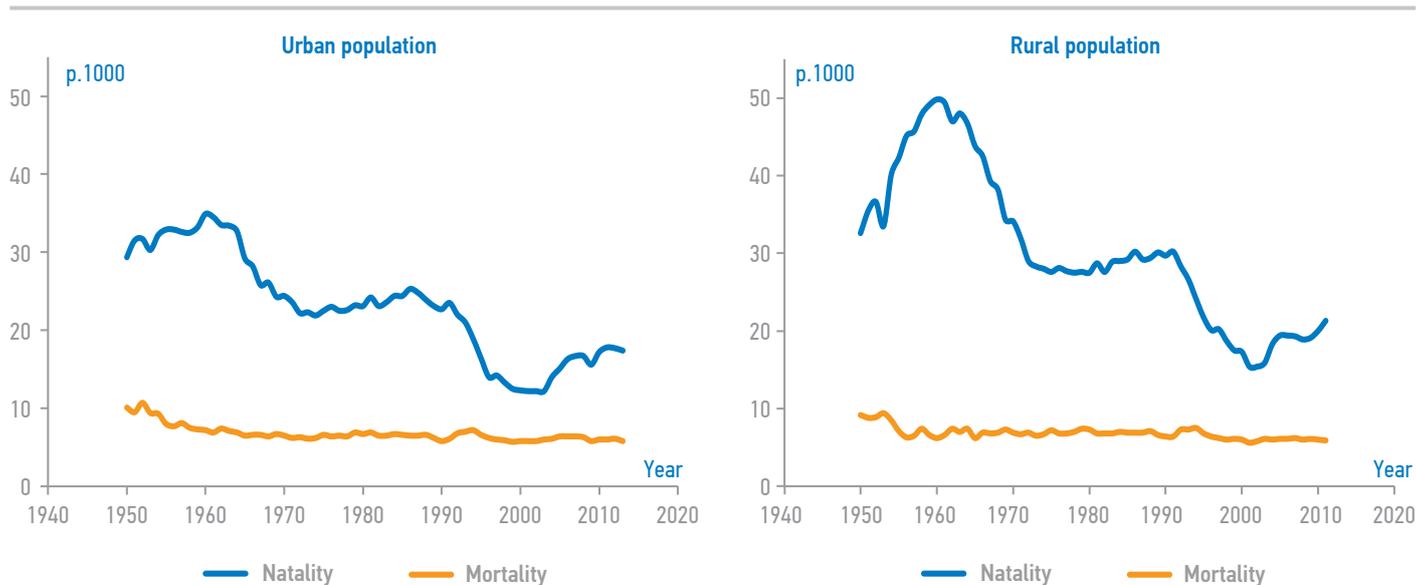


Figure 1.6

1.1.3. Dynamics of the urban and rural population size

The demographic transition in Azerbaijan was happening almost concurrently in the urban and rural populations, with only difference being that the fertility of the rural population remained higher than in urban areas. (Figure 1.6)

During demographic transition the natural increase of the rural population was much higher than the urban population (Figure 1.7). In the 1960s and 1990s the rate of natural increase for the rural population was 1.7 times higher than for the urban population. Although since 2000 this difference has begun to narrow, the pace of the natural increase of the rural population continues to be higher (by 1.2 times). Nonetheless, the urban population continues to grow at the same or at an even higher extent as the rural population due to the steady migration from rural areas. As a result, over the past two

decades the urban and rural populations of Azerbaijan have remained relatively equal. (Figure 1.8)

Throughout the second half of the 20th century, Azerbaijan's urban population increase was attributable to natural population growth, being responsible for 66% of the growth rate in the 1950s and 70% of the crude increase between 1960-1970. During the 1990s, this growth compensated for the considerable outmigration from cities taking place during that time. Migration resumed its role as an important contributor between 1999 and 2008, and the urban population increased by over 330,000 (8%), after which a smaller increase of 3,500 people (2009-2013) and a higher increase of 20,000 (2012 and 2013) occurred (Figure 1.9).

Figure 1.6
Demographic transition in urban and rural area of Azerbaijan

Figure 1.7
Ratio of the level of natural increase for urban and rural population of Azerbaijan (urban = 1)

Figure 1.8
Growth dynamics of the urban and rural population in Azerbaijan, 1950 – 2013

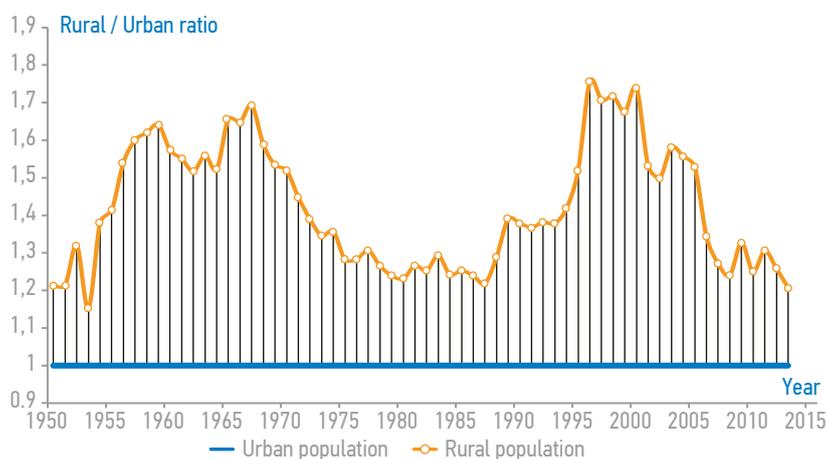


Figure 1.7

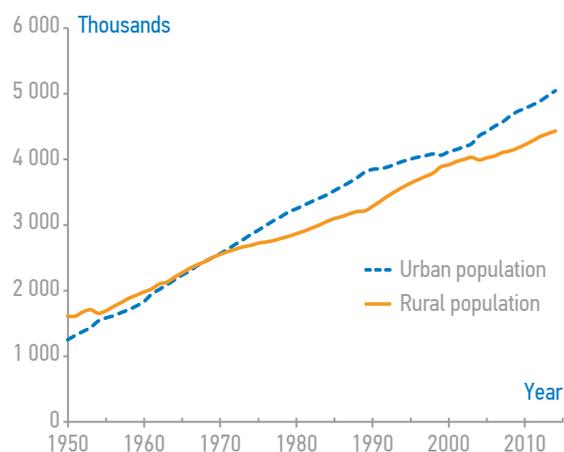


Figure 1.8

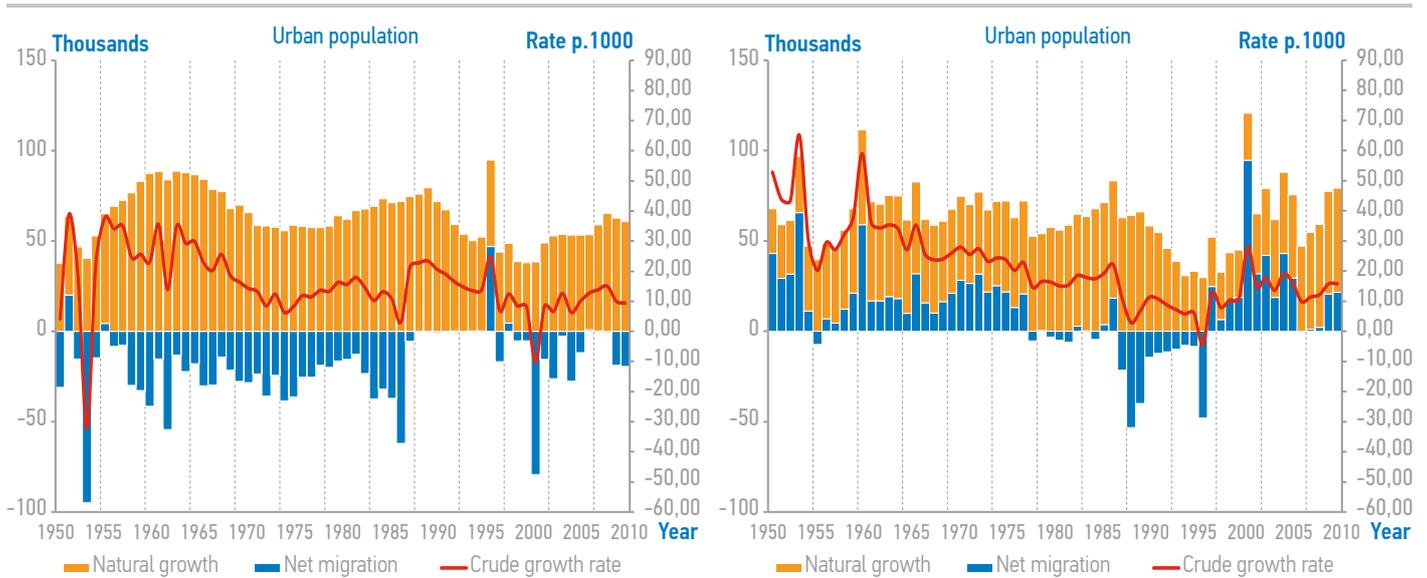


Figure 1.9

Figure 1.9
Level (crude rate per 1,000 population) and components of the increase for urban and rural population of Azerbaijan from 1950 to 2014

Figure 1.10
Components of the urban and rural population increase in Azerbaijan in 1950 -2009 by decades (as percentage of the crude growth)

Population growth in rural areas can be attributed exclusively to natural growth, which more than compensated for the ever-growing outmigration of the rural population between the 1950s and 1980s. Although in the 1950s the rural population decreased by nearly 210,000 people, during the 1960s-1980s the number varied between 260,000 and 280,000. This natural increase is mainly due to the high fertility level and relatively young population structure in rural areas. Between 1990-2011 the ratio of births to deaths was 3:1 and should have increased the rural population to 1.2 million, though population outflow reduced this to 1.06 million.

The outmigration from rural areas that occurred during the last 60 years is rather significant⁶. Although the direction of migration flow is difficult to determine,

it can be assumed that most of the rural population migrated to the cities. Migration was responsible for 30-40% of the urban population increase in the 1950s and 1970s (Figure 1.10)⁷ and during the first decade of the 21st century the cities of Azerbaijan again became attractive to the population increasing the contribution of migration to the urban population to 45%. Therefore, a high natural increase in the rural population was and continues to be the key determinant of both rural and urban population growth.

Since 1990 the rural population of Azerbaijan has increased by 1.06 million, (32%) and the urban population by 1.04 million (27%). Although between 1990-2000 the absolute increase of the rural population was twice that of the urban population, in the 21st century the trend has begun to change and the urban

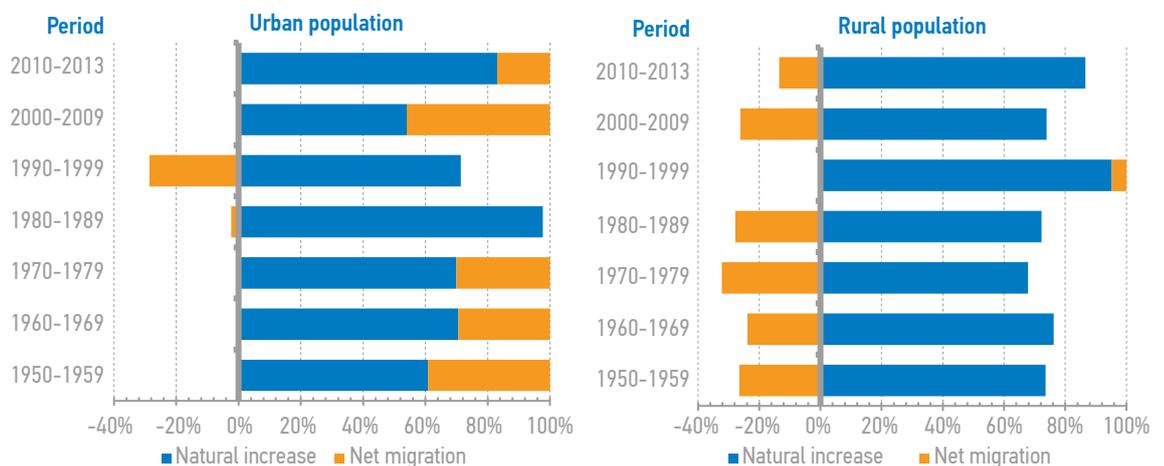


Figure 1.10

⁶ The exception is the last decade of the 20th century when the migration outflow from the rural areas was low and in certain years the net migration of the rural population was even positive.

⁷ In the 1980s-1990s the net migration of the urban population turned negative following the crisis and the collapse of the Soviet Union.

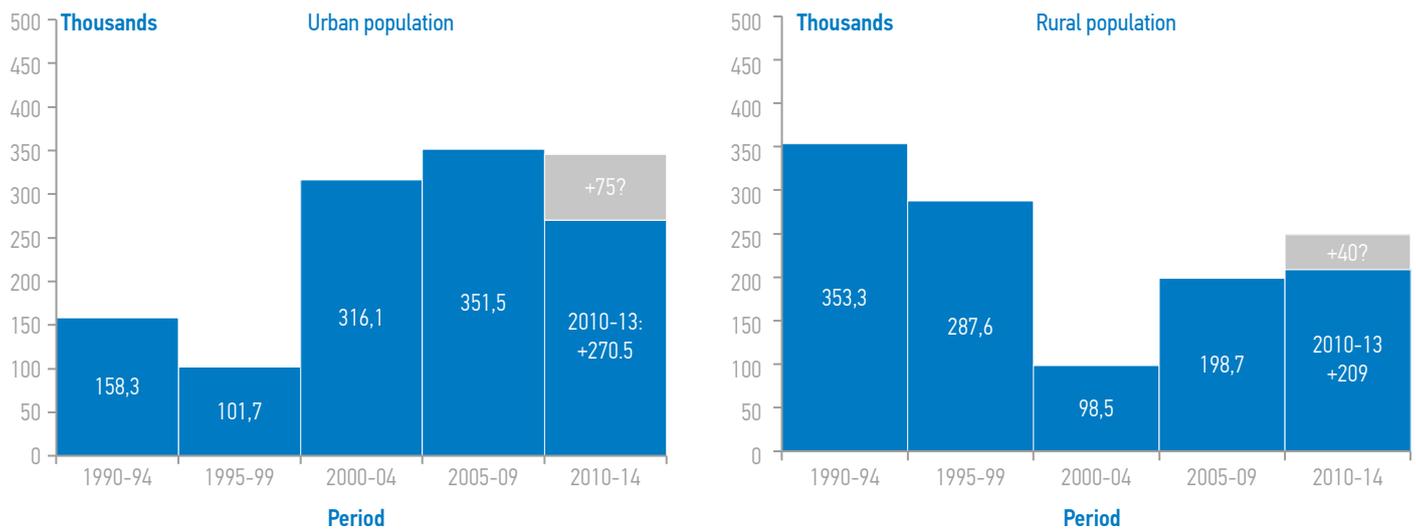


Figure 1.11

population is now growing at a higher rate than the rural population (Figure 1.11).

Even though urban population growth is now outpacing rural growth, the level of urbanisation in Azerbaijan remains relatively low. In 1950 only 44% of the total population lived in urban areas and by 1969, the proportions of those living in urban and rural areas were more or less equal. International trends have shown that having reached this critical point the growth of an urban population tends to accelerate while the rural population declines. However, in Azerbaijan between 1989 and 1999 different urbanization trends emerged, as the share of the urban population decreased and the ratio of urban and rural population regressed to the levels of the mid-1970s (Figure 1.12).

The sluggish pace and even regression of urbanisation in the early 21st century is a common phenomenon for all countries of Transcaucasia and may well have been caused by the hardship of economic transition, insufficient supply of employment opportunities in cities or by the mismatch between the professional skills of the rural population and labour market demand. The trend towards the increase in the share of the urban population is now getting back on track, albeit it at a very slow pace; between 2004-2014 the share of the urban population only increased from 52-53%, which is 1% lower than the 1989 level.

Figure 1.11
Absolute increase in the urban and rural population of Azerbaijan from 1990 to 2014, by 5-year intervals

Figure 1.12
Dynamics of the proportions of the urban and rural population of Azerbaijan in 1950 – 2014 by decades (as percentage of the total population number)

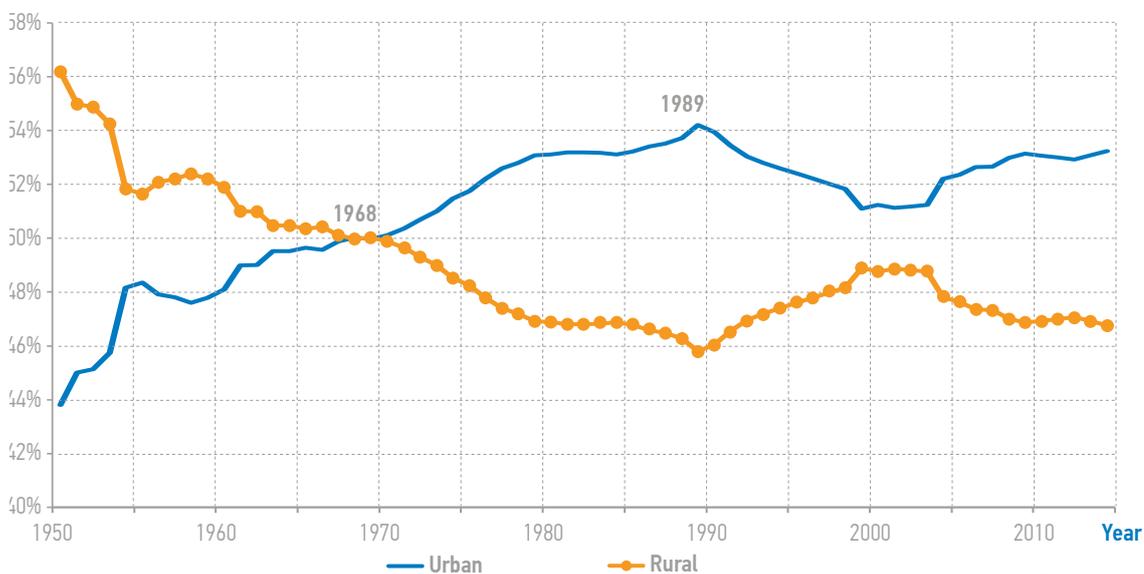


Figure 1.12

1.2. Peculiarities of the dynamics and age structure

1.2.1. Methodological notes

The dynamics and the peculiarities of economic and social development in any country largely depend on the characteristics of the age structure of the population. The proportion of children, youth and people of retirement age are key determinants of the structure of social expenditure on public health, education and pensions. The balance of inter-generational solidarity⁸ is largely dependent on the quantitative ratio between the working age population and the 'dependent' age population. Finally, the working age structure of the population is an important factor determining the state of the labour market.

Socio-economic problems inevitably arise from the evolution of the age structure of a population. It is impossible to stop the ageing of a population that is shaped by century-old fertility and mortality trends, or to avoid the high numbers in generations born in years with high fertility. It is, however, possible to speculate and to effect appropriate economic and social measures in a timely fashion in order to mitigate undesirable consequences.

The implications of age structure on the socio-economic situation are not unambiguous. A phenomenon of the same nature can have both positive and negative implications depending on the historical context. For example, the mass influx into the labour market of the 1940s and 1950s 'baby-boom generation' generated a wave of social unrest that from 1967-1968 swept from California to the Eastern European countries at a time of economic growth and virtually full employment of the "thirty glorious years". On the contrary, the mass influx of the labour force coming from the large generation born in the 1980s which flooded the Russian labour market during the economic transition in the late 20th – early 21st century, was welcomed as demand from the new sectors of employment such as high technologies and services was high.

Age structure is highly inert as it represents a footprint of the demographic and social history of the population over the previous century. Hence, the number of young in a population depends on the number of women of an age close to motherhood, i.e. on the size of the population born 25-30 years ago. The rise in the working-age population is defined by the ratio between the size of the generations born 20 years

ago (entry into the labour market) and 60 years ago (exit from the labour market). The number of people of retirement age is pre-determined by the size of the generations born over 60 years ago, and the mortality (and migration) patterns of the past 60 years.

The age structure of a modern population is firstly pre-determined by the evolution of the fertility and mortality regimes occurring during the demographic transition. In a simplified demographic theory, each stable reproduction regime that represents a unique combination of fertility (set of age-specific fertility rates) and mortality (mortality table) has a corresponding asymptomatic age and sex structure that is referred to as the "age structure of the population equivalent to stable". If the reproduction regime does not change or changes very slightly over a long period of time, then the age structure of the population converges with the structure of the stable equivalent. Thus, the age structure of the stable equivalent population is an ideal image of what the structure of the real population should look like in the absence of any non-demographic impact such as war, epidemics, mass migration, demographic policy, that disrupt the normal evolution of fertility and mortality. In order to estimate the scale and the implications of the disruptions caused by specific historical events, the structure of the real population and the stable equivalent should be compared.

Age structure not only significantly influences socio-economic development, but also affects the dynamics of population growth. Indeed, a population where there are fewer daughters than mothers can still grow for a rather long period of time if there are a high percentage of women close to the mean age of motherhood, as they are responsible for the annual number of births. This feature of the age structure of a population is expressed by the "population momentum," that shows the extent to which the population will increase or decline if it immediately switches to a stationary regime, i.e. to a fertility structure, which, with the existing mortality rate provides a basic replacement of generations (the number of daughters surviving to the age of motherhood equals the number of mothers).

During a demographic transition the evolution of the population age structure passes through three phases. The first phase is when a decrease in the mortality rate

⁸ Intergenerational solidarity is an integral part of many systems of modern welfare state (system) – most evident are the pension system, the health care system, education system and others. Therefore, the welfare state and solidarity at that level can also be understood as a form of social contract between generations.

⁹ Russian-language literature of the second half of the 20th century – early 21st century defines the term 'working age' as a range of ages from the minimum age at which a person is legally allowed to work to the age from which a person is eligible to receive a pension. The working age does not refer to the ability to work per se but to the legal aspects of participation in paid labour. This interpretation of the working age is applied with regard to the population, and here we speak about working age population. Earlier, Russian-language literature related to statistics and economics used the term working age (from 18-59 for men and 16-54 for women) along with young age (12-17 for men and 12-15 for women) and old age (60-69 for men and 55-64 for women) considered as 'partly working ages'. Apart from these ages, there was also a child age (under 7), school age (7 to 11), and very old (men at 70 and above and women at 65 and above). English and French language literature uses the notion of 'working age/âge de travail', and working age population in the demographic context. Working age population includes a segment of an economically active population that in internationally comparable statistics is defined as population participating in economic activities that are part of the national accounts system, receiving or not receiving salary, and the unemployed. In the national statistics accounts the economically active population can also include such categories as military servants, diplomats, students of higher educational institutions etc.

leads to an increase in the population growth rate and the age structure becomes younger (an increase in the population below working age – under 20), which leads to an increase in the ‘demographic burden’ on the working age population. The second phase, is when the fertility rate and growth rate slow down, the proportion of the working-age population increases and the dependency ratio per working-age person decreases (often referred to as the ‘demographic window’ or period of ‘demographic dividend’). The third, or ageing, phase is when the proportion of older people increases while the proportion of the working-age population and young people decreases. This phase lasts until the age structure of the population becomes stable, i.e. when it converges to the stable population structure that can maintain a constant reproduction regime.

1.2.2. Evolution of the age structure during the demographic transition in Azerbaijan

As noted earlier, the demographic transition in Azerbaijan was characterised by a rapid decline in the mortality level after World War II and very high fertility that continued until the mid-1960s. This gave rise to the rejuvenation of the age structure of Azerbaijan’s population that continued until the early 1970s and was accompanied by a rise in the ‘demographic burden’ on the working-age population⁹. By the end of this period, for every 100 persons aged 20-59 there were 135 persons aged below 20, and 20 persons aged 60 and above. Due to falling fertility rates during the second half of the 1960s, Azerbaijan entered the ‘demographic window’ phase, which began in the mid-1970s and has lasted to 2015. The proportion of the population aged 20 to 59 progressively increased and reached a peak of 62% in 2010-2013, while the total dependency ratio per 100 persons of working age decreased from 158 to 62, (2.5 times) (Figure 1.13)

It should be noted that when calculating dependency ratio in international statistics the minimum working age is set at 15 or 20 and the upper age limit at 60 or 65. Given the increase in the number of years spent in school and initial professional training undertaken (excluding professional on-the-job training), the average age for starting labour activity is probably closer to 20. In Azerbaijan the proportion of economically active people aged 15 to 19 is currently 15%, with this increasing to 50% for those aged 20 to 24 and 90% for those aged 35 to 49. Retirement age is normally clearly defined by the national labour code and can vary broadly. In Azerbaijan the retirement age is 63 for men and 60 for women (as of January 2015). Taking these ages as the upper limits for the working age the specific indicator of the dependency ratio for Azerbaijan can be calculated.

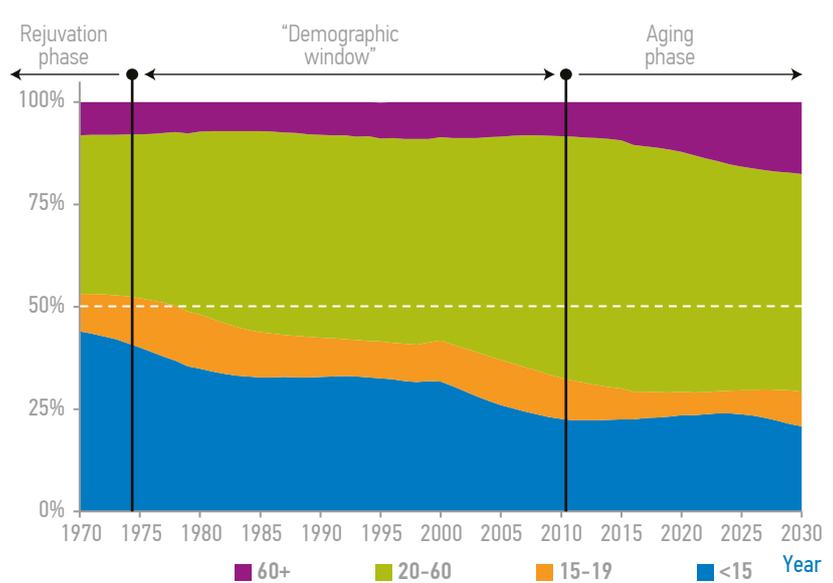


Figure 1.12

Figure 1.13 Phases of the evolution of Azerbaijani population age structure from 1970 to 2030 (State Statistics Committee data until 2015 and UN World population prospects, 2015 revision, DVD Edition, medium variant estimates since 2016)

The indicators of the dependency ratio for various working age limits have similar dynamics but different numeric values (Figure 1.14). Under the currently defined legal pension age the lowest dependency ratio will be in 2015 and thereafter will gradually increase with a ratio of 78/100 anticipated by the end of 2020s. By the middle of the 21st century the dependency ratio in Azerbaijan is expected to be lower than at the beginning of the century.

The relationship between the evolution of age structure and socio-economic development is broader than simply dependency. Substitution of generations at the labour market and the ageing population are two areas that require particular attention.

Figure 1.14 Historic dynamics and expected ‘dependency ratio’, or number of persons of non-working age per 100 persons of working age in Azerbaijan

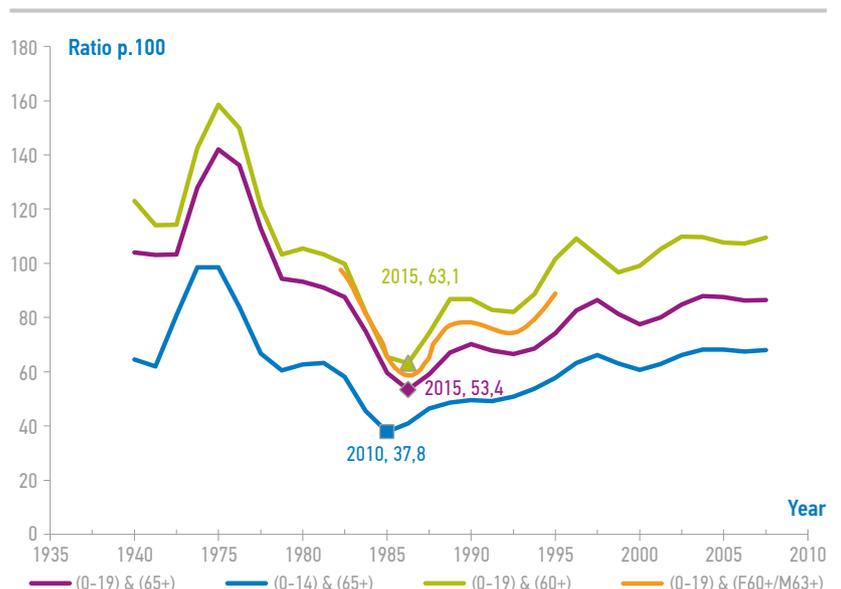


Figure 1.14

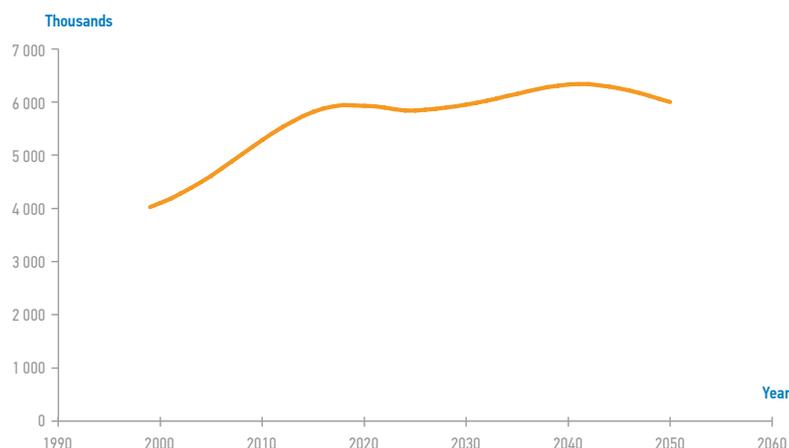


Figure 1.15

1.2.3. Population age structure and labour market replenishment

Figure 1.15
Dynamics of the working-age population

Figure 1.16
Ratio of the substitution of generations at the labour market

Azerbaijan's working age population has been growing rapidly over the past few decades (Figures 1.15). According to the UN medium variant projections¹⁰, this growth will continue until 2018, with the number of females aged 20-59 and males aged 20-63 expected to reach six million (an almost 68% increase). This age group grew rapidly from 2003 to 2013, with an annual increase of over 100,000 people. From 2018 to 2030 the working age population will stabilise at the level of 6 million, and despite an anticipated increase of around 400,000 by 2041, and it will return to the 6 million prediction by the middle of the 21st century.

¹⁰ United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website. (last consultation 8th of October 2015)

The change in the number of the working age population is driven by both the influx of young people reaching the age of 20 and by the number of retirees. The situation may be complicated if the Labour Code allows continued economic activity after retirement. In

any case, the substitution of generations at the labour market is closely linked to the ratio of individuals reaching working age (age 20) and individuals reaching pension benefit age. In Azerbaijan this indicator fluctuates (Figure 1.16); having risen rapidly until 2007 with 100 people reaching pensionable age versus over 530 persons reaching age 20, and then rapidly decreasing. This ratio is expected to balance out between 2019-2025, but will again show a ratio of 100/150 by 2035. However, from the middle of the 21st century the situation will change, and of every 100 people reaching pensionable age only 70 will have reached the age of 20.

Given that certain qualifications are required for specific jobs and the structure of employment by sectors, one person's retirement does not necessarily mean the creation of a job for a newcomer to the labour market. For this reason, although there is an insignificant change in the size of the working-age population and the level of the substitution of generation is close to one, there could be tension in the labour market if the volume (gross) of the generation substitution is high (many people leave and many enter the labour market). If young people entering the labour market at a certain age or having completed their education do not find employment that matches their expectations and qualifications, they join the ranks of the unemployed. Even if the labour force demand is equal to or exceeds the supply, young people entering the labour market need time to find a job that meets their qualification requirements and is suitable in terms of geographic location. For this reason, the unemployment level among young people is usually higher than the average total unemployment rate. In 2009 the proportion of unemployed among the economically active population aged 20-24 reached 16% (Figure 1.17), whereas the total unemployment

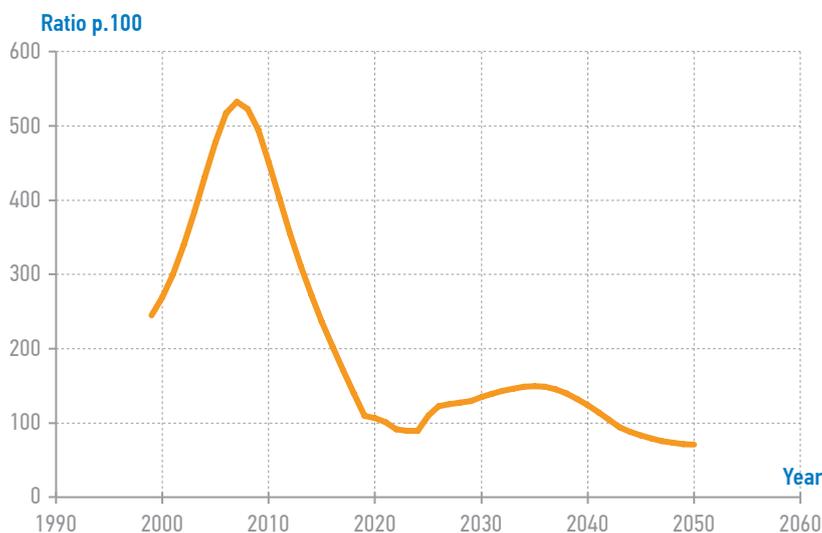


Figure 1.16



Figure 1.17



Figure 1.18

rate of the economically active population was 6%. It should also be noted that the unemployment rate among men under the age of 25 was lower (13.4%) than among women of the same age group (15.5%). Azerbaijan will experience a large increase in the labour force during the first half of the 21st century when the population group aged 18-20 enter the labour market. Azerbaijan's 18-20 population age group alternates every 10 years or so (Figure 1.18). The highest risk for youth unemployment took place between 2009-2011 when the number of 18-20 year olds was more than 550,000. This eventuality may occur again in the mid-2030s when this age group is again expected to number 500,000, despite the anticipated decrease in number to 330,000 in the early 2020s. Hence, the problem of youth employment in Azerbaijan will remain a development agenda priority in the decades to come, despite the stabilisation of the size of the working-age population.

growth rate remains positive each subsequent generation will become more numerous than the preceding one, and the population can even become 'younger'. Such a 'rejuvenation' of Azerbaijan's population took place between 1959 and 1970 when the median age of the population decreased from 22 to 18, and from 1970s onwards the median age has been progressively rising by about 4 months per year.

Although the median age has been steadily increasing for the past 40 years, the population of Azerbaijan has remained relatively young; according to the 2009 census, the median age was 30 years and half the population was under 29. Nevertheless, the demographic ageing process in Azerbaijan is accelerating, and by 2020 half the population will be aged 32 and above, by 2030 the median age will increase by 4.5 years, and by the middle of the 21st century half the population will be aged 40 and above.

Figure 1.17
Number of unemployed per 100 employed by age in 2009

Figure 1.18
Dynamics of the number of the population aged 18 to 20 in 2000-2050

Figure 1.19
Dynamics and prospects of the median age of the population of Azerbaijan, 1959-2050

1.2.4. Total (demographic) ageing of the population

In demographics, the ageing of a population is a common and inevitable trend that is shaped, first of all, by increasing life expectancy and, therefore by the increasing proportion of individuals that reach a certain age in each successive generation. Thus, the ageing of a population, when expressed as the increasing mean and median age of a population, can be viewed, to some extent, as an indicator of the age-old trend of the progressive development of humankind.

However, the mean age of the real population, which consists of multiple co-existing generations, does not increase necessary. Indeed, if mortality declines and the

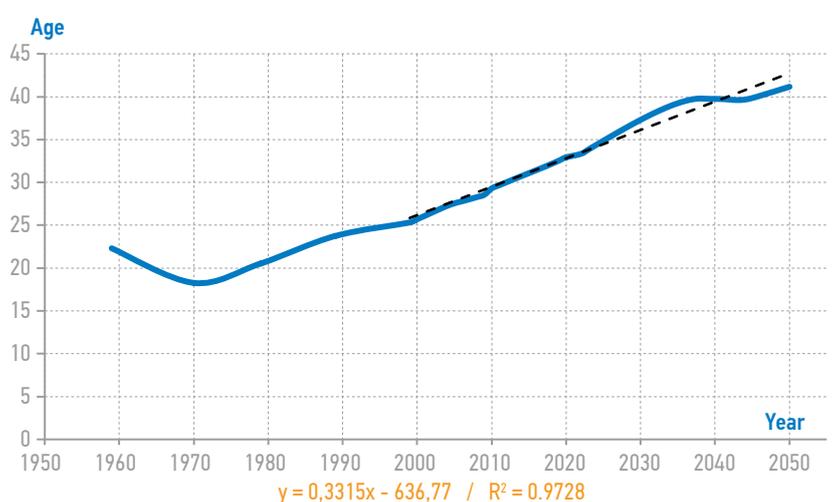


Figure 1.19

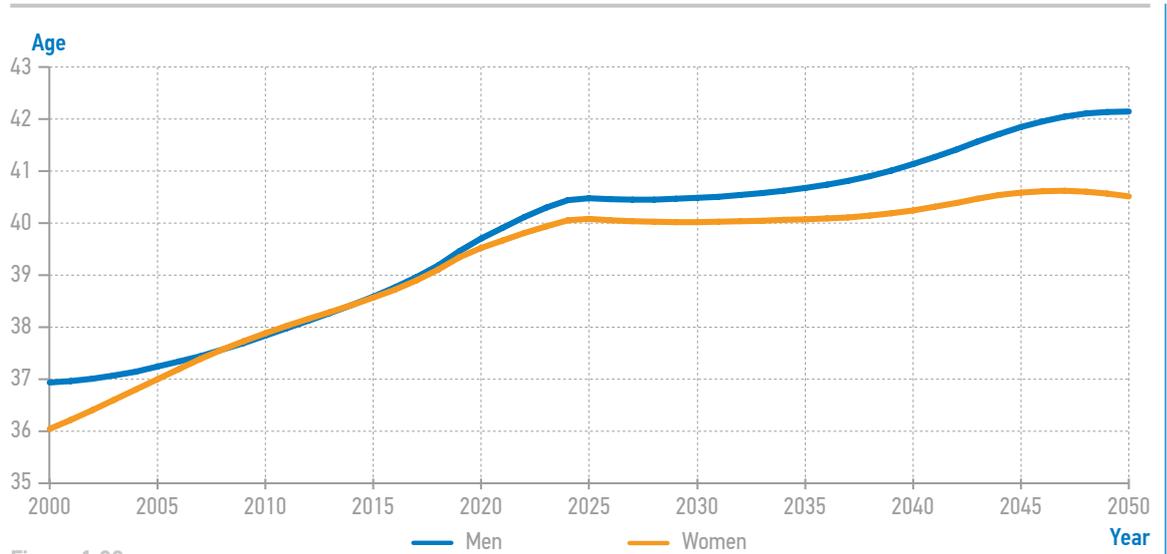


Figure 1.20

1.2.5. Ageing of the labour force

Figure 1.20
Dynamics and prospects of the average age of the working-age population in Azerbaijan, 2000-2050

Figure 1.21
Dynamics and prospects of the median age of the working-age population in Azerbaijan, 2000-2050

The ageing of a population affects all socio-demographic groups including the working-age population and in Azerbaijan the average working age increased from 36.5 years in 1999 to 38 years in 2011. This trend of rapid increase is expected to continue until 2025 when the mean age of working-age population will exceed 40 years, but thereafter it will slow down, increasing only to 41-42 years by the middle of the 21st century (Figure 1.20).

In terms of gender perspective, until 2025 the average working age of men and women will be the same, despite the different retirement age. Thereafter the working age for men will increase at a higher rate, but by the middle of the century the difference will not exceed three years, which is also the difference in the legal retirement age for men and women.

The ageing of the working-age population can have implications on the ratio between the younger and older generations in the labour market. From a demographic point of view, this ratio is considered absolutely balanced if the median age of the working-age population coincides with the mid-point of the interval between the age of entry into the labour market and the legal retirement age. Thus, the balance of generations within the labour force can be assessed by looking at the extent the median age deviates from the midpoint and its direction.

In a population where the working-age for women is 20-59 and for men is 20-62, then the balance of generations in the labour market will be reached at the point when the median age of the working-age population reaches 40 for women and 41.5 for men. Using this criteria, the balance of generations in the labour market favours younger people, and the labour force in Azerbaijan is and remains fairly young (Figure 1.21).

According to the 1959 census, the median age of women aged 20-60 was 31 years, whereas the median age of men in the same age group was 34 years (it is not possible to make calculations for the age range of 20-63 age range from currently available data). In 1970 the median age rose to 35 years for women and 36 years for men, and in 1989 dropped to 33 years for both sexes. From this point onwards the ageing of the working-age population has been steadily increasing.

The point of balance of generations in the labour market will be reached by 2020 for women and the mid 2030s for men. Although the early 2040s will be marked by a decrease in the median age of the working-age population for both sexes, followed by a resumed trend towards the further ageing of the labour force, in general the balance of generations in the labour market will be maintained for both men and women until the middle of the century.

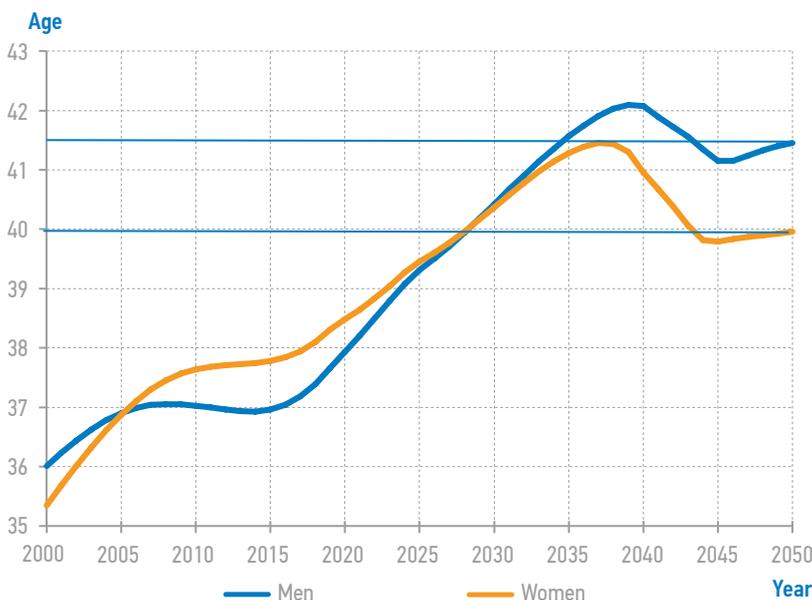


Figure 1.21

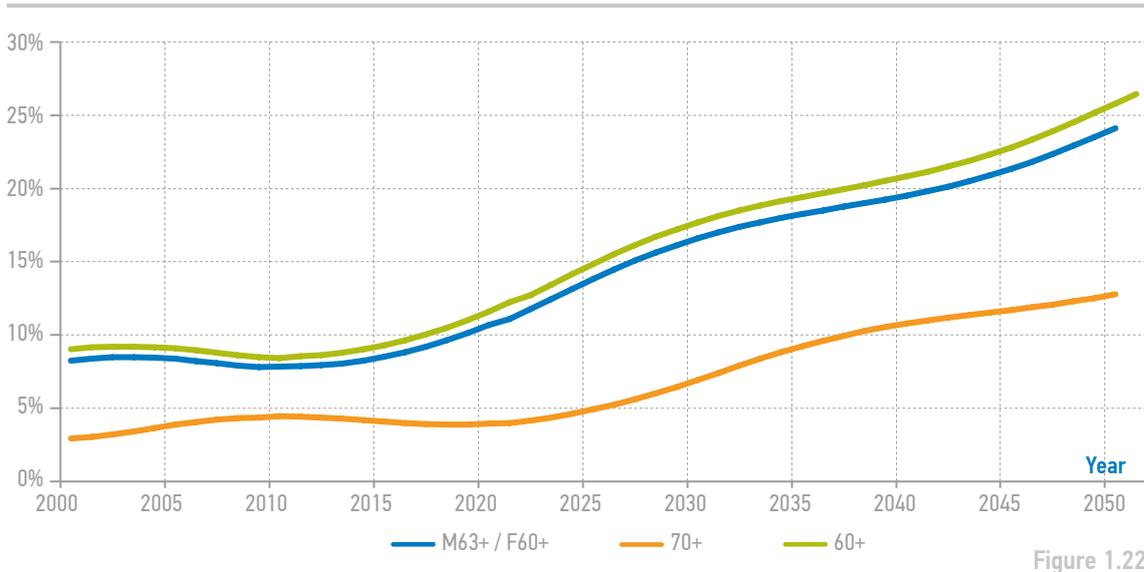


Figure 1.22

1.2.6. Dynamics of the population at the retirement and old ages

The problem of an ageing population in developing countries is often associated with an increase in the number of people reaching retirement age, usually 60 or 65. This view is well justified as the pension system is the most susceptible to the consequences of demographic ageing. However, an increased percentage of old-age people is not the only challenge posed by an ageing population; although it is a useful indicator for international comparison, its value does not indicate the implications of ageing on the pension system at the national level. For example, if an increase in the proportion of the old-age population is accompanied by a decline in their number, or by an increase in the proportion of the working population, it does not place an additional burden on the pension system. However, a rapid and significant increase in the number of the persons reaching retirement age can trigger a crisis for the pension system.

In Azerbaijan, between 1959 and 2009 the number of people aged 60 and above ranged from 8-9%. This proportion will remain stable until 2015 after which it will rapidly increase (Figure 1.22), reaching more than 12% by 2020, up to 18% by 2030 and accounting for 25% of the total population by 2050.

It is important to note that from 2025 Azerbaijan will face a progressive increase in the elderly population (aged 70 and above), a group that will require specific medical services and which will become increasingly dependent with age. From 2025 to 2037 this population group is expected to reach 10% of the total population, and will increase to 13% by 2050.

From 2013 onwards the biggest challenge facing the pension system will be the rapid increase in the number of people reaching retirement age (Figure 1.23).

Although relatively stable from 2000-2012 (650,000-700,000) by 2020 this population group will have exceeded one million, increasing to 1.5 million by 2027 and over the next 10 years the number is expected to exceed 2 million. Consequently, over the next 25 years the demographic pressure on the pension system and the infrastructure responsible for service delivery and the fulfillment of pensioners' rights, will triple.

Figure 1.22
Projection of the percentage of the old-age population in Azerbaijan in 2000-2050

Figure 1.23
Projection of the number of population in the legal retirement age in Azerbaijan in 2000 – 2050

Thousands

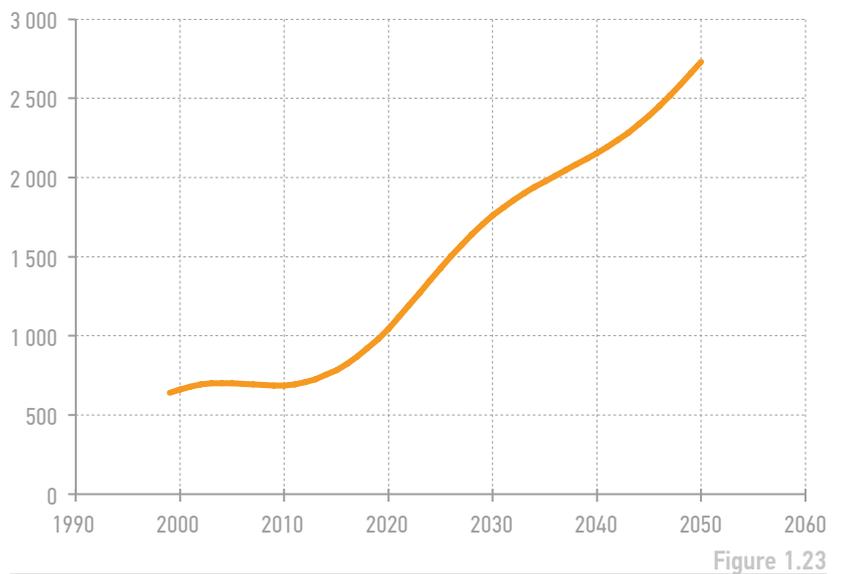


Figure 1.23

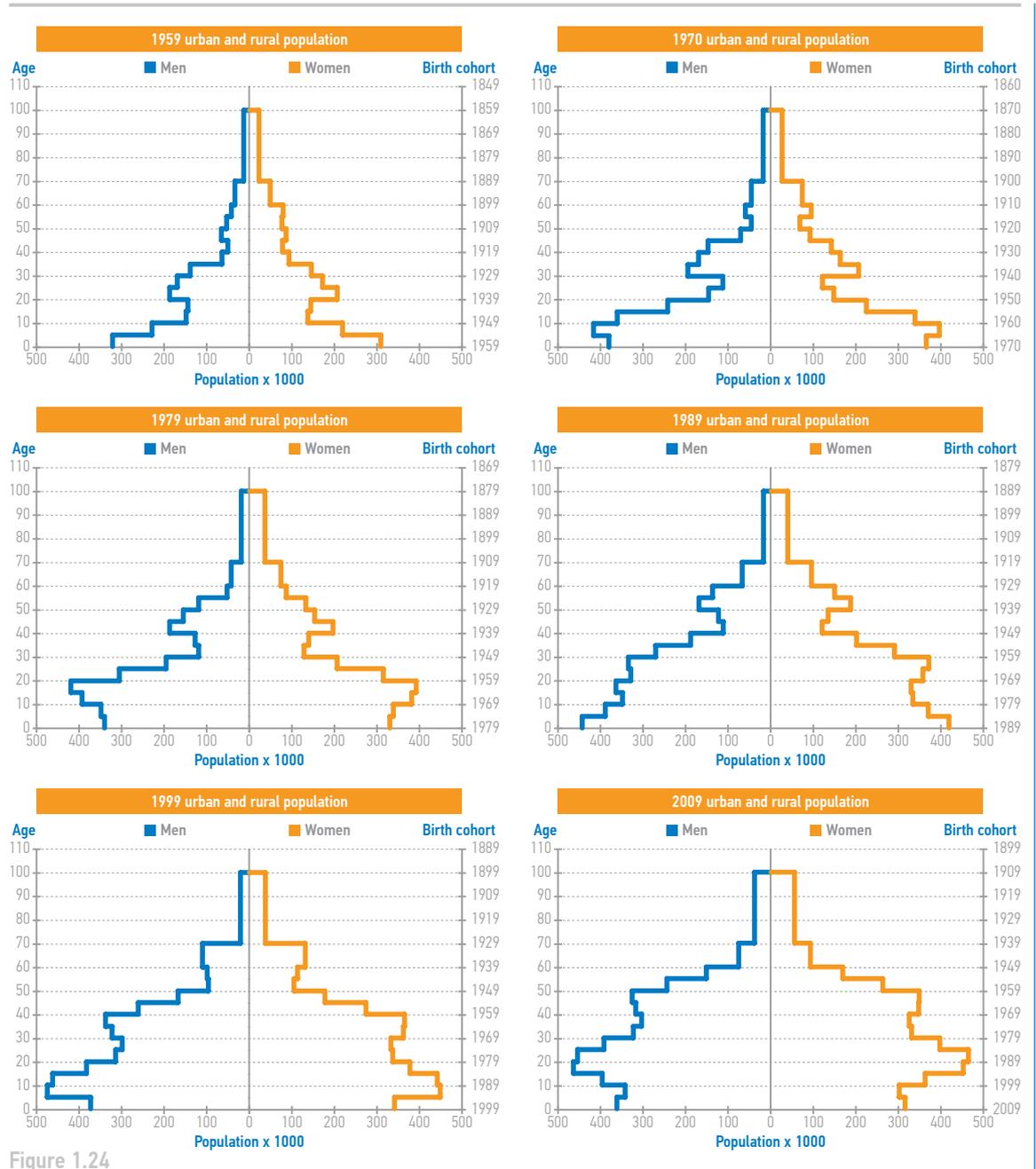


Figure 1.24

Figure 1.24
Evolution of the age structure of the population of Azerbaijan in 1959-2009 (according to population censuses)

1.2.7. Growth potential and demographic waves

Population census data shows that the age structure of the population of Azerbaijan has deep footprints left by social history (Figure 1.24). These footprints are particularly noticeable when the actual age structure is compared to the age structure that would have been shaped exclusively by age-specific mortality and fertility rates – “the structure of the stable equivalent population”. The stable equivalent population represents a state when the actual population converges to its stable equivalent because age-specific mortality and fertility rates remain

constant for a long period of time – “the period of stabilisation”.

If the population is stable its age structure becomes constant, regardless of whether the total population is growing, declining, or remaining constant, corresponding to the intrinsic growth rate (Lotka’s intrinsic rate of natural population growth). Thus, if a population is ageing during the stabilisation process, the moment it reaches a stable state, the ageing of the population stops. This stabilisation period may be short if the age structure of the actual population corresponds to its stable equivalent (known as ‘semi-stable populations’). Alternatively, it can be long if the age structure of the actual population differs from its

stable equivalent. The stabilisation period may also be extended if historic events occur which cause temporary changes in the fertility and mortality regimes, or if the age structure is affected by mass migration.

The population reproduction in Azerbaijan is currently defined by the life expectancy at birth of 71.2 years for men and 76.6 years for women, and a fertility rate of 2.26 births per woman. This corresponds to the intrinsic growth rate of about 0.3% and ensures the population will double in about 650 years. If this highly favourable regime remains unchanged or changes insignificantly, the population of Azerbaijan will become stable with about 34% of the population aged 20 and below, 48% aged 20 to 60, and 18% aged 60+. Thus the ratio of non-working age to working age (20-60 year-old) people will be 104:100. Should the working age be increased to 65 years, this ratio would decrease to 90:100.

During the past 10 years the rate of natural increase in Azerbaijani population was an average of 1.07% per year (3.5 times higher than the intrinsic rate corresponding to the level and structure of age-specific fertility and mortality rates). This is explained, firstly, by the fact that the mean age of the population is 31.2 years, (2.8 years less than the mean age of the stable equivalent population); and secondly, by the large difference between the age structures of the actual population and its stable equivalent. The latter is expressed, particularly, by the fact that the age structure of the population of Azerbaijan has generated a very strong 'demographic wave' that will shape the dynamics of all demographic indicators over the next 50-70 years.

Demographic wave are caused by a temporary decrease or increase in fertility rates caused by catastrophic events such as war, epidemics, etc., or resulting from various social policy incentives. If these different events overlap each other they multiply the demographic effects thereby generating a very strong demographic wave that can last for decades.

Azerbaijan's experienced a demographic wave following the First and Second World Wars, when fertility rates dropped between 1915-1924 (small generation of mothers) further reducing fertility in 1941-1945 (small generation of daughters) and again in 1965-1970 (small generation of granddaughters). However, an increase in the fertility rate between 1935-1940 (sizeable generation of mothers) boosted the rise in fertility in both 1955-1965 (sizeable generation of daughters) and 1985-1991 (sizeable generation of granddaughters). The demographic wave peaked every 27 years (1937, 1964 and 1991), close to the average age of motherhood, and it can therefore be expected that the next peak will take place in 2018.

The difference in the age structure between the actual population and its stable equivalent (Figure 1.25) determines the extent to which a real change in the

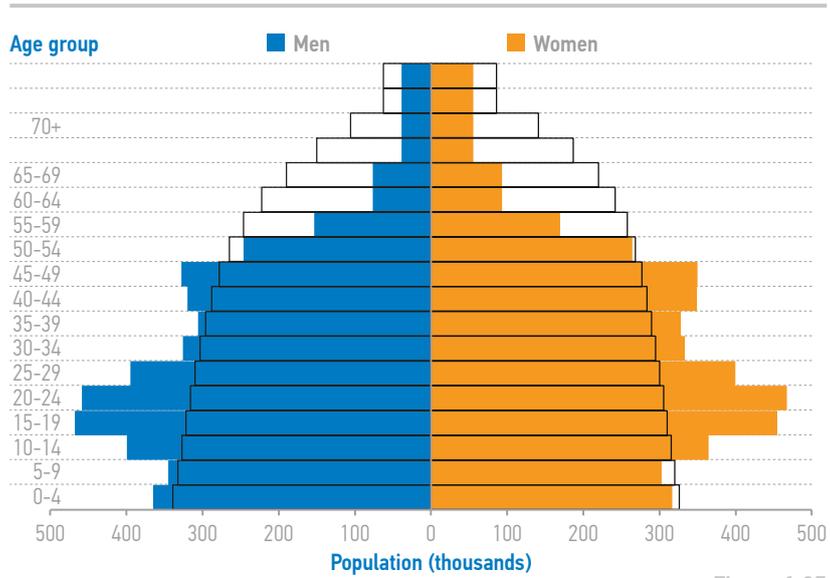


Figure 1.25

population size differs from a change that would have occurred solely due to the level and structure of age-specific mortality and fertility. In this regard, the age structure of the population accumulates some growth potential which can be either positive or negative. Growth potential is measured by calculating the size of a population where the fertility rate is such that the size of the generation of daughters equals the size of the generation of mothers. Thus, the growth potential depends on the difference in the proportion of women of reproductive age in the actual population and its stationary equivalent.

As noted earlier, the average age of the population in Azerbaijan is nearly three years less than average age of its stable equivalent, and thanks to the demographic wave, the proportion of women of reproductive age (15-49) is 30% compared to the 21% stable equivalent. Based on the assumption that the sex ratio at birth is normal – 105 boys per 100 girls – this produces a highly significant demographic growth potential and, as a result, the population size is expected to increase by 28.5%. Interestingly enough, if the sex ratio at birth is higher for boys, the population growth potential increasing.

From an economical perspective, these consecutive waves counter-balance each other by maintaining a favourable ratio between the working-age and non-working age population. However, a strong demographic wave can create tension in the labour market when a sizeable generation reaches working-age, or when the pension system becomes overloaded when a sizeable population reaches retirement age.

Figure 1.25
Age structure of the population of Azerbaijan according to the 2009 census and the age structure of the stable population equivalent to the reproduction regime in 2009 – 2010 (SR=1.05).

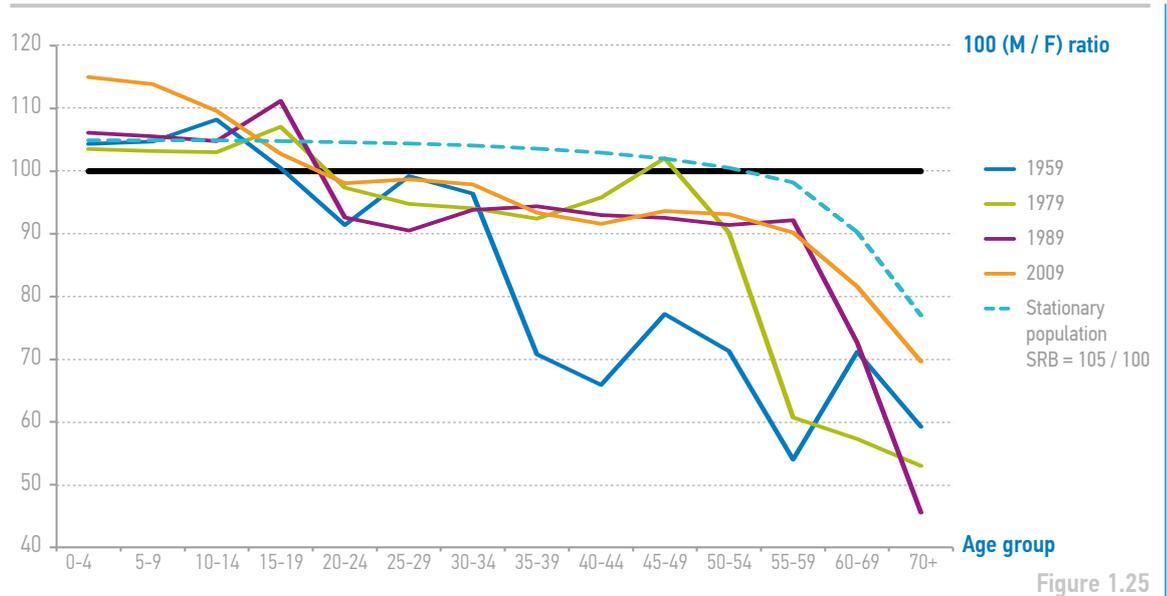


Figure 1.25

Figure 1.26
Sex ratio by age groups in Azerbaijan according to census data

Figure 1.27
Dynamics of the sex ratio at birth in Azerbaijan in 1935 – 2011 (actual observed ratio and moving average)

¹¹ UNFPA Azerbaijan and the State Committee for Family, Women and Children's Affairs conducted additional research into the causes and effects of this situation in their report entitled "Mechanisms behind the Skewed Sex Ratio at Birth in Azerbaijan: Qualitative and Quantitative Analyses" which investigates factors influencing sex preferences at birth in Azerbaijan. It is also explored further in Chapter 3 of this report.

1.2.8 Sex ratio and gender aspect of the age and sex structure of the population of Azerbaijan

The normal sex ratio at birth ranges from 104-106 boys per 100 girls, hence, in younger ages there is an excess of males by 4-6%. However, due to a higher male mortality rate this ratio equalises by the age of 18 – 20 and with increased age, the balance favours women. Therefore, in the absence of sex-selective migration, the sex ratio in the total population of all modern societies is biased towards a higher percentage of women.

Azerbaijan's 2009 census reported 98 men per 100 women on average (97 in urban areas and 99 in rural areas). However, the data also revealed 115 boys per 100 girls aged 0-5, an indicator much higher than it should naturally be; which then balanced out by age 22-23. This situation follows the trend of the 1999 census, when the

sex ratio at age 0-19 was within the normal range of 105 males per 100 females, whereas the sex ratio in the age group of 0-4 was 110 boys per 100 girls (Figure 1.26). This skewed sex ratio at birth has been observed in Azerbaijan from the early 1990s: and average of 106 boys per 100 girls born between 1980-1991, and 117 boys per 100 girls between 2001-2011.¹¹ (Figure 1.27)

This skewed sex ratio at birth was observed in both urban and rural areas though it has yet to affect the age of the balanced sex ratio (age 20 in 2009). However, in 1999 the balanced sex ratio is observed in the rural population in the age range of 15-19, while in 2009 the balance was in favour of men up to the age of 40. This demographic masculinisation of the young rural population is presumably reinforced by the out-migration of young women from rural areas as a result of the limited rural job opportunities.

The demographic masculinisation of the population of Azerbaijan is an inevitable and positive process given the decreasing male mortality rate; in 1990 the mean life expectancy for women was 8 years longer than for men, dropping to 6.11 years by 2000 and 4.8 years by 2008. Thus, if the sex ratio at birth was normal - 105 boys per 100 girls - the number of men would have been higher than the number of women for all ages below 55.

A gender balance has almost been reached in the working-age population: the sex ratio was 97 men aged 20-62 (99 in the countryside and 95 in urban settlements) per 100 women aged 20-59 according to the 2009 census data, while in 1999 and 1989 the ratio was 95 men per 100 women in these age groups.

The trend towards gender balance can also be found in the retired population, where, between 1989 and 2009, the sex ratio has increased from 48 to 64 in the population of men aged 63+ and women aged 60+.

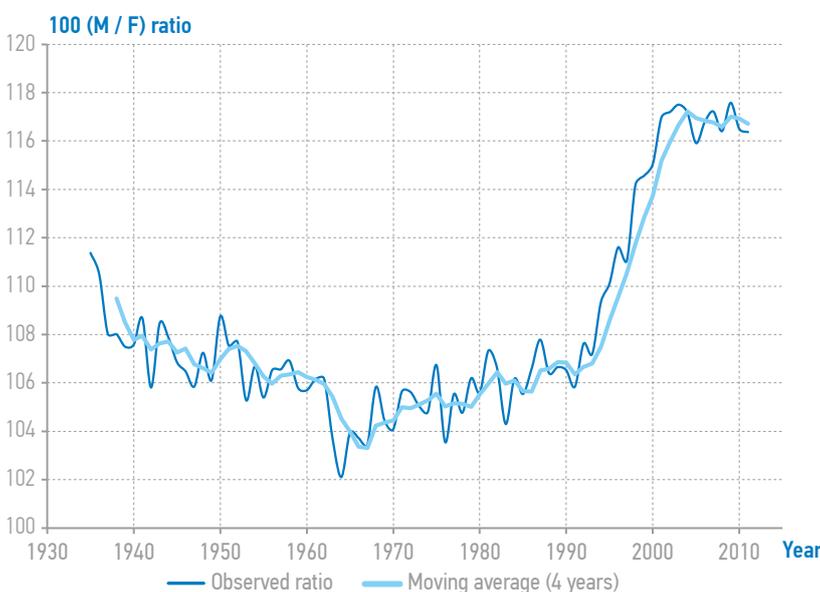
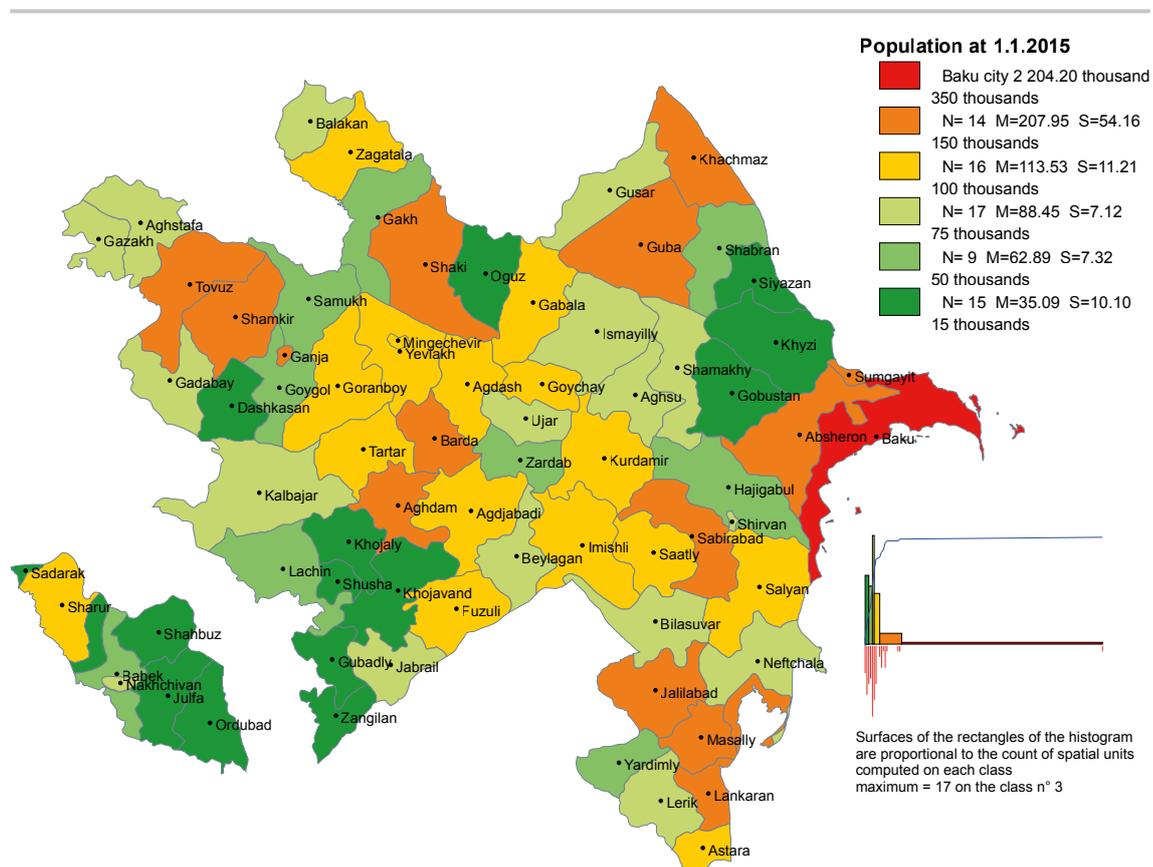


Figure 1.26

1.3. Dynamics of regional demography in 1990–2011



Map 2
Distribution of Azerbaijan's population by administrative regions at the beginning of 2015

Map 2

1.3.1. Spatial distribution of the population of Azerbaijan

The territory of Azerbaijan, including the Nakhchivan Autonomous Republic, is divided into 72 administrative units of which 66 are administrative regions and six are cities with autonomous administration. These administrative regions and cities are grouped into 11 economic zones. Baku, the capital of the Republic of Azerbaijan, is an independent administrative unit and represents a separate economic zone.

Historically, the spatial distribution of Azerbaijan's population was uneven, due to both climatic conditions and the peculiarities of economic development. The population was mainly concentrated in the fertile plains, along land and river trade routes, in the fishing areas of the Caspian coast and around the

strategic centres, one of which was the fortress city of Ganja (Elizavetpol, 1804-1918). However, with the development of the oil production and oil processing industry, since the late 19th century Baku and the surrounding areas of the Absheron Peninsular have become the main centres attracting the population. The sub-tropical climate of the Lenkoran lowland is favourable for the development of agriculture and the food industry, and ranks second in terms of population size. During Soviet times the population continued to be concentrated in the three key regions – Ganja, Baku and Lenkoran – with additional population concentrations along the Kura river valley and along the large railway and automobile roads.

When the country regained independence, in 1991, about 30% of the 7.132 million population lived in Baku (1.8 million people) and the adjacent Absheron economic zone (338,000 people). The population of Ganja, the second biggest city, was about 282,000, while the population of Sumgayit, near to Baku, was 257,000. Of the remaining 69 administrative units, only 12 units had a population above 100,000 people, the Lenkoran region being the most populous with 165,000 residents.

By the beginning of 2014 the structure of the centers of population density remained virtually unchanged (Map 2). 29% of the population remained concentrated on the Absheron Peninsular, with 23% living in Baku and by 2014, Baku's population had exceeded 2.1 million people. By early 2014, the populations of the bordering administrative region of Absheron and the city of Sumgayit had increased to 200,000 and 329,000 people respectively, and in 2012, Sumgayit replaced Ganja as the second biggest city in Azerbaijan outnumbering Ganja, which had 324,000 residents at the beginning of 2014.

By the beginning of 2014, only 13 administrative units, including Baku, had populations exceeding 100,000 people. Besides Baku, Sumgayit, Ganja and the administrative region of Absheron, the most populated regions are Jalilabad, Lenkoran and Masally each having the population of over 200,000 people. These regions are part of the Lenkoran economic zone, which is considered the second centre of demographic

significance in Azerbaijan. The regions of Shamkir and Tovuz, which are part of the Ganja-Gazakh economic zone, together with Ganja city, represent the third biggest demographic centre, with a population of around 700,000.

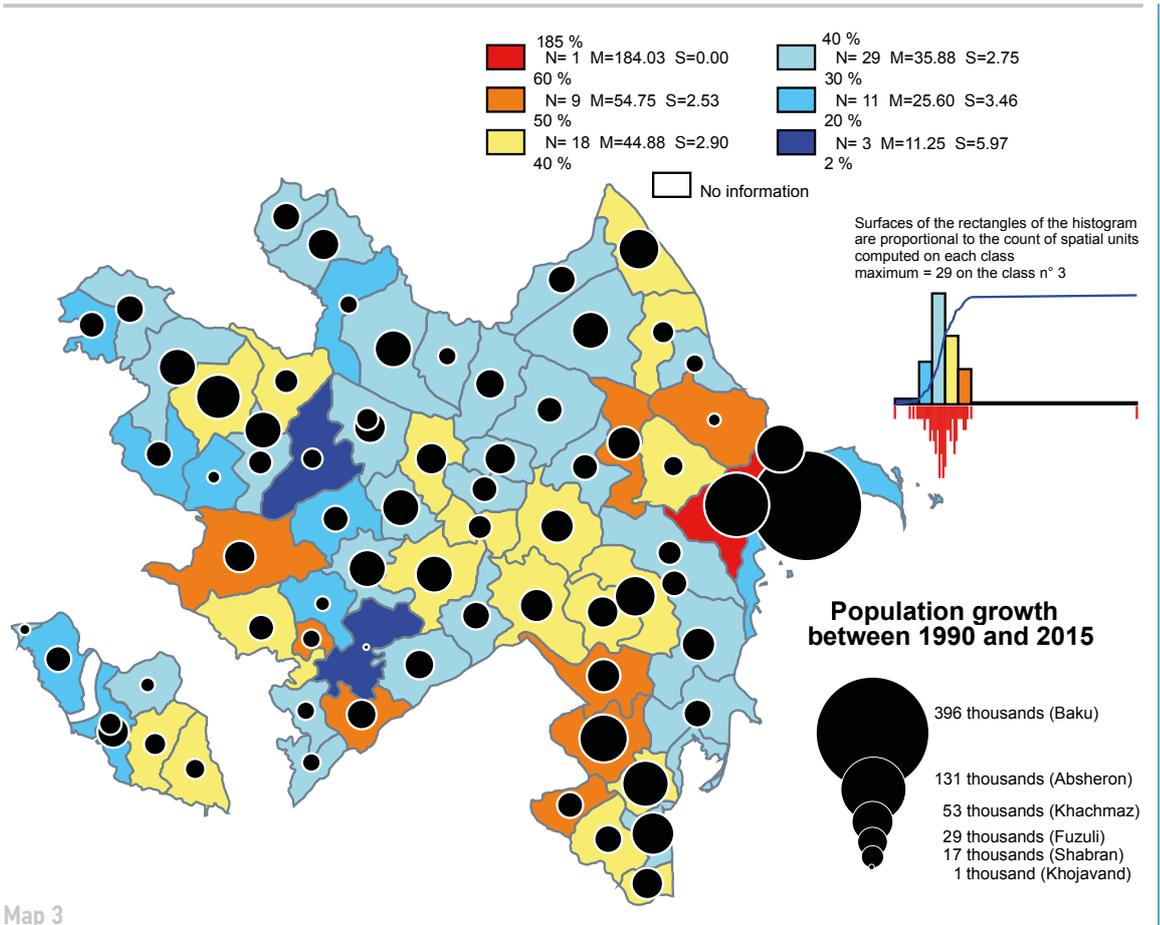
The average population density in Azerbaijan is 109 persons per square kilometre (sq.km.) (Table 1). The highest is in the Baku agglomeration (1,020 people per sq.km.), while the Absheron and Lenkoran economic zones have average population densities of 145 and 146 people per sq.km. respectively. A relatively high density is also found in the Karabakh plain, the territories adjacent to the Kura valley and major railways and highways. The least populated areas in Azerbaijan are the economic zone of the Upper Shirvan (49 people per sq.km.) and the Kalbajar-Lachin economic zone, which is now a part of the occupied Nagorno Karabakh Autonomous Region, (37 persons per sq.km.) Another scarcely populated area is the territory comprising the Gobustan, Jeyrangol, Shirvan and Mugan plains.

Due to the peculiarities of the landscape the economic zones of Azerbaijan are not homogeneous in terms of population density and number. The Absheron economic zone, for example, comprises the densely and highly populated Sumgayit and Absheron administrative regions and also the large but scarcely populated Khyzy region which has the lowest population density in Azerbaijan – only 9 people per sq.km.

Economic regions	Population (thousand people)	Population Density (people per sq.km.)
Republic of Azerbaijan	9,477.1	109
Baku	2,181.8	1020
Absheron	545.3	146
Ganja-Gazakh	1,227.5	100
Sheki-Zagataly	593.2	67
Lenkoran	880.4	145
Guba-Khachmaz	518.4	74
Aran	1,910.4	90
Upper Karabakh	645.0	88
Kalbajar-Lachin	240.1	37
Upper Shirvan	299.7	49
Nakhchivan	435.3	79

Table 1
Number and density of the population of the Republic of Azerbaijan by economic regions as of 1 January 2014

Source: www.stat.gov.az ("Azərbaycanın demografik göstəriciləri" "Demographic indicators of Azerbaijan" Statistik məcmua, 2014, p.56)



Map 3

1.3.2. Trends in the spatial distribution of Azerbaijani population between 1990 and 2012

Map 3
Relative and numeric change in Azerbaijan's population size by administrative regions from January 1 1990 to January 1 2015

The population in all the administrative regions of Azerbaijan was more numerous in January 2014 than it was in January 1990. Between 1989 and 2014, the population increased rapidly in three historically important centres of population amassment (Map 3). The most significant absolute increase of population was recorded in Baku (374,000 people), although in relative terms this increase was 20%, placing Baku 66th in the ranking of all administrative regions by rate of population increase. The highest relative population increase was recorded in the Absheron administrative region, where the population has grown from 71,000 to 200,000 (2.8 times). Absheron therefore follows Baku in terms of absolute population increase after which is Sumgayit, where the number of dwellers increased by 28% (73,000) between 1990 and 2014.

An important increase (60%) was also observed in the Khyzy region of the Absheron economic zone between 1990 and 2014. Although this region was and remains one of the most under- and sparsely populated administrative units of Azerbaijan, its relative population increase places it second after the neighbouring Absheron administrative region.

It would therefore appear that the outlying areas of large cities, such as Baku and Sumgayit, are becoming new pull of gravity for the population. The population of the Absheron economic region increased by 60% between 1990 and 2014 and this could well be caused by overspill from over-populated Sumgayit (nearly 3,660 people per sq. km.). It is considered the most densely populated territory of today's Azerbaijan.

The second fastest-growing economic zone is Lenkoran, which saw an increase of nearly 60% between 1990 and 2014. The highest population growth during the same period was recorded in the administrative regions of Jalilabad, Massaly and Lenkoran.

Although the Ganja-Gazakh economic region ranks last in terms of its relative increase in population size between 1990 and 2014, it follows Lenkoran in terms of absolute population increase, with the highest population growth found in the regions of Shamkir and Tovuz and the city of Ganja. This would suggest that the region is losing its popularity as an attractive place to live.

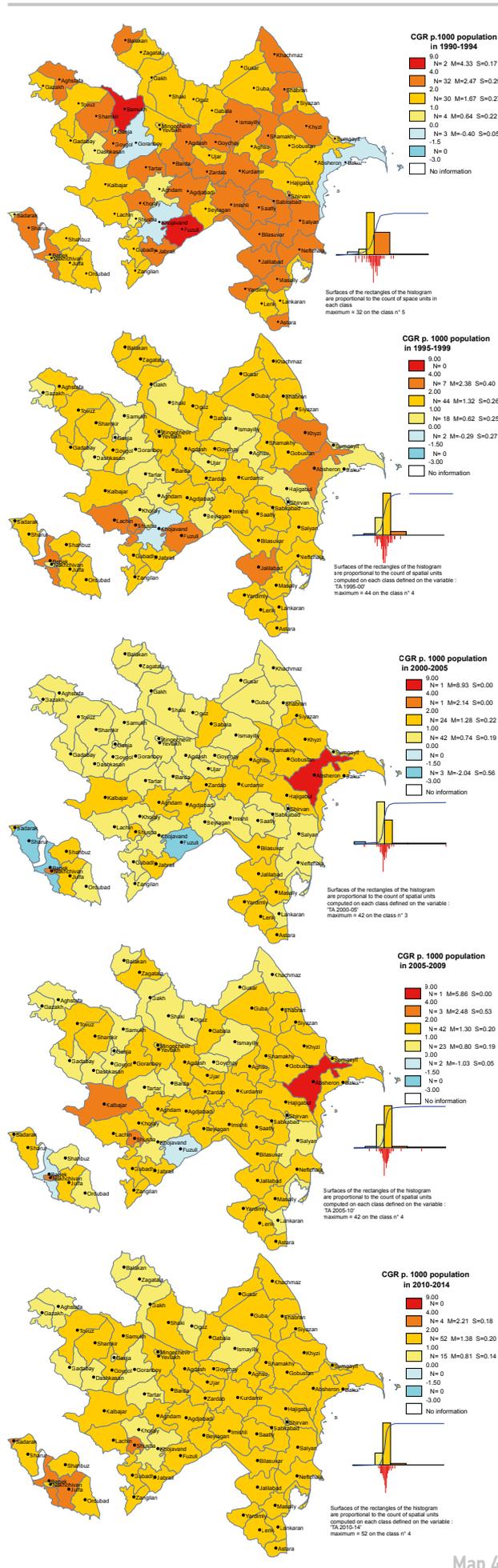
The important regional disparity in population growth were observed between 1990 and 1995 during which period the population of Baku decreased by 42,000, as did the populations of the administrative regions of Geranboy and Khojavand. However, most of the remaining territory of Azerbaijan experienced a growth rate of about 1.5-2.5% annually, particularly in the Samukh and Fizuli regions. Then, since 1995 up to now, regional disparities in the rate of the population increase in Azerbaijan appear to be gradually reducing (Map 4).

Between 1995 and 2000 the population of Baku increased by 41,000, thereby bringing the capital's demographic balance to zero. Overall, the average growth rate of the population by administrative region has declined from 2% per year in 1990-1995 to 1.2% per year in 1995-2000. Only the Khojavand region and the city of Mingachavir experiencing a population decline between 1995-2000.

From 2000 to 2005, the population of the Absheron economic zone increased by 61,000 people, thus becoming the center of the rapid demographic growth, with the Baku city, the population of which increased by 108,000 during this period. This period is also marked with the outflow of the population from the Fizuli region and the regions of Sharur and Babek which are part of the Nakhchivan Autonomous Republic. The rest of the territory experienced slowing rates of population growth. In 42 administrative regions the population growth did not exceed 1% per year. The only exceptions were the Absheron administrative region and the city of Nakhchivan growing at 2% per year.

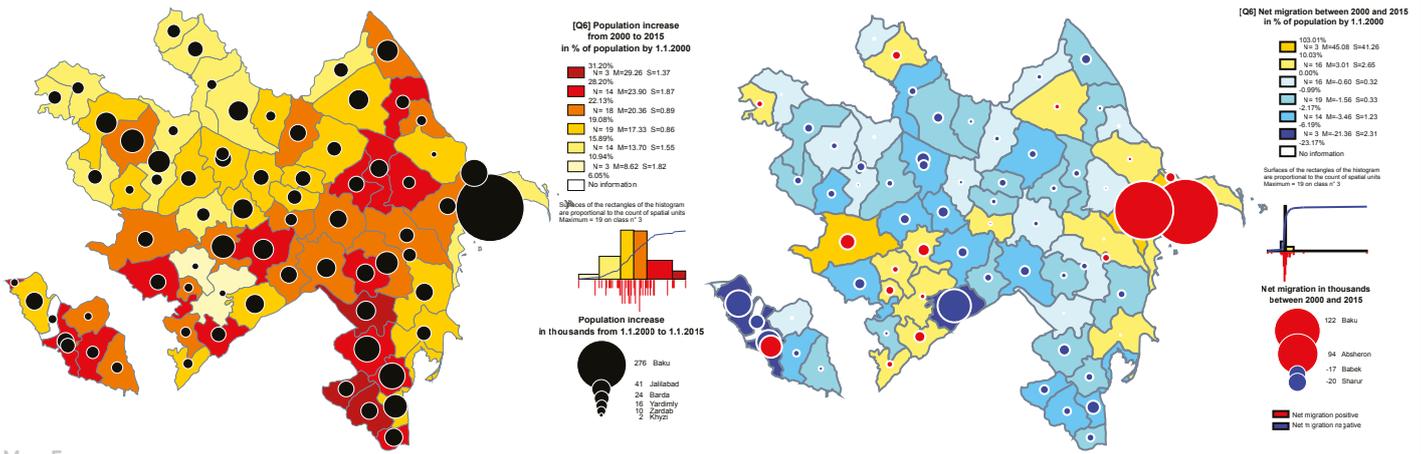
In the period between 2005 and 2009 only the Sharur and Babek administrative regions had declining populations. The Absheron region maintains significant, although slowed-down, population growth rate. On the contrary, the crude population growth rate in the city of Nakhchivan has increased to 3.2% per year. Over this period the upward trend in the crude population growth rate is observed in many parts of Azerbaijan. The number of regions with the crude growth rate of over 1% has reached 47, whereas the number of regions with the crude growth rate from 0.35 to 1% has reduced by half compared to 2000-2005.

Finally, the population growth rate across the administrative regions evened out over the last five years with no areas showing the population decrease. During this period, the crude growth rate of 52 administrative regions was 1.04% to 1.87% annually, while 14 regions had an average annual population growth rate of 0.6% to 0.97%. The lowest rate of 0.4% was registered in the Khojavand region, while the growth rate in the Absheron region dropped to 1.2%. The fastest growth rate during this time was observed in four regions of the Nakhchivan Autonomous Republic (2.04%-2.5% annually).



Map 4

Map 4
Annual crude population growth rate in the administrative regions of Azerbaijan by five-year intervals from January 1 1990 to January 1 2010, and a four-year period from January 1 2010 to January 1 2015.



Map 5

Map 5
Natural (on the left) and migration (on the right) increase/decline of the population in the administrative regions of Azerbaijan in the period between January 1 2000 and January 1 2015, % to the population size at the beginning of the period (colour) and in numeric values (circles).

Map 6
Migration increase/loss of the population in the administrative regions of Azerbaijan by 5-year intervals from January 1 2000 to January 1 2010, and over five years from January 1 2010 to January 1 2015, as percentage of the population size at the beginning of each interval (colour) and in numeric value (circles)

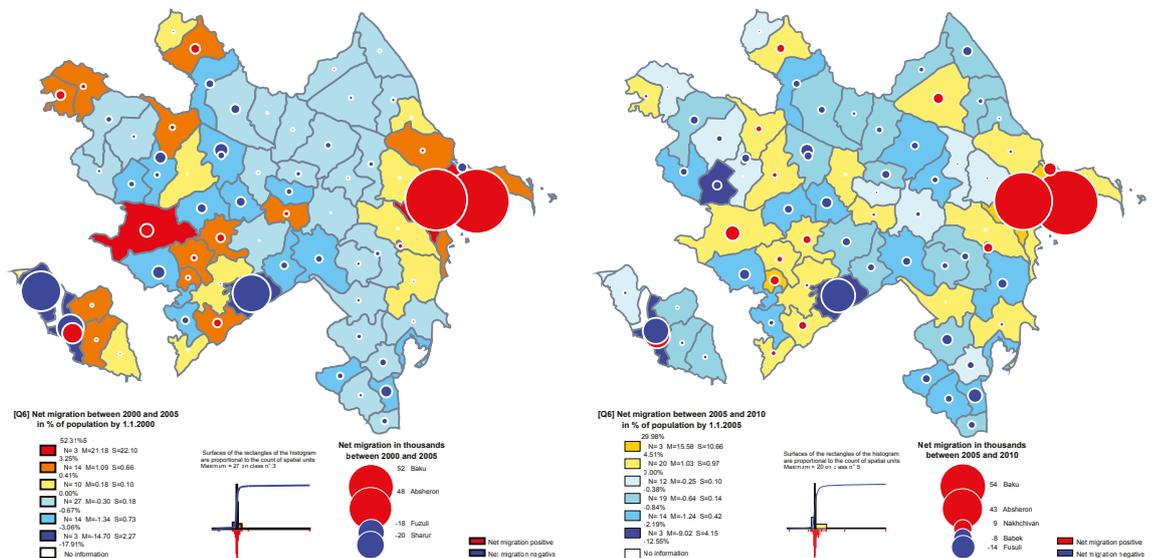
1.3.3. Demographic components of the changes in the spatial structure of the population

Using published available data on the population size from 2000-2014 and vital statistics, it is possible to calculate the natural population increase and the affect migration has had on the change in the population size of Azerbaijan's administrative regions. These calculations have shown that natural increase (number of births versus deaths) has been the main factor behind the increase in population size throughout Azerbaijan (Map 5).

In absolute terms, the the most populous area – the cities of Baku, Sumgayit and Ganja and the Lenkoran economic region, experienced the largest natural increase. The highest relative population growth was found in locations along the Astara-Saatly line in the southern part of the country, increasing by nearly

25% between 2000 and 2015. Considerable natural growth was recorded in the Julfa and Babek regions of the Nakhchivan Autonomous Republic and in the Gobustan, Shemakha, Akhsu and Shabran regions while the lowest was found in the regions of Khojaly and Khojavand.

Net migration was negative in the 24 administrative regions during the 2000-2014 period. The Absheron region and Nakhchivan city recorded the highest net migration ratio to the population number at the beginning of the period. For the same period the highest net migration (in amount terms) was recorded in Baku (121,500 people) and the Absheron region (93,200 people), while in Nakhchivan the migration increase between 2000 – 2013 was only 14,000 people.



Map 6

¹ The estimates at the national level suggest that net migration over the period under examination should amount to 142,000 people.

During the same period, 50 regions had negative net migration, particularly the Babek and Fizuli regions (a nearly 25% decrease because of migration), and in the Sharur region (18% decrease).

Because of migration the population of the regions with positive net migration grew up with about 258 thousands, and the population of the regions with negative net migration lost about 147 thousands. The difference of 111 thousands between the regional gains and losses should be attributed to the external migration, which has a positive balance after 2000.¹

The comparison of the migration increase/loss of the population by region over the periods 2000-2004, 2005-2009 and 2010-2013 suggests that the intensity of spatial redistribution has slowed down. In population centres such as Baku and Nakhchivan, where the amount of positive net migration in 2005-2009 was higher than in 2000-2004, the decline of the net migration ratios was attributed to the increase in the size of the present population in relation to which these indicators are calculated (Map 6). While in the first and second periods the migration-driven increase of the Baku population was about 53,000 people, from late 2009 to early 2014 it has only increased by 15,300.

Similar trends can be observed in the Absheron region, the second most attractive centre for migrants, which recorded a net migration of 47,700 people between 2000-2005. Thereafter migration declined slightly to 42,700, falling to 2,800 people during 2010-2014.

Apart from the changes noted above, migration trends have varied little. Fifty regions continue to have negative net migration although their composition changes slightly every year.

1.3.4. Changes in the regional structure of the urban population

In 2012 Azerbaijan had 334 settlements classified as urban population areas, -77 towns and 257 peri-urban settlements. Urban populations are traditionally located around large industrial areas and in Azerbaijan the Absheron Peninsular is home for most. According to 2012 data, 43.4% of the total urban population of the country resides in Baku alone, with 10% in the Absheron Peninsular and 7% in Sumgayit.

Historically, Baku is the world's oldest centre for the oil industry, resulting in a fast growth in its population. According to the first Russian country-wide population census of 1897, Baku had 112,000 residents, but by 1926 its population has increased 4.6 times as it evolved into an industrial centre. This rapid growth began to slow, and between 1926 and 1959 the population size had increased by 80% (reaching 968,000 people according to the 1959 census). A new demographic boom hit Baku in the 1960s, increasing the population by 30% in 10 years, and turning Baku into 'a millionaire city'. Over the past three decades the population growth rate has gradually subsided. In 1970 1,266,000 people lived in Baku and its suburbs, increasing to 1,550,000 (1979), 1,795,000 (1989), and 1,789,000 (1999), an increase of 22.5% between 1970-1979 and 14% between 1979-1989. However, over the last decade of the 20th century the population shrank by 0.3% due to intensive out-migration by the Russian-speaking population and ethnic Armenians in 1990-1991. (Figure 1.28)

Until the 1980s, the population of the two major centres of the oil industry, Baku and Sumgayit, was made up of a high proportion of migrants from other Soviet republics. In 1979, only 56% of ethnic Azerbaijanis lived in Greater Baku,² while of the one million people living in Baku city itself, 52% were Azerbaijani, 23% Russian and 17% Armenian. Among the male population there were 57% Azerbaijani, while among the female population only 48% were Azerbaijani and 27% Russians.

Figure 1.28
Historical dynamics of the Baku population

² Baku city and the adjacent peri-urban areas subordinate to the Baku City Council.

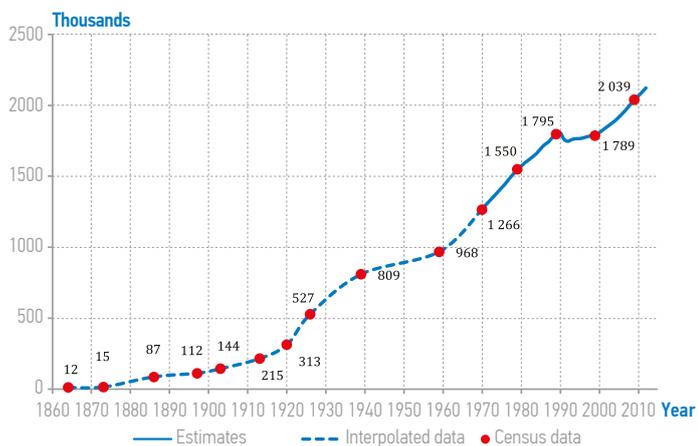
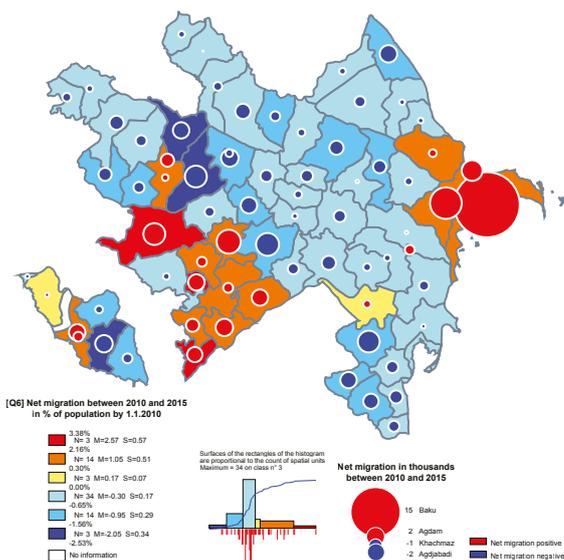


Figure 1.28

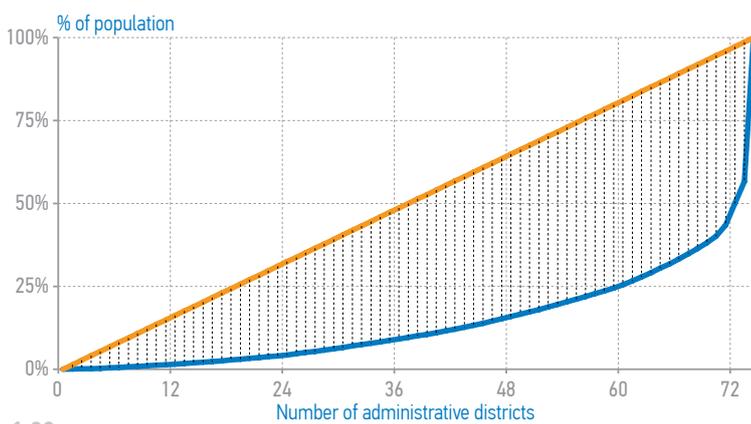


Figure 1.29

Figure 1.29
Degree of concentration of the urban population of Azerbaijan (Lorenz curve; Gini index = 0.75, the dotted area)

The ethnic structure of Baku's population began to change in 1989, with the number of Azerbaijanis increasing by 38% between 1979 and 1989 (66% of the population). During this same period, the Russian and Armenian populations decreased by 7% and 13% respectively.

Baku's population began to increase again between 1992-2010: an annual increase of 0.3% between 1993-1999; 1.1% during 2000-2004 and an average of 1.5% over the next five years. Although the growth rate slowed down in the last three years, the population continued to increase by about 28,000–30,000 people, due to natural increase and migration inflow. From 1992-2012 the population of Baku increased by 376,000 people (22%) reaching a total of 2,122,000 people by 2012.

Unlike Baku, the population of Sumgayit was growing progressively and during 1990-2012 increased by 62,000 people (25%) reaching a total of 319,000. By 2012 the combined population total of all the other urban settlements of the Absheron economic region had reached 170,000. These settlements saw the fastest growth, more than doubling in size since regaining independence. Half the total urban population of Azerbaijan now lived in Baku and Sumgayit, thus by 2012 53% of Azerbaijan's population resided in the Absheron Peninsular.

By contrast, Ganja, a regional centre with a population of over 321,000 people in 2012, saw a more modest and uneven population growth rate: 5.2% (1990-1995), 1.3% (1995-2000) and 1.6% (2000-2005). The growth rate accelerated between 2011-2013 (5.1%), which is entirely attributable to natural growth as the net migration in Ganja over the past 12 years has been negative.

Azerbaijan has an extremely high level urban population concentration. The Lorenz curve³ shows that 75% of the urban population is concentrated in 15 administrative regions, predominantly in the three largest cities: Baku, Ganja and Sumgayit (56%). Eleven urban settlements have a population of between 50,000 and 100,000 people, while over half the urban settlements (172 out of 334) has a population size below 3,000. The remaining approximately 40% of the urban population is evenly distributed throughout the country, with less than 2%

living in each administrative region with the exception of the Absheron region (3.3%).

Between 1990 and 2012 the urban population increased in all the administrative regions of the country (by an average of 27% in most).⁴ The most substantial growth occurred in the Absheron (by 2.2 times), Gobustan (by 2.4 times) and Khojaly (by 2.7 times) regions. The urban population also increased by an average of 70% in 15 administrative regions.

Over the past 22 years the growth of the urban population by administrative region was uneven. In 1990-1994 it decreased in seven regions, including by 2.3% in Baku; in 1995-1999 12 regions experienced a decline; but between 2000-2005 and again during 2006-2010 only two administrative regions registered a decline. In the latter case, the decline of the population in one period has been well compensated by its increase during the subsequent period making the total balance of the urban population increase between 2000 and 2012 positive in all regions.

As the balance of the natural increase in the urban population between 1990 and 2012 was positive in all administrative regions, the urban population only decreased in areas where the natural increase was unable to compensate for migration outflow. Despite the fact that net migration was negative in 23 of the 72 administrative units⁵ (where data was available) during 2000-2005, only the city of Naftalan and the region of Agdam registered a decline in population number. Between 2005 and 2012 this migration outflow of the urban population continued and was observed in 42 out of 74 administrative units⁶ (where data was available).⁷

During the first 5 years of the 21st century migration outflow was relatively small. Though most noticeable in the Agdam region, where the urban population decreased by 4.8%, in other regions the average loss was equal to 1.2% of the 1990 population. From 2005 onwards migration outflow began to increase and to affect more urban populations. Between 2005 and 2010, 40 out of 74 administrative regions had negative net migration, and by 2012 42 regions reported population decline. The Salyan region experienced the greatest loss (27%). During the previous five years the urban population in this region had increased by 24% due to migration inflow, thus this outflow reduced the population by 3.5% from the 2000 figure. On average, administrative regions reporting a negative net migration of urban population between 2005 and 2012, had a migration-associated loss of over 3%, twice as much as reported in 2000-2004.

The migration outflow of the urban population can be a cause of concern when it occurs in a politically stable environment and rapidly growing economy. An assessment of the factors, structure and direction of the urban migration outflow, based on population census data, or mass sampling studies, will provide information on why people are leaving and where they are going.

³ The Lorenz curve illustrates the extent to which the cumulative distribution of the units, ranked by size, (in this case by the urban population size) differs from the distribution that would be seen if all the units were of equal size. The wider the gap between the actual and theoretical distributions the greater the level of concentration. In quantitative terms this difference is measured by the Gini co-efficient that has a value equal to the area between the theoretic and the actual distribution multiplied by two. The maximum concentration (in one point) is expressed by the Gini coefficient of one, and the absence of concentration (perfect equality) is expressed by the Gini coefficient of zero. In 2012, the Gini index for the concentration of the urban population of Azerbaijan was equal to 0.71 signaling a very high degree of concentration.

⁴ 50 of the 72 regions have data for the entire period. The region of Khankendi, however, saw a population decrease of 2.8%.

⁵ 66 regions and 6 cities of Azerbaijan (Nakhchivan, Shirvan, Khankendi, Naftalan, Ganja, Sumgayit)

⁶ Ibid and 2 regions in Nakhchivan (Sadarak, Kengerli)

⁷ The scope of this analysis does not cover the dynamics of the large and multi-vectored migration flows resulting from the shocks experienced in 1990s such as the collapse of the Soviet Union and new political set-up on the post-Soviet territory, and the escalation of the armed conflict between Azerbaijan and Armenia in and around Nagorno Karabakh. This period has left Azerbaijan with a heavy legacy of massive refugee and internally displaced populations estimated at around 700,000, or 7-8% of the country's population.

1.3.5 Change in the regional structure of the rural population

The rural population of Azerbaijan is more evenly distributed across the regions than the urban population (Figure 1.30). In 2012, half the 4.3 million rural residents were concentrated in 20 administrative regions, the most populous being the Massaly region (176,000 rural residents) and the Jalilabad region (142,000), both located in the Lenkoran economic zone. The Agdam region (Upper Karabakh) has 141,000 rural residents, the Tovuz region (135,000) and the Shamkir region (130,000), part of the Gazakh-Ganja economic zone. The Lenkoran region (Lenkoran economic zone), the Sabirabad and Barda regions (Aran economic zone), the Guba and Khachmaz regions, the Sheki region (Sheki-Zagatala economic zone), and the Sharur region of Nakhchivan all have over 100,000 residents. Thus, that the largest rural populations tend to reside in the fertile areas of the Kura valley and along the highways connecting with Baku and running from the Caspian coast towards Georgia and Russia.

13 regions of Azerbaijan, with over 100,000 rural residents each, account for 35% of the rural population. As of 2012, the rural population varied from 50,000-100,000 people in 31 regions, and 24 regions reported less than 50,000 residents. The Gini index for the concentration of the rural population of Azerbaijan is 0.32. However, this high level can be considered normal for a country partly located in the Greater and Lesser Caucasus mountains, 3,000-4,000 meters above sea level.

Between 1990 and 2012, the size of the rural population increased in all administrative regions with the exception of Khojali (Upper Karabakh) and Belakan (Aran economic zone) where insignificant were reported. The highest relative increase in the rural population was in the Khizi (77%) and Absheron (61%) regions (Absheron economic zone) and the Bilasvar region (64%) (Aran economic zone). Considerable relative and absolute increases were also found in the administrative regions located in the Kura valley of the Lenkoran economic zone. In general, the absolute increase in the rural population size between 1990 and 2012 was evenly distributed across the regions.

The dynamics of the change in the rural population size between 1990 and 2012 had a wave-like nature. Between 1990 and 1995 the average change of the population size by regions was about 10.5%, for obvious regions the rural population in the three regions of Upper Karabakh and the adjacent Geranboy region of the Ganja – Gazakh economic zone declined. In the following five years, the rural population increased in all regions except for Khojavend. In the 21st century rural population decline became apparent in more areas, with decreases registered in 13 administrative regions (2000-

2005). The average regional population increase fell from 8% (1995-1999) to 2% and the maximum increase only reached 9% compared to 19% (1995-1999). From 2005 onwards rural population growth rates have risen again with only five regions recording a decline.

As mentioned earlier, the rural population of Azerbaijan has a high rate of natural population increase that are normally higher than the crude growth rate because most rural regions in the 21st century registered considerably negative net migration. Between 2000 and 2012 migration-associated population increases were recorded only in 14 administrative regions. The highest relative increases during 2000-2011 were found in the Absheron Peninsular (26%) and the Khizi region (11.5%). In 12 regions the 2000-2012 net migration ratios were 2.2%, while 53 regions registered negative net migration. The highest migration-associated loss of population was found in the Fizuli region (27%), the Belakan region (21%), the Gabala region (26%), and the Babek (26%) and Sharur (18%) regions of Nakhchivan. Although difficult to identify possible stable trends in rural population migration, it is evident that the number of regions experiencing population losses because of migration is declining – 43 regions between 2000-2005 and 41 between 2005-2011. It also appears that the rural population tends to settle in the Caspian coastal areas adjacent to the Absheron Peninsular and in the downstream regions of the Kura River. To ascertain if the rural population is relocating to nearby towns and urban settlements, large cities, or other rural areas, where the living conditions are more favourable, a dedicated analysis of population census data or specialised migration research would need to be undertaken.

Figure 1.30
Degree of concentration on the rural population of Azerbaijan (Lorenz curve, Gini index = 0.32, the dotted area)

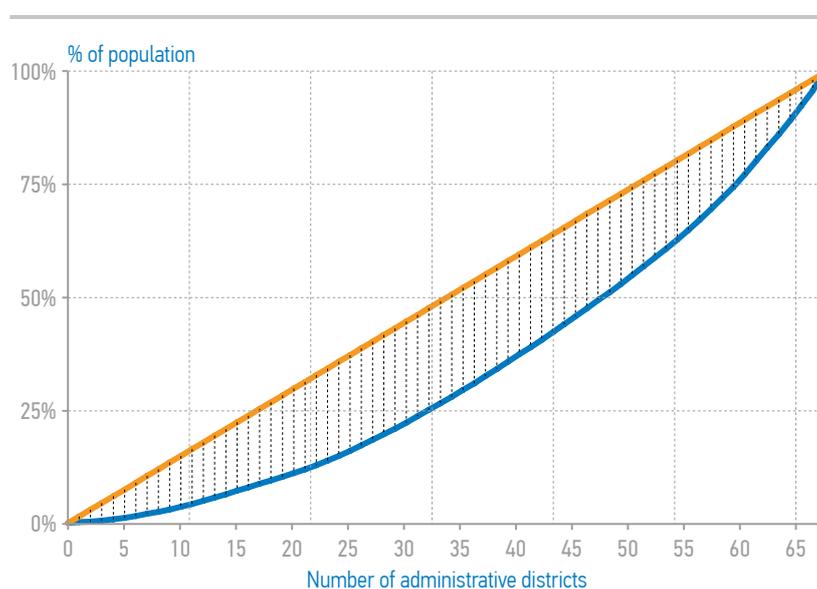
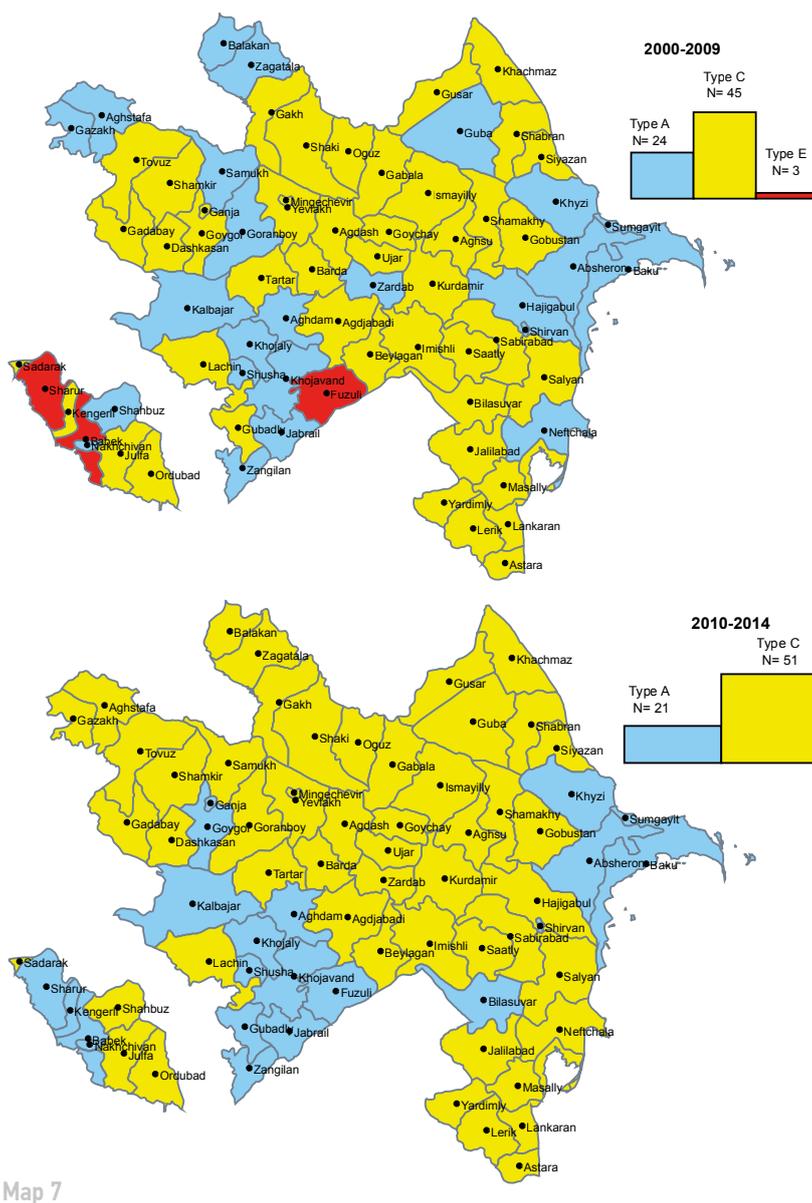


Figure 1.30



Map 7

Map 7
Typology of the demographic situation in the administrative regions of Azerbaijan in terms of conditions favouring sustainable development in 2000-2009 and 2010-2014

1.3.6. Classifying regions based on demographic development

Administrative regions can be classified based on the relationship between several demographic factors of population growth: crude population growth, net migration and natural increase, each recorded between specific dates. Each factor can have positive (population increase) or negative (population decrease) effects. There are six various combinations, three of which relate to crude population increase either as a result of the cumulative positive effect of the natural increase and migration, or because the negative effect of one factor is fully offset by the positive influence of the other factor.⁸

The best-case scenario for sustaining development is when the natural increase of the population is reinforced by positive net migration (Type A).

If the increase in the population size is only ensured by positive net migration while the natural population is decreasing (Type B) this will result in a distorted age structure and a dependency on immigration and development will therefore not be sustainable.

In case (Type C), when the population grows is ensured by the natural increase and negative net migration – the sustainability of development is ensured only in the short-term while long-term sustainability is at risk because the age structure of the population will become distorted.

Both the short- and long-term sustainability of development will be weak if the population declines because the positive net migration is unable to offset the natural population decline (Type D).

Development will even be less sustainable if, despite the natural increase the population size decreases due to migration outflow (Type E).

Finally, in the worst-case scenario the population numbers fall due to both natural and migration decline and development is unsustainable (Type F).

The administrative regions of Azerbaijan can be classified as Type A, C and D, as every region has experienced a natural increase in both the urban and rural population (1990-2014). Between 2000-2009, 26 out of 73 administrative regions could be classified as Type A (Map 7), including the Absheron Peninsular, regions to the east of Ganja city (though not Ganja itself), the Guba, Zagatala, Neftchala and Bilasuvar regions of the Aran economic zone and the Upper Karabakh, while 44 regions were classified Type C.

In the Fizuli, Sharur and Babek regions the demographic situation in 2000-2009 did not favour sustainable development due to the sizeable out-migration from these regions. In 2010, the demographic situation improved as these outflows reduced, and the regions were reclassified from Type E to Type A. Thus, the conditions for sustainable development in Azerbaijan are affected by the migration of the population. The situation becomes even more complicated and less sustainable when changes in the size of the urban and rural population are factored in, as their dynamics could be multidirectional.

⁸ A study conducted in the first half of 2000s by the Swedish researchers in the framework of the EPSON project revealed that each case (combination of factors) correlates with the level of sustainability of development in the short- and long-term.

1.4. Ethnic and ethno-linguistic structure of the population of Azerbaijan

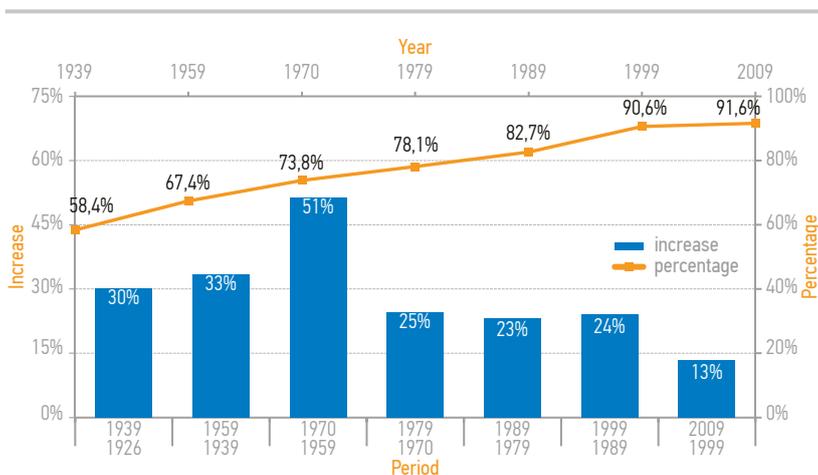


Figure 1.31

Figure 1.31
Increase in the size of the population (scale on the left and in the bottom) and increase in the share (scale on the right and on top) of Azerbaijanis, data from the population censuses

1.4.1. Ethnic structure of the population of Azerbaijan

Azerbaijan has over 80 ethnic groups, with the 8,173,000 (2009 census) Azerbaijanis constituting an overwhelming majority of the population (91.6%).⁹ The most numerous ethnic minorities each constituting a population exceeding 100,000 people, are Lezghins (2%), Russians (1.3%), Armenians (1.3%) and Talyshes (1.3%). One of the smaller ethnic minorities is the Avars, with a population of less than 50,000 people (0.6%). The Lezghins, Talyshes and Avars live predominantly in the Guba-Khachmaz, Astara-Lenkoran and Sheki-Zagatal economic zones respectively, while most Armenians live in Nagorno Karabakh. According to the 2009

Figure 1.32
Change in the size of the main ethnic groups of the population between the censuses of 1989 and 2009

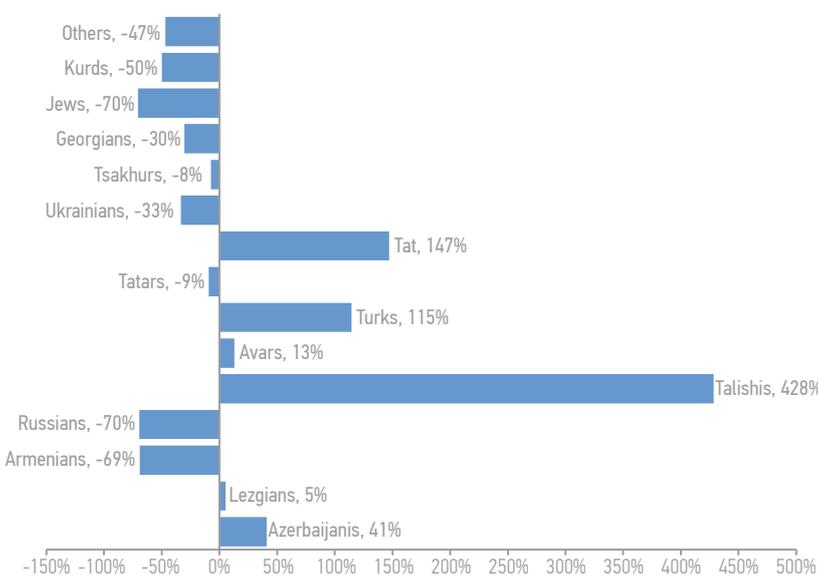


Figure 1.32

census, 38,000 Turks, 26,000 Tatars, 25,000 Tats, 21,000 Ukrainians and 12,000 Tzakhurs also reside in Azerbaijan. Other ethnic groups account for a total of 45,000 people, though the size of each group is below 10,000.

Data on the ethnic structure of a population is collected through a population census and on the basis of self-declaration. Changes in the size of ethnic groups are therefore determined either by demographic factors (fertility, mortality and migration) or by social and cultural factors, which influence assimilation and thus ethnic self-awareness. In this regard, the prevalence of mixed marriages; the language spoken in a family, the immediate environment and at work; the language used in education; the authority of social movements supporting ethnic identity, are all relevant factors. While demographic and ethno-cultural factors affecting the size of ethnic groups should be assessed separately, certain conclusions can be made by comparing the actual change in the size of the ethnic group and the hypothetical change that might occur based on the principles of demographic reproduction.

The percentage of Azerbaijanis in the population has been growing steadily (Figure 1.31), constituting 67.4% in 1959 and 90% in the 1999 census. The key factors enabling this increase were the high fertility and low mortality rates, combined with relatively minor external migration.

While the proportion of Azerbaijanis in the total population was growing, other ethnic groups were decreasing in size. Between 1959 and 1989, the number of ethnic Russians dropped from 500,000 to 390,000 (13.6%-6%), with ethnic Armenian numbers decreasing from 442,000 to 390,000 (12.6%) (Figure 1.32). The proportion of ethnic Lezghins and Avars only changed slightly, with growth rates slightly slower than for ethnic Azerbaijanis.

However, between 1989 and 1999, the ethnic structure of Azerbaijan saw dramatic changes, primarily driven by the mass out-migration of the Russian and Armenian population that decreased by 3.2 and 2.8 times

⁹ Reference is made to the ethnicity, and not nationality in the meaning of citizenship. According to the international law, all citizens of the Republic of Azerbaijan are Azerbaijanis regardless of their ethnicity. In the post-Soviet areas the demographic statistics traditionally describes the ethnic diversity of the population using the term 'nationality'. In the Soviet period, nationality defined as a status of belonging to a particular ethnic group was indicated in the passports of the USSR citizens. During the population census, the ethnicity was and continues to be self-determined by the respondent, or the person who provides information to the enumerator. In this sub-chapter the notion of Azerbaijani, Russian, Ukrainian etc. as well as the term 'nationality' refers to the status of belonging to a particular ethnic group and not to citizenship.

¹⁰ It should be noted that according to the 1989 census, 92% of the families in Azerbaijan SSR were mono-ethnic making the decision on emigration from Azerbaijan somewhat easy.

respectively. The Jewish population also showed a decline, from 31,000 to 9,000 people.¹⁰

Conversely, the number of Turks increased from 18,000 to 43,400 during this period (by 2.5 times), while the number of Talyshes increased from 21,000 to 78,000 (by 3.6 times). While the increase in the number of Turks can be attributed to the influx of immigrants driven by the expanding economic co-operation between Azerbaijan and Turkey, the soaring numbers of the Talysh population can only be explained by a socio-cultural factor (i.e., by changes in ethnic self-declaration in the 1999 and the 2009 censuses). This assumption may also explain the unexpected increase in the Tat population from 10,900 to 25,200 people (by 2.3 times).

Apart from the record increase in ethnic Talyshes and Tats between the 1999 and 2009 censuses, the only noticeable increase was the 13% recorded for ethnic Azerbaijanis. The Lezghin and Jewish populations did not change and other ethnic minorities showed a decrease: Tzakhurs (by 26%) and Ukrainians (by 23%), Georgians (by 34%), and Kurds (by 53%).

1.4.2. Ethno-linguistic structure of the population of Azerbaijan

The official language of the Republic of Azerbaijan is Azerbaijani. In accordance with the Law On the State Language of the Republic of Azerbaijan (2002), it is mandatory for all citizens of Azerbaijan to speak the Azerbaijani language. Azerbaijani must be used as the official language in the public administration and education. Equally, Clause 2 of Article 21 of the Constitution of the Republic of Azerbaijan states “The Republic of Azerbaijan ensures free use and development of other languages spoken by the people.” This provision permits the use of other languages in education provided that the Azerbaijani language is a mandatory subject on the syllabus.

According to the 2009 census, 98.6% of the population aged 3 and above are proficient in the Azerbaijani language including virtually all ethnic Azerbaijanis (Figure 1.34). Among the ethnic minorities nearly all Talyshes (99.9%) and Lezghins (97%) speak Azerbaijani, whereas only 0.2% of Armenians speak Azerbaijani. Only 43% of Russians and Jews speak Azerbaijani, while only 22.7% of Tatars and 5.6% of Ukrainians speak the language. Azerbaijani is freely spoken by other ethnic minorities with the exception of Georgians (only 8 out of 10 reported to be proficient).

The second most commonly used language in Azerbaijan is Russian, which is spoken by about 8% of the population aged 3 and above. Proficiency in Russian is above the national average level among Udins (71%), Lezghins (23.7%), Georgians (21.4%), Jews (19.3%), Avars (18.1%) and Tatars (12.1%). Only 6.7% of Azerbaijanis speak Russian.

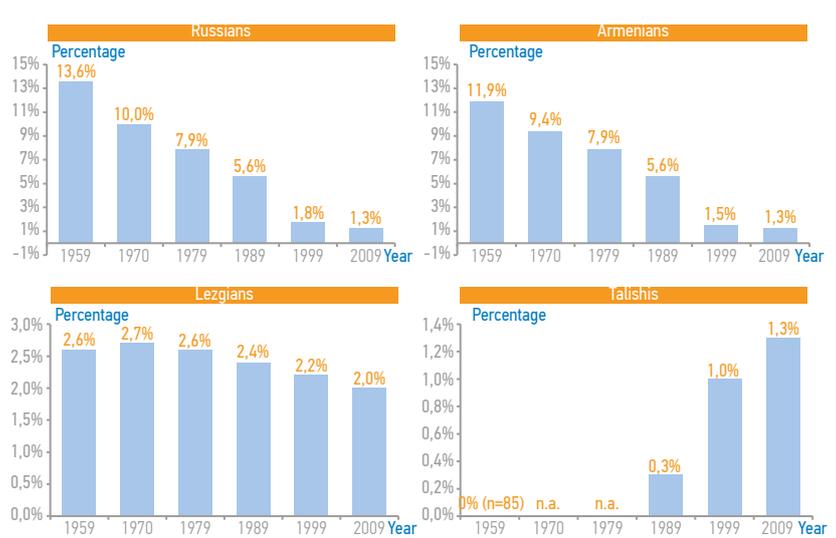


Figure 1.33

Proficiency in and the use of an ethnic language is an important factor for the sustainability of the ethnic group and its cultural self-identification. Nearly all Azerbaijanis, Russians, Armenians, Ukrainians, Georgians, Udins and Khynalygs (98-99%) consider the language of their ethnic group to be their mother tongue, while this is less so among Avars, Georgians, Tatars and Lezghins (93%). 76.5% of Tats have a good command of the Tat language and 75.4% regard the language as their mother tongue, while 43% of Talyshes have a good command of the Talysh language and 42.5% report the Talysh language as native. 51.2% of Kurds know Kurdish, while only 36.1% consider the Kurdish language their mother tongue.

Figure 1.33 Shares of the most numerous (>100,000 in 2009) ethnic minorities of the population of Azerbaijan, according to the population censuses

In those areas of Azerbaijan densely populated by ethnic minorities, various measures are taken to provide opportunities to study native languages (Avar, Lezghin, Talysh, Tat, Kurdish, Lezghin Tzakhur, Khyalyg and Udin) at school. In addition, Azerbaijan has 300 secondary schools, 18 high schools and 38 vocational schools providing education in Russian, including the Baku Slavic University founded in 2000 and the Baku branch of the Lomonosov Moscow State University that opened in 2009.

Figure 1.34 Language proficiency by major ethnic groups in Azerbaijan, from 2009 census data

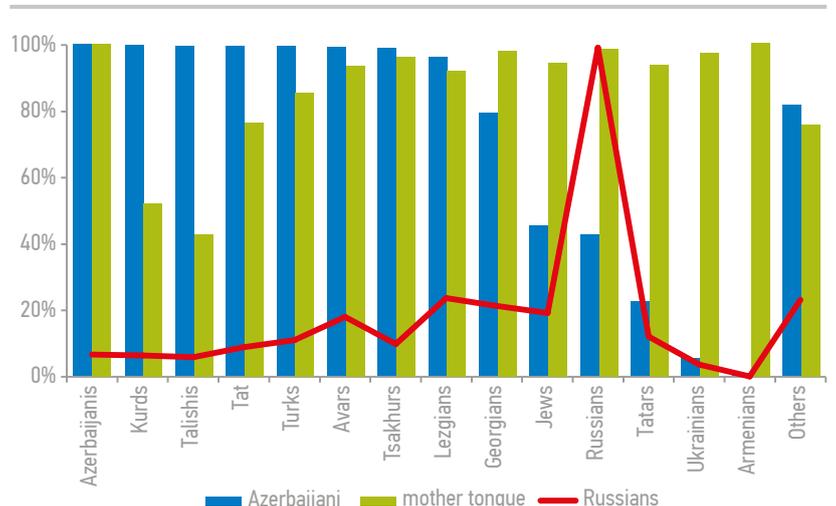


Figure 1.34

Conclusions:

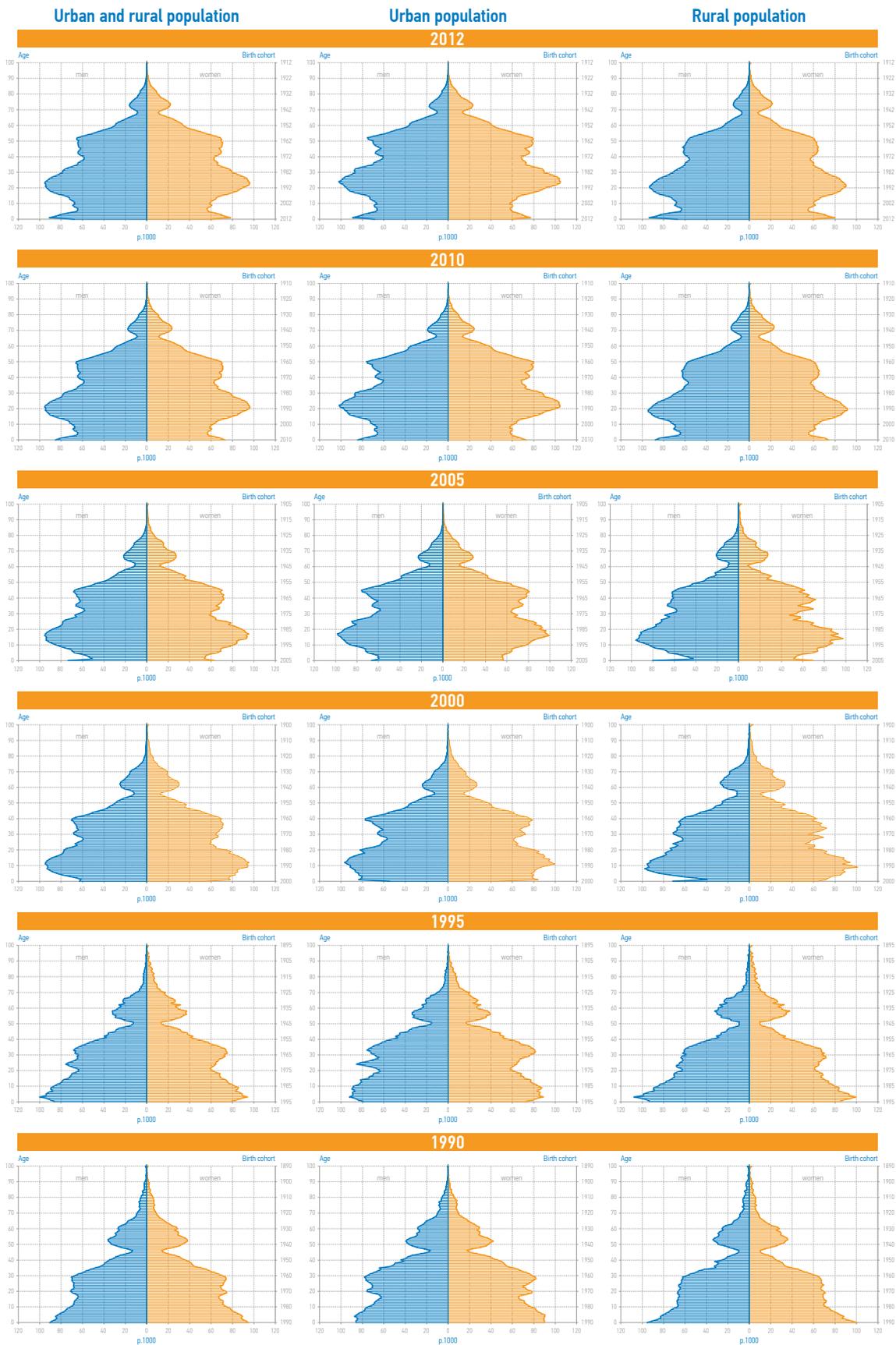
- From the early 20th century until now Azerbaijan's demographic development has been characterised by very rapid population growth rates.
- Rapid population growth is an important attribute of the geopolitical status of Azerbaijan and has transformed it from 'one among equals' into the most populous country of Transcaucasia greatly outnumbering its neighbours in region.
- Rapid population growth of Azerbaijan in the 20th century was determined by demographic transition when the mortality rate was falling while concurrently the fertility rate was rising.
- Population growth in Azerbaijan was and continues to be ensured mainly (and almost exclusively) by the excess of the number of births over the number of deaths; while the impact of external migration on the change in the population size in Azerbaijan is insignificant.
- The level of urbanisation in Azerbaijan is not high. Nearly half the population resides in rural areas. The natural increase in the size of the rural population is 20% higher than the urban. However, the comparable size of the urban and rural populations of Azerbaijan is maintained by migration from rural to urban areas.
- The age structure of Azerbaijan is rather young: in 2009, the mean age was about 30, with half the population under the age of 29. As the demographic ageing process continues, by the middle of the 21st century half of Azerbaijan's population will be above 40.
- Over the past 40 years the age structure of Azerbaijan's population has been experiencing a period of 'demographic dividend' with fertility falling and the demographic burden of the working-age population progressively declining. This period is drawing to an end, and from the mid-2010s the ageing of Azerbaijan's population will be accompanied by a wave-like increase of dependency ratios.
- Until late 21st century the dependency ratio will remain fairly moderate not exceeding 90 people of non-working ages per 100 of working age, provided the retirement age remains at 60 years for women and 63 years for men.
- From the early 21st century the size of the working age population (20-59 years for women and 20-62 for men) has increased by nearly 1.5 million people, generating a demand for about 110,000 new jobs annually. From the mid-2010s this trend of steady growth will be replaced by fluctuations in the size of the labour force within a range of +/- 40,000 people per year.
- Substitution of generations in the labour market reached its critical level in 2005-2010, when an average of five people reaching the age of 20 entered the labour market per year to replace only one person of retirement age. This high labour force substitution is projected to gradually decline, bringing the balance of the substitution of generations in the labour market to nearly zero by 2020.
- Nevertheless, the labour market will experience some tension in the next decades because the number of people aged 18 to 20 will range from 350,000 to 500,000 per year.
- Following the general trend of population ageing, from the early 21st century the mean age of the working-age population in Azerbaijan has been increasing by a year every five years. The trend will maintain its pace for another decade, raising the mean age of the working-age population to 40 years, and will slow down thereafter.
- Despite the ageing of the working-age population the balance between the younger and older generations in the labour market is still in favour of young people. Presently, half the working-age men are below 38 and half the working-age women are below 37.
- The labour market will reach equilibrium between the younger and older generations by the late 2020s for women and by the mid-2030s for men (when half the working-age population will be above the age representing the mid-point between retirement age and the mean age of entry into the labour market, generally 20 years of age).
- At the beginning of the 21st century, the proportion and number of people of retirement and elderly age was stable. However, from 2010, both indicators start to grow quite rapidly, and in the nearest five years the annual increase in the number of people reaching retirement age will be 60,000 – 70,000.

- There are currently 98 men per 100 women in Azerbaijan. Although there are more male children and young men (aged 20 or below), beyond the age of 20 women outnumber men and this difference progressively increasing with age (in 2009, there were 64 men per 100 women of retirement age).
- Due to the declining mortality and the narrowing gap between male and female life expectancy at birth, the proportion of men has begun to increase in nearly all age groups. This trend towards the masculinisation of the population is universal and represents a shift towards greater gender parity in demographic terms.
- Over the past two decades, the proportion of boys among live births has been growing. The current sex ratio at birth is 116 boys per 100 girls while “the norm” is considered to be 105-106 boys per 100 girls. The reasons, mechanism and consequences of this unusual phenomenon, which has also been observed in other countries of Transcaucasia should be the subject of a separate study.
- Although the increasing proportion of boys among newborns contributes to the further masculinisation of Azerbaijan’s population, the consequences are mitigated by the gap between male and female mortality.
- In the 21st century the demographic dynamics of Azerbaijan will fluctuate due to the distortion of the age structure caused by the historic events of the 20th century. The most significant demographic wave in Azerbaijan has the amplitude of about 27 years. It was shaped by the cumulative effects of the World War I and II and further accentuated by the rising fertility rate in late 1990s.
- In the course of the demographic development of the second half of the 20th century and early 21st century, the age structure of Azerbaijan produced a strong growth potential which will enable a 30% increase in the population size even if the fertility rate drops down to basic generation replacement¹¹.
- Although Azerbaijan has an ethnically diverse population with over 80 ethnic groups, 9 out of 10 residents of Azerbaijan identify themselves as ethnic Azerbaijanis, and 99% claim proficiency in the Azerbaijani language. Over the past decade the share of all major ethnic minorities of Azerbaijan, except Talysh and Tats, has been shrinking.
- The major ethnic groups in Azerbaijan have a strong sense of cultural identity and the majority consider their ethnic language to be their mother tongue. The exceptions are the Talyshes and Kurds as only 42.5% and 51.2% respectively consider the Talysh and Kurdish languages as their mother tongue. Nearly all indigenous ethnic minorities are bilingual and well assimilated with the Azerbaijani majority, while ‘non-Caucasian’ ethnic minorities such as Ukrainians, Tatars and Russians seem to be isolated to a certain degree, because the majority does not speak Azerbaijani.

¹¹ The net reproduction rate = 1

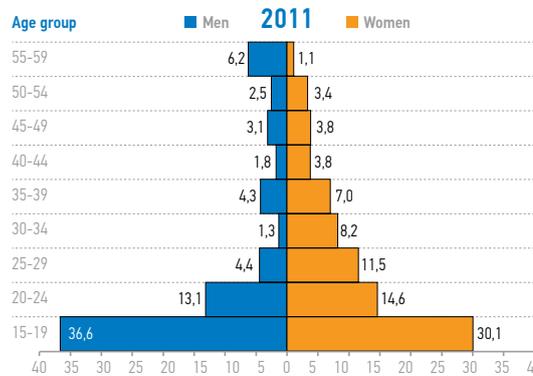
Annex 1

Evolution of age and sex structure of the population of Azerbaijan in 1990 – 2012

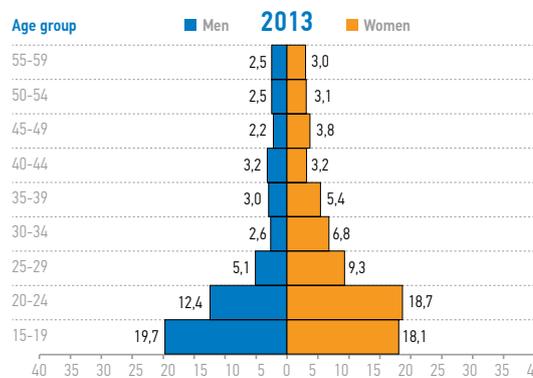
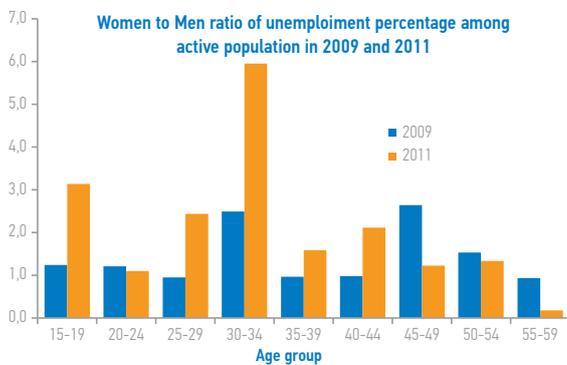


Annex 2

Number of unemployed per 100 employed by age (economically active population)



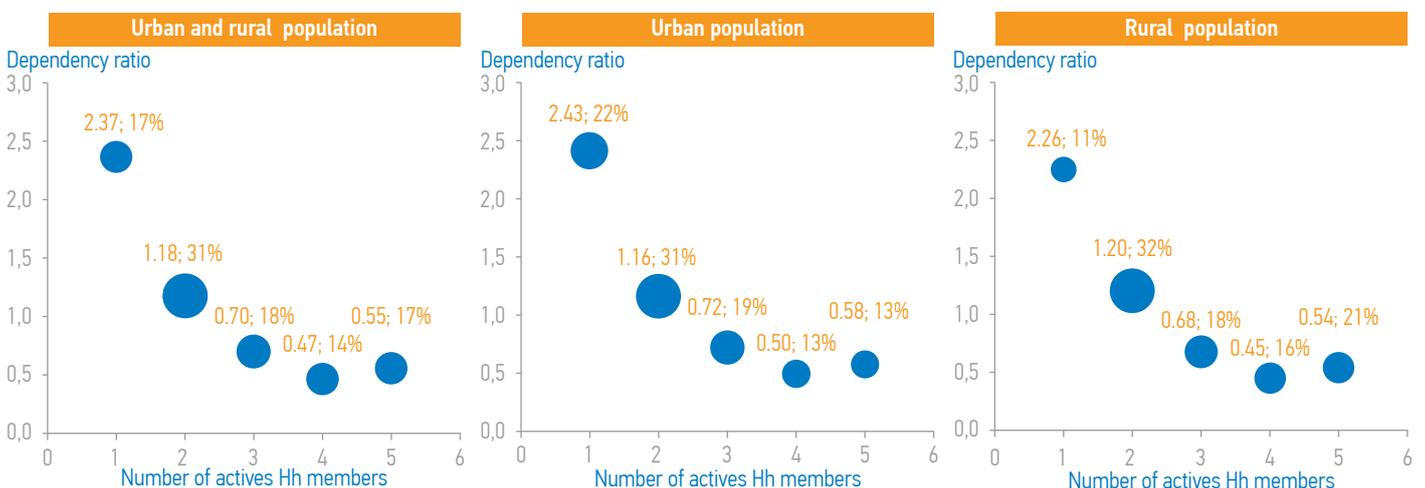
It is hard to explain the dramatic shifts in unemployment in 2011, when the proportion of unemployed among the age group of 20 and below tripled for men and doubled for women while decreasing in other age groups. The relative unemployment risk for women aged 25 to 44 also saw a drastic increase (by 2.5 times in the age group 25-35).



In 2009, the economically active population aged 20 years and below amounted to 40,200 men and 84,400 women; in 2011, it made 50,000 men and 70,500 women, whereas in 2013 there were only 46,400 economically active women and 50,000 economically active men.

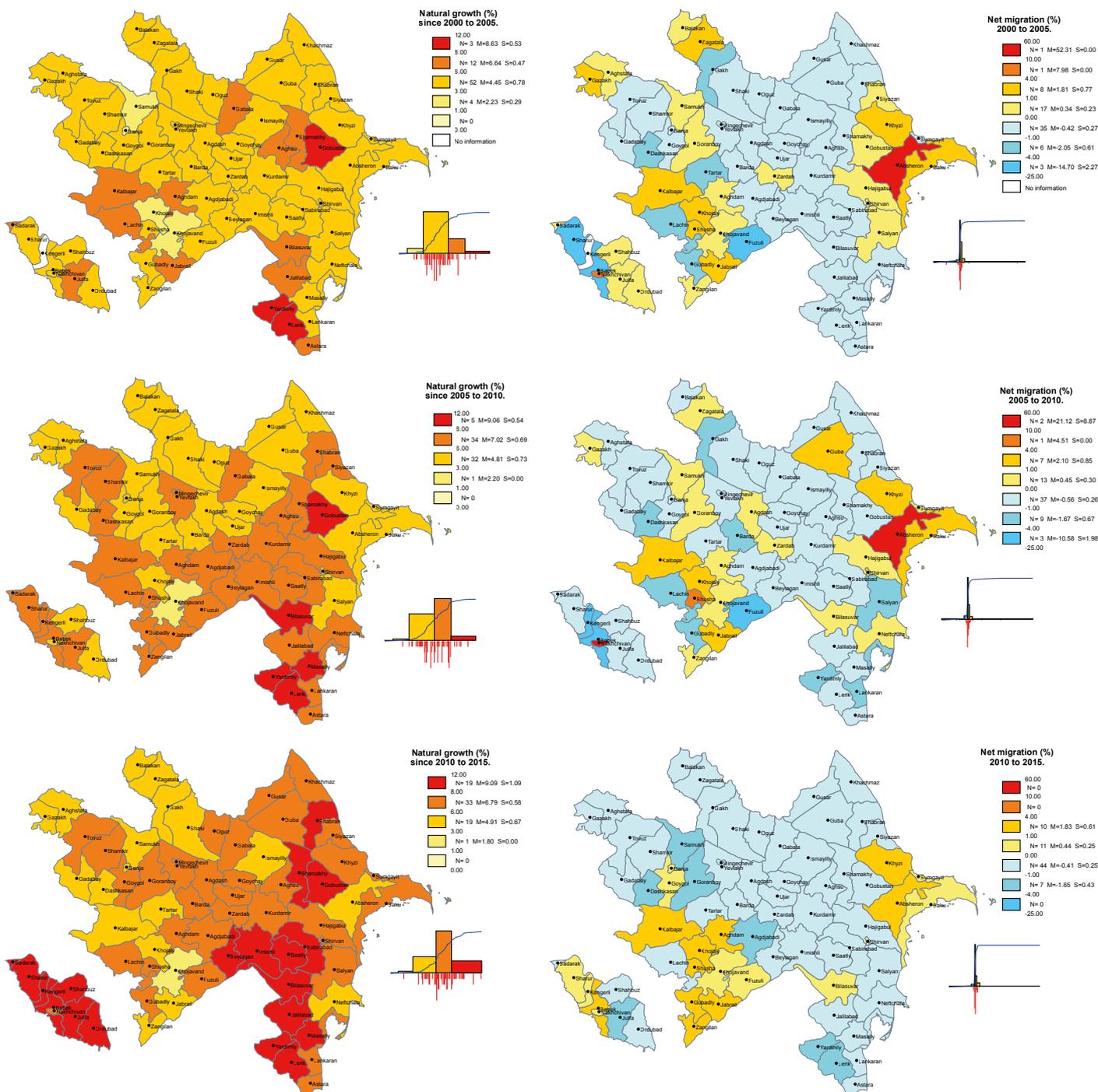
Annex 3

Economic sustainability of living arrangement : distribution of population (circle size) by number of active household members and dependency ratio in household.



Annex 4

Natural (on the left) and migration – related increase of the population by administrative regions of Azerbaijan 2000-2004, 2005-2009 and 2010-2014





2

FAMILY
AND FERTILITY
IN AZERBAIJAN

2.1 Family

2.1.1. Theoretical approaches to the demographic analysis of the family

The term 'family' is most commonly defined as a group of people related by marriage or by blood by an ascending or descending line. This definition clearly emphasises the importance of 'family' as a social institution and as a key element of any socio-demographic system. Historically, a family represents a basic unit of society that ensures the reproduction of the population (child birth), inter-generational continuity (upbringing children, taking care of the elderly) and meets basic societal needs (feeding, recreation, and socialisation).

A person lives in a family from the cradle to the grave, with the only change being family status and role. First, he (she) is a child, then a husband (or a wife), later a parent, father or mother, and finally a grandparent. Any deviation from the individual life pattern is viewed as atypical and arouses a feeling of regret, sympathy or concern among the people around. Such attitude is manifested towards children without parents (orphans), adult people who have never been married (old bachelor, old maid), the widowed, the divorced and the single elderly. Although the individual family status of a person changes with age and demographic events in the life of a family, the family structure as a whole remains practically unchanged as it always includes children, parents, and grandparents as long as the life expectancy for the specified period allows.

Marriage and childbirth are the most important events in family life. Historically, marriage, regardless of its form, is a process of interaction between two families, in which one loses its member and another one gains. Most often, the marriages are virilocal¹ whereby a woman leaves her parents' family to settle in her husband's family. As a rule, a family is patrilineal (descending through the male line), and a married woman often takes her husband's surname or adds her husband's surname to her maiden name. Up until now matrimony represents the only universally acceptable social arrangement and prerequisite for intimate relationships between a man and a woman. As children bear the generic legacy of both their father's and mother's families, the rules, norms and traditions of choosing a partner play a role in the social mechanisms that provide for both the genetic diversity and genetic stability of a population.

In agrarian, pre-industrial societies, a family (as the basic production unit) was self-sufficient and to some extent economically independent and the economic

efficiency of the family to a large extent depended on its size and demographic structure.

Notwithstanding its stability and self-sufficiency, the family has always been closely integrated into the broader social structure. Originally through tradition and, later on, through state institutions, the rules of marriage, the mutual responsibilities of parents and children, and property and legal relations between the spouses have been regulated and enforced.

The rapid development of industry brought about drastic changes that affected the functions of the family and led to changes in family size and structure, and as a result, transformed the family structure of society. Firstly, the economic function of the family disappeared. Men no longer took part in doing family work and cash contributions replaced their in-kind contribution to the family economy. Secondly, many women became more engaged in paid labour, and by the end of the 20th century an almost equal number of men and women were working outside the family. Mechanisation and the outsourcing of many family functions helped many cope with the challenges of combining family responsibilities with paid work outside the home. Certain family functions altered with the appearance of household appliances (refrigerators, modern gas or electric cookers, washing machines) and children began receiving care in specialised institutions (nurseries, kindergartens, schools), where they spent most of the day. The development of the old-age retirement system weakened the traditional intra-family and inter-generational support and material wellbeing in old age began to depend more on work record and professional success rather than on the number of children and optimal family structure. The difference in gender roles began to lose its significance and the family and the family home have gradually turned into a place of affectionate interaction between spouses, parents and children.

The combination of these phenomena and developments produced a dramatic change in the social institution of the family across all developed, industrialised countries. The changes were evident in the declining number of children per family, thus, declining fertility; by children moving out of the parental home at an earlier age; in marriages at a later age; in the widespread alternative forms of unions or rather, sexual partner relations; and

¹ From the Latin 'virilis', meaning 'of a man'.

the destabilisation of matrimonial relations and the growing number of divorces.

Some of these phenomena are well researched and their analysis is based on well-developed methodology and diverse statistical data, in particular fertility and, to some extent, first marriages. Less research has been conducted on the disintegration of marriages and divorce rates, as the statistical data related to the duration of the disintegrated marriages and the profile of spouses is scarce or unavailable.

Until recently, the family was one of the most stable social institutions and did not arouse much interest or concern. Indeed, the dynamics of family and family structure is the least studied area of demographic research, both in terms of methodology and data. Meanwhile fertility, being the result of family activity, has always been and is still being studied, in methodological terms, in isolation from the family.

2.1.2. Data and methodology for the analysis of family size and structure

The population census is the main source of data on the composition of families and households, the structure of the population by age and marriage, the number of children born and currently living at the time of the census. The last census of the Soviet period was in 1989 and, since independence, Azerbaijan has conducted two censuses, in 1999 and 2009. Data from the 1989 census was published in full, while the available data from the 1999 and 2009 censuses only includes population distribution by age and by marital status, the distribution of women by age and number of children regardless of marital status, and the distribution of households by number of members and number of minors (children under 18).

In addition to the population census, information on the structure of the family can be taken from sample demographic surveys that often contain questions on the composition of the household, and the relationship and age of the household members. In 2006, a Demographic and Health Survey² was carried out in Azerbaijan, with a representative sampling at the national level as well as a disaggregation between urban and rural population.

The survey contained questions about the sex and age of all members of the household and the relationship of each member to the person who was indicated as the head of the household. Primary data from this survey is publicly available.

The data of the population census and the sample survey enable to trace the dynamics of the family structures of Azerbaijan's population and, more importantly, to compare the situation of 1989 (before independence) with that of 2009, twenty years after. Moreover, the data serves as a basis for assessing additional characteristics in the family structure of Azerbaijan's population in 2006. Although the latest population census was conducted five years ago and the Demographic and Health Survey used for this analysis was conducted eight years ago, their results are still valid. This is due to the fact that not only is the evolution of the family structure highly inert, but it is also much less subject to fluctuations than fertility and mortality.

It is worthwhile to recall that the soviet population censuses, including the one of 1989, used a family as statistical registration unit and defined it as a group of relatives that reside together and jointly manage the household affairs. A family could consist of two or more people. Single member households were not considered as a family unit and were not included in calculations of, for example, mean family size. From the 1939 census, a new category was introduced – family member residing separately – which referred to those residing separately from their relatives while maintaining material relations with them.³

The internationally recommended approach to conducting population censuses, as opposed to the soviet one, uses a household as a registration unit and defines it as a group of people that share a housing unit and jointly manage household affairs. In the early 1990s the countries of the Former Soviet Union began using this approach for their population and housing censuses, using the household as an observation unit. However, since targeted research has not been undertaken to ascertain the extent these changes have affected the data, any comparison of data on the size and structure of families and households during the Soviet and post-Soviet period should be treated with caution.

² The Demographic and Health Survey, hereinafter referred to as AzDHS-2006, is an international programme that assists developing countries and countries in transition to collect data on population and health. Its methodology was developed by MeasureDHS. In 2006 this survey was carried out in Azerbaijan by the State Statistics Committee with technical support from Macro International Inc (USAID) and UNICEF. In 2011, the Ministry of Health of the Republic of Azerbaijan implemented another Demographic and Health Survey on its own but the data was not yet available for independent researchers and experts at the time of this research.

³ This category was mostly likely taken into account in the calculation of the mean family size, although we failed to find the precise description of the algorithm used for this calculation.

Figure 2.1
Number of families and average annual growth rate of the number of families in Azerbaijan based on population censuses data from 1959 - 2009

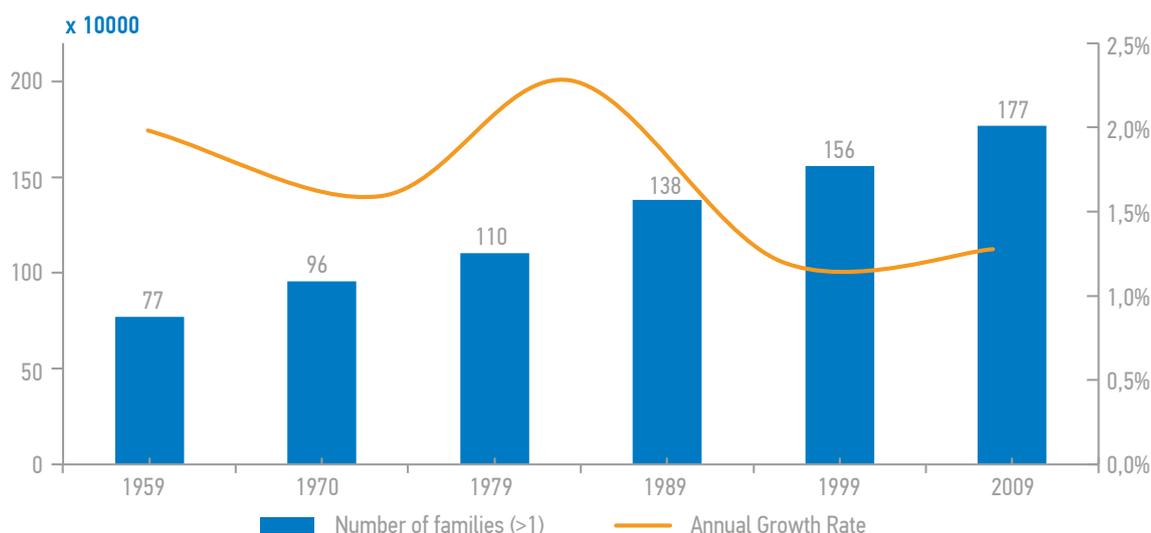


Figure 2.1

Figure 2.2
Percentage of population living in a family of two or more people, according to the data of population censuses and AzDHS 2006.

2.1.3 Dynamics of the number of families and single persons

According to population census data from the Soviet period, the number of families (two or more persons) in Azerbaijan increased from 771,000 in 1959 to 1,381,000 in 1989, (by 1.8 times). Indeed, from 1959 to 1979 the number of families increased by an average of 1.8% annually while the average annual population growth rate was 2.5% (Figure 2.1). This implies that this period was characterised by an increase in the average family size, other conditions being equal.

Between 1979 and 1989 the number of families increased on average by up to 2.3% annually, while the population growth rate decreased to 1.5%, suggesting that the mean family size was decreasing. A slowing of the family growth rate occurred between 1989 and 1999 (1.2%), while the population growth rate increased by 1.5%, however, between the censuses of 1999 and 2009, these two growth rates began to coincide and became almost identical.

An overwhelming majority of Azerbaijani population lives in a family unit consisting of two or more persons (Figure 2.2). In 1959, 2.6% of the population lived alone and this number has been progressively declining since then, decreasing from 2.4% to 1.4% between 1970 and 2009. This almost coincided with the estimates made on the basis of the AzDHS – 2006 data, which estimated that in 2006, share of single persons constituted around 1.5% of the population. At the same time, the absolute number of single persons increased from 95,000 in 1959 to 145,000 in 1979, but then began gradually decreasing to 138,000 (1989), to 130,000 (1999) and 128,000 (2009).

Additional analysis is required to ascertain the reason for this decrease, however one reason could be the economic hardships of the transition period that forced adult children to continue living with their parents until they married. It may also be partly attributed to the specifics of the age structure of the population of Azerbaijan.

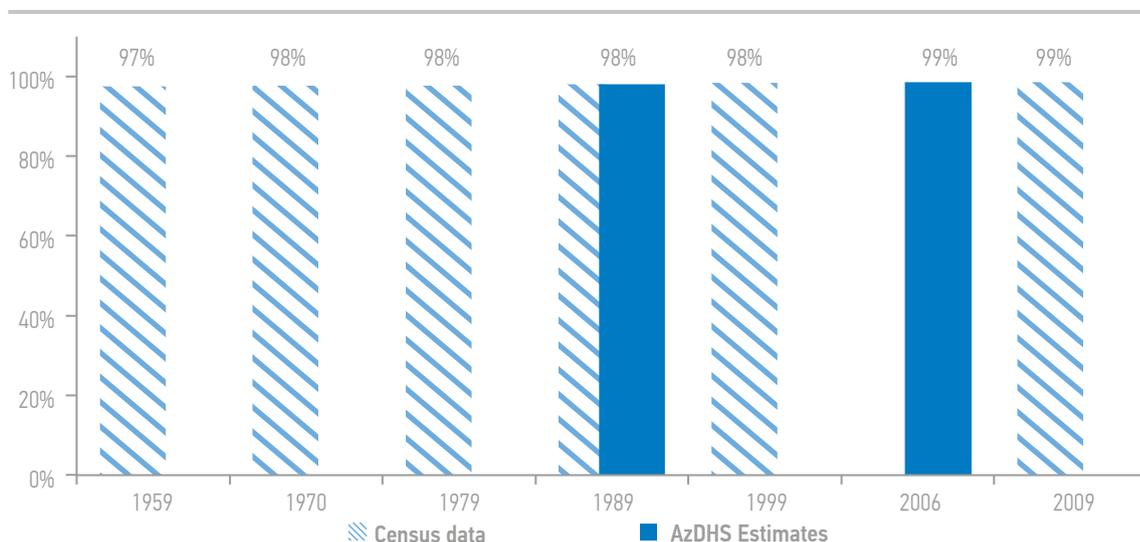


Figure 2.2

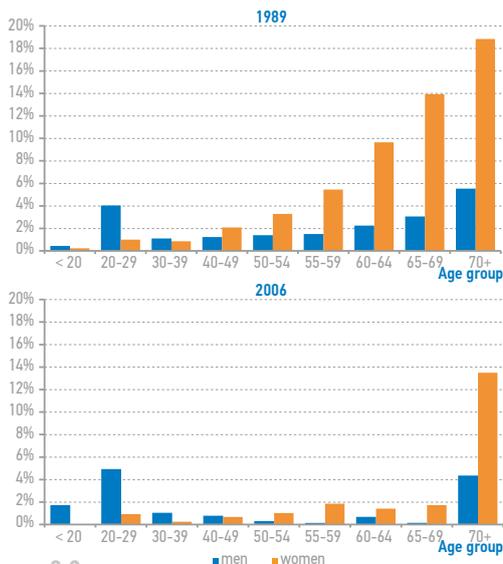


Figure 2.3

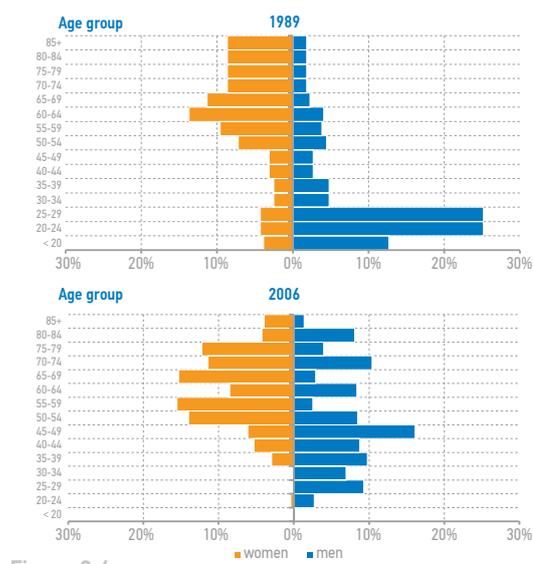


Figure 2.4

Figure 2.3
Percentage of people living alone among men and women by age groups in 1989 and 2006 (extracted from 1989 census data and estimates based on the AzDHS-2006 data)

Figure 2.4
Distribution of alone persons among men and women by age groups in 1989 and 2006 (drawn from the data of the 1989 census and estimates on the basis of AzDHS-2006 data)

2.1.4 Gender and age aspects of singleness

The likelihood of living in a family differs for men and women, the young and the elderly. According to the 1989 population census, 60% of single persons were female and 40% male, whereas in 2006, according to the AzDHS-2006, the proportion of women living alone had increased to 68% while the proportion of men had decreased to 32%.⁴

Singleness is uncommon in Azerbaijan; data from the 1989 census recorded that 1.6% of men and 2.4% of women lived alone. Singleness is very rare among the young men and women, aged 16-20, while 5.6% of men over 70 and 4% of young people between 20-29 live alone (Figure 2.3). Less than 1% of women aged 20 to 39 live in single-member households, as young women are less likely to live alone than young men. However, in older age groups, this proportion has been progressively rising, from 2.1% (40-49 years of age) to 18% (70+). Thus, the singleness among women has been growing with age faster than among men.

Between 1989 and 2006 the number of men in young age group living alone has increased significantly: by 20% among the 20-29 year-old men while for men under 20 almost quadrupled. On the contrary, the number of men in the age group of 30-70 living alone has decreased. With increased age the number of men living alone fell (by 8% for 30-39 year olds and by 10 times for 50-59 year olds), suggesting that men were less likely to live alone between the ages of 30-69.

Apart from those aged 20-29, the number of women living alone became very low during this period, decreasing on average by 70% for 30-59 year olds and 90% for 60-69 year olds. Equally, the number of women aged 70+ living alone decreased from 18.8% to 13.4% (by 1.4 times) between 1989 and 2006. This may be attributable to the increase in male longevity, and therefore fewer widows

at those ages, or to a strengthening of inter-generational support and more inter-generational households.

Certain changes occurred in the age structure of men and women in single-member households in the period between 1989 and 2006 (Figure 2.4). In 1989, 60% of women living alone were aged over 60, 10% were aged 50-59 and only 17% were under the age of 30. In 2006, according to the AzDHS-2006, 56% of women and 35% of men in the single-member household category were aged over 60.

In 1989, the average age of men and women living in a family was 26 and 27.2 respectively whereas the average age of men and women living alone was 34.6 and 60.1 respectively.⁵ Every second single man was aged 20-29, 13% were under the age of 20 and 10% were aged 30-39.⁶

In 2006, according to AzDHS-2006 data, the average age of men and women living in a family was 29.8 and 31.9 respectively, an increase of 3.4 and 4.2 years from 1989. Male family members were ageing at the same rate as the total male population (by 3.4 years on average), whereas female family members were ageing faster (by 2.7 years).

Women living alone aged by 2.3 years on average, while the average age of single men increased by almost 20 years and made 51.7. Thus, if in 1989 on the average a single man was young and a single woman – elderly, in 2006 a single woman remained elderly while a single man was rather in mature age.

No information is available regarding whether or not those living alone have relatives or children and receive support from them if required. However, further research should be undertaken in this regard as the elderly and especially the elderly living alone represent one of the vulnerable groups of society.

⁴ The AzDHS-2006 survey covered over 30,000 people, but even this sizeable sampling is not sufficient to make a reliable analysis of the age distribution of single-member households, who are not differentiated by the categories of 'lonely person' and 'a family member living alone', as was the case in the Soviet-time censuses. It is caused by the fact that when the single-member households are distributed by sex and by 5-year interval age groups, the number of observations in each group barely exceeds 40 people.

⁵ The 1989 census data records the average age of those in the category of 'family members living alone' as 23 years for men and 43.2 for women.

⁶ In 1989, 86% of 'family members living alone' were male, of which 63% were under 20; 25% were aged between 20-29 and 10% were aged 30-39; only 3% were above 60. Meanwhile, 41% of women living alone were under the age of 30 and 16% were over 70. The category of 'family members living alone' was not used in the 1999 and 2009 censuses.

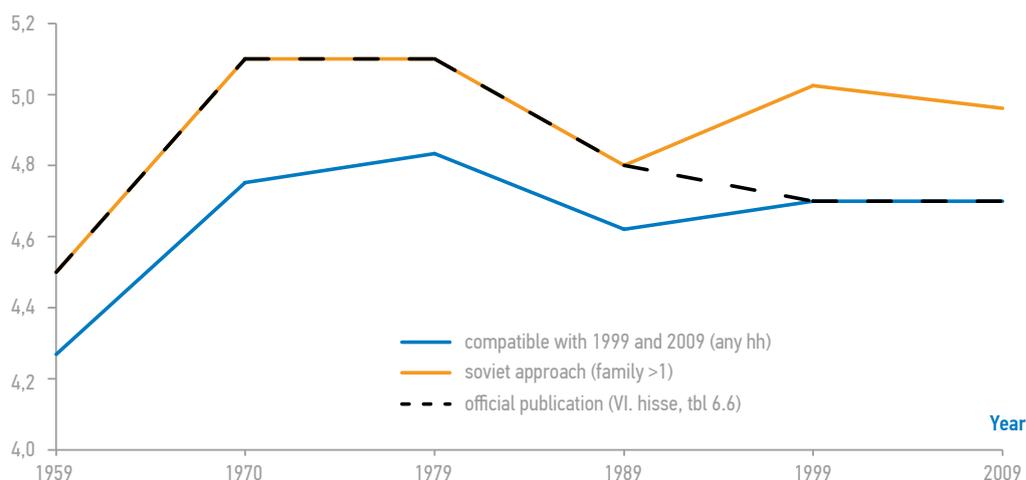


Figure 2.5

Figure 2.5
Dynamics of compatible mean size of family-household based on the population censuses data.

Figure 2.6
Distribution of family-households by size in a given year based on the national census of 1989 and AzDHS 2006.

⁷ See State Statistical Committee of the Republic of Azerbaijan, Demographic Indicators of Azerbaijan, official publication, statistical yearbook, Baku, 2013, p.340, Table 6.7

2.1.5 Size of a family-household

As noted earlier, censuses conducted during Soviet times categorised the ‘family’ as one unit and people living alone were classified not as a ‘family’ but as a ‘single-member households’. Given the definition and classification of families used in the Soviet times (Table 2.2, p. 77), in the majority of cases the family de-facto represented a household. The AzDHS-2006 survey used the household (home) as its primary selection unit and then clarified the relationship between the head of household and each person residing in the household. Among the more than 30,000 people living in 7,180 households in the sample study, only 21 had no family relationship with the head of the household. In other words, the definition of the household applied in the AzDHS-2006 survey was very similar to the definition of the family used in the 1989 census, and further in this analysis we will refer to them as family-household.

According to census data, in 1970 and 1979 the average family size was 5.1 people. In 1989 this decreased to 4.8, increasing to 5 people in 1999 and remained at this level in 2009. If single people (single-member households) are included in the calculation, the average size of the family-household decreases, but the overall trend in size does not change. In this case, the average household size in 1959 would have been 4.3 people, increasing in 1970 and 1979 to 4.8, decreasing in 1989 to 4.6 and in 1999 increasing to 4.7 and remaining at this number in 2009 (Figure 2.5). Although the calculation of comparable indicators is not complicated, it is often overlooked. This probably was the case with the official publication of data on the average household size, which create the wrong impression that the average size of households in Azerbaijan has been progressively declining since 1979.⁷

In 1959 most family-households consisted of (statistical mode) three people, whereas in 1970 family-households of four people became more widespread. Subsequent censuses also indicate that a four-person family-household is the most common. The Figure 2.6 shows that on one hand, there is a modal concentration of distribution of family-households by the number of members while on the other hand, the centre of gravity shifts towards the family-households of 5 persons. In 1970, the number of family-households consisting of four members was 14.2% and by 2009 it had increased to 24.5%. Concurrently, the proportion of family-households consisting of four and five members had risen from 27% to almost 45%. Since 1970 the number of households consisting of three people has remained close to 13%, as has the number of family-households consisting of six people, remaining at around 12% (except in 1989 when it reached 13.7%). Family-households with the lowest (one and two people) and the highest (seven or more people) number of co-residents, began to show a downward trend from 1989.

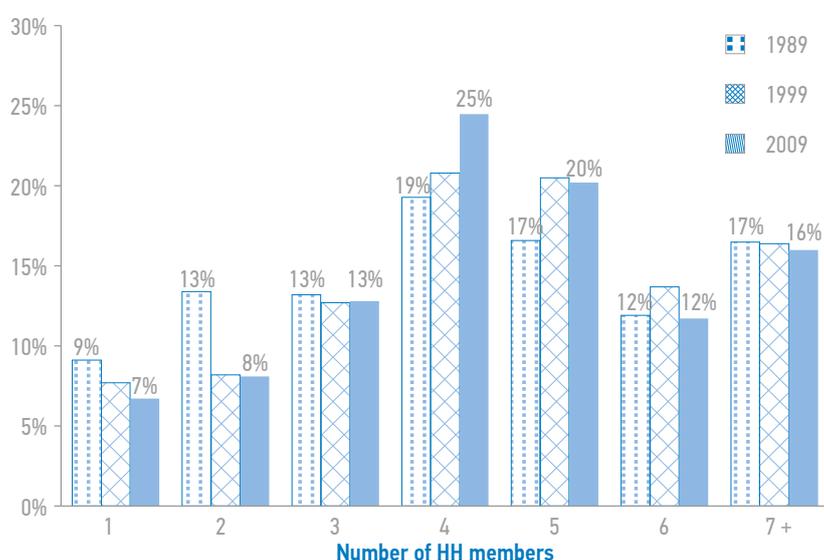


Figure 2.6

In the AzDHS-2006 survey, men were indicated as the head of household in 75% of cases in both urban and rural areas, thus adhering to the traditional 'virilocal' nature of marriage when a woman moves out of her parental house to live in the husband's household. Women were usually indicated as the head of household when no spouse was resident, which was found in 80% of cases. Men were indicated as the head of household in 98.3% of cases when he was a member of the household.

This gender shift is slightly less obvious in urban areas where women with no married couple are indicated as head of household in 77.2% of cases and in 2.2% of households where a married couple reside. In rural areas these indicators are 83.5% and 1.1% respectively. In general, the average size of female-headed households is smaller than those headed by a man: roughly by 1.1 people in urban areas and 0.8 people in rural areas (Table 2.1).

If single-member households are excluded from the calculations, the gap in the average size of the male-versus female-headed family-households decreases to 0.6 people in urban areas and 0.4 people in rural areas.

This difference is much less than one because the average number of children in a female-headed household with no resident spouse, is much higher than in male-headed households with no resident spouse.

The word 'children' could imply either 'the relationship between parents and descendants regardless of the age of the latter', or belonging to 'a certain age group' regardless of parent-offspring relationship. When analysing the structure of the family-household, 'children' refers to those sons and daughters of the head of household that reside in the family-household regardless of their age and family status. Hence, the estimate of the average number of children by status is an attribute that characterizes a family-household from the point of qualitative ratio between the generations. When the second definition 'a certain age group' is applied this can include nephews, nieces, brothers, sisters and other under-age (minors) relatives residing in the household. The estimated average number of children or other under-age (minors) members of the household in this category would be considered a characteristic of the demographic burden of care (dependency ratio).

Sex of the head of the household	Urban population	Rural population	Urban and rural population
Average size of Family Household (FHH)			
Men	4.2	4.8	4.4
Women	3.1	4.0	3.5
Both sexes	3.9	4.6	4.2
Average size of FHH excluding single-person FHH			
Men	4.3	4.8	4.5
Women	3.7	4.4	4.0
Both sexes	4.2	4.7	4.4
Average number of children by status of all ages the head of FHH has (without spouse and with spouse) *			
Men	1.81 (0.84 ; 1.91)	2.23 (1.59 ; 2.27)	1.98 (1.08 ; 2.06)
Women	1.44 (1.44 ; 1.47)	1.86 (1.85 ; 2.05)	1.61 (1.61 ; 1.63)
Both sexes	1.72 (1.30 ; 1.9)	2.14 (1.84 ; 2.27)	1.89 (1.50 ; 2.05)
Average number of children of all ages by status that the head of FHH with children has (without spouse and with spouse)*			
Men	2.15 (2.00 ; 2.16)	2.51 (2.25 ; 2.52)	2.30 (2.11 ; 2.31)
Women	1.99 (1.99 ; 2.02)	2.25 (2.25 ; 2.21)	2.10 (2.11 ; 2.02)
Both sexes	2.12 (1.99 ; 2.16)	2.45 (2.25 ; 2.52)	2.26 (2.11 ; 2.31)
Average number of under-age FHH members (under 15 years/under 18 years)			
Men	1.02/1.29	1.28/1.59	1.13/1.42
Women	0.62/0.83	1.22/1.45	0.87/1.08
Both sexes	0.92/1.18	1.26/1.56	1.06/1.33
Average number of under-age FHH members (under 15 years/under 18 years) in the FHHs that have children of this age			
Men	1.82/1.93	2.03/2.17	1.91/2.03
Women	1.69/1.81	2.11/2.18	1.9/2.00
Both sexes	1.79/1.91	2.05/2.17	1.91/2.03

* in the brackets first comes the average number of children of the head of FHH without a spouse followed by an average number of children of the head of FHH with a spouse

Table 2.1

Table 2.1
Mean size of the family-household in the urban and rural population and average number of children of the head of household depending on sex and marital status (estimates based on AzDHS-2006 data)

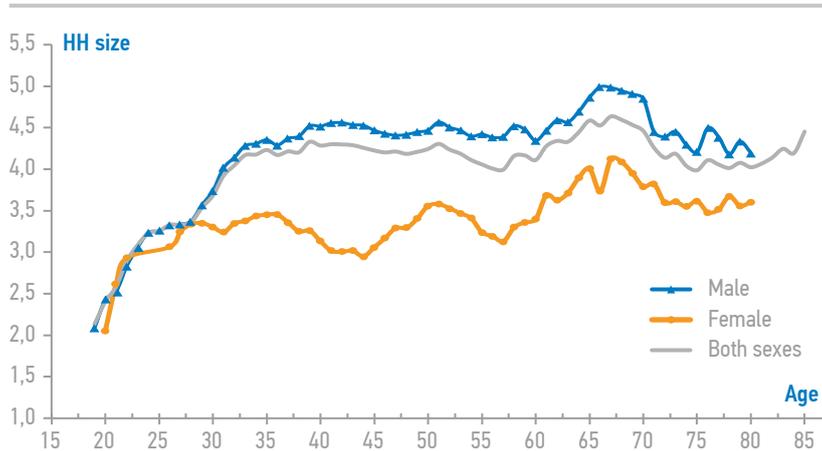


Figure 2.7

Figure 2.7

Distribution of the average size of the family-household by age and sex of the head of the household (AzDHS 2006).

Figure 2.8

Mean number of children of the head of the household depending on its size (AzDHS-2006).

The estimates in Table 2.1 show that the average number of children by status in spouseless female-headed households was 1.61 versus 1.08 in spouseless male-headed households, whereas the average number of children in the male-headed family-households with a resident spouse is 2.06 versus 1.63 in female-headed households with a resident spouse. In other words, if a woman and not her husband is indicated as the head of a family-household, this means the existence of a problem that may affect the number of children the married couple has, with other variables remaining unchanged.

The difference in the average number of children by status between male and female-headed family-households is more obvious in urban than rural areas. The gap between the average number of children in male-headed family-households with and without spouse is more significant than that in female-headed family-households with or without spouse.

The average number of children under 15, regardless of their relationship to the head of the family, is 1.13 in male-headed households and 0.87 in female-headed households. The same indicators for children under 18 are 1.42 and 1.08 respectively. Based on these estimates an average family-household can be portrayed as a

* Publicly available official data only provides information on the distribution of households by number of children aged 18 and below, with the households with four or more children being the last category in this distribution. Hence, the average number of children below the age of 18 in households which have children of this age, should be no less than the estimated average, as if the number of children in the last category were four.

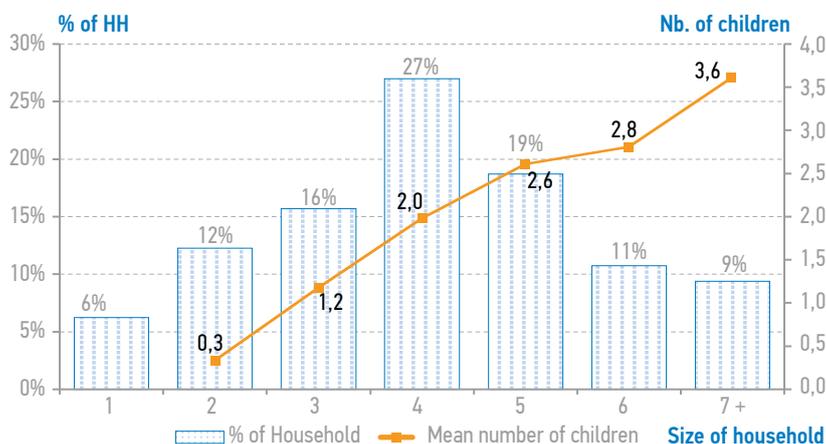


Figure 2.8

unit consisting of two adult members (1.9) and 1.27 children below the age of 15.

In addition, the Table 2.1 presents mean number of children aged below 15 and 18 in the family-households that have children of this age. Again, it is clear that female-headed family-households tend to have on average less children than male-headed family-households. These estimates appear consistent with the 2009 census data wherein the mean number of children below the age of 18, in households with children of this age, was 2.09 for the total population, 2.18 for rural areas and 2.01 for urban areas⁸.

The size of a family-household correlates with the age of the head of household. The average size of a family-household increases from 2 to 4.3 as its head reaches 40 years of age thereupon within the 20-year age interval the size of the family-household remains unchanged. Then, with the ageing of the head the average size of the family-household starts growing again. This trend is typical for male-headed family-households. The dynamics of the average size of female-headed households is very similar, the only difference being that the size stops increasing (at 3.5 people) when the female-head of household turns 35 (Figure 2.7).

The mean size of a family-household is determined by the parent-offspring ratio too. Most family-households in Azerbaijan seem to have an almost equal representation of generations irrespective of the household size (Figure 2.8).

Therefore it could be assumed that the predominant type of family in Azerbaijan appears to be 'nuclear', i.e., consisting of parents and their unmarried children. It is rather challenging to address this assumption despite the initial ease of perception. However, although 70% of Azerbaijanis live in nuclear families accounting for 64% of the total number of households, of these nuclear families 73% have a household head aged under 55, and 40% of family-households with a head aged above 60 also have married children. Thus, the older the head of the family-household, the higher the proportion of the multi-generational extended stem families (Figure 2.9).

This increase in the number of households where the household head is older than 60, and where extended families also reside, may be related to the respect given to the eldest member of the family (and thus his given role as the head), although his adult unmarried children continue to reside with him. It may also relate to ownership of the dwelling itself, especially if occupied by the older head-of-household's extended family.

When the head of the family-household is aged between 40 and 60, the structure of the household can alter dramatically. At this age the adult children of the family head marry and daughters leave the parental family

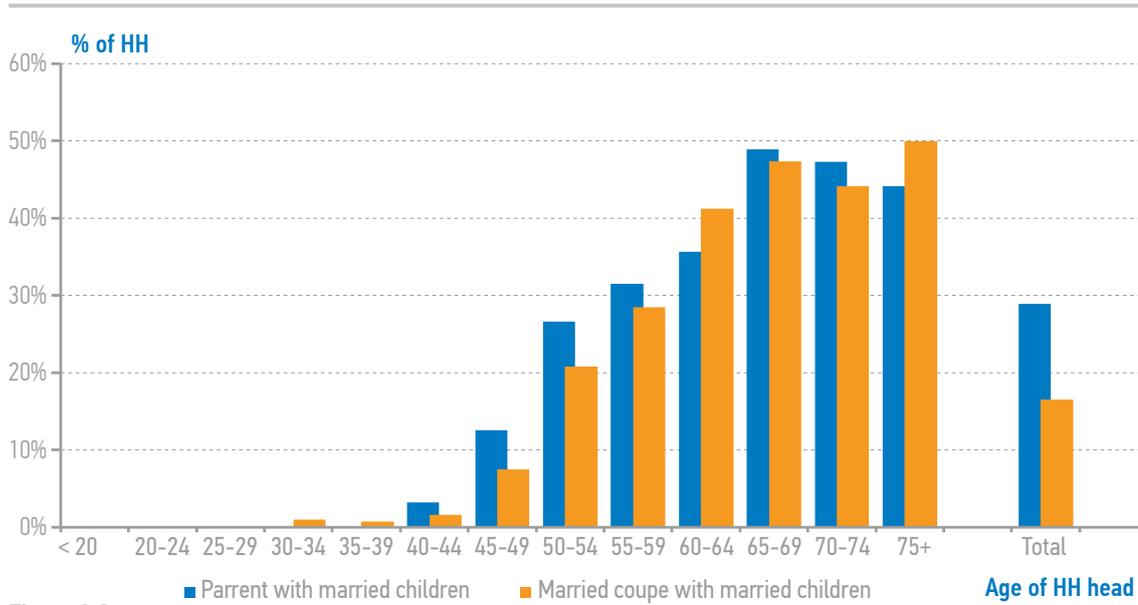


Figure 2.9
Percentage of families with married children of the head of the household depending on the age and marital status of the latter (AzDHS 2006).

Figure 2.10
Mean number of own children and children-in-law in family-households depending the age of the head of the household (DHS 2006).

Figure 2.9

while daughters-in-law arrive. In family-households headed by 50-54 years olds, 22.5% have at least one young married couple as residents (Figure 2.10).

When multi-generational families and extended families all live under one roof, it presents the comfortable situation of being surrounded by relatives, or kin. According to AzDHS-2006 data, the average size of this type of family-household was 5.02 people (including ego), and if people with no kin are excluded from the calculation, the mean size of this household increases to 5.08 people.⁹ Such insignificant difference is due to the small numbers of the single persons.

The average number of kin does not necessarily depend on age (Figure 2.11). Small children have most kinsfolk, with an average of five relatives per child under five, which probably includes grandparents and possibly unmarried brothers and sisters of young parents.

People aged 25-34, the majority of which are parents of young children, typically have several close relatives, while older people have about 3-4 close kin. The proportion of single people, or those with no close relatives, is very small in all ages except the most elderly. While there are very few (less than 1%) single people under the age of 45, this number increases with age and reaches a peak of 15% among those aged over 85 years.

While these large and closely-related families demonstrate the intergenerational solidarity and support an extended family can provide and thus constitute an important factor for the social protection of the most vulnerable population groups, such as children and the elderly, they could also be the result of the inability of young families to afford housing, resulting in the weak mobility of the population and crowded housing conditions.

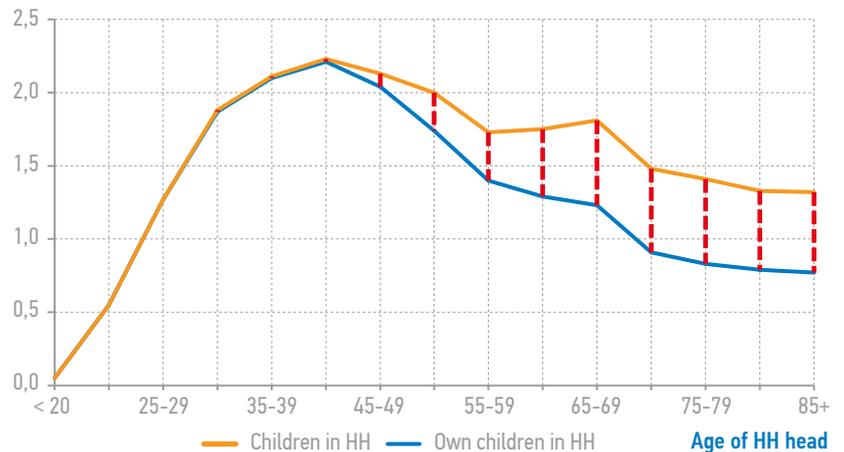


Figure 2.10

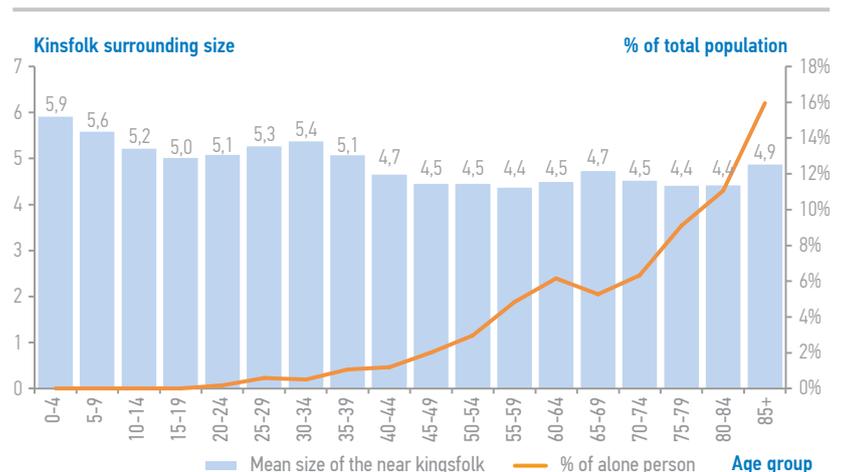


Figure 2.11

⁹ When we calculate the mean size of close kin we use an individual and not a family as a unit of observation. Let us bring two examples to demonstrate the calculations – an example of a family with two members and a family with six members. In this case the mean size of the family would be $(2 + 6)/2 = 4$, but every member of the family of two will have two close relatives including him/herself, while every member of the family of six will have six close relatives. Thus, mean kinsfolk size would equal $(2 \times 2 + 6 \times 6)/(2 + 6) = 40/8 = 5$.

Figure 2.11
Mean kinsfolk surrounding size (including ego) depending on age (left-hand scale) and percentage of the alone persons in the total population by age groups (right-hand scale), AzDHS-2006.

2.1.6. Typology of family-households

The mean size of the family-household can represent a variety of household types. Soviet typology classified families using the presence or absence of a married couple as the key criterion. Thus, all families were classified into three groups: 1) families with one married couple; 2) families with two or more married couples; and 3) families with one parent, including mothers and fathers with children. These groups were then divided into sub-groups depending on the presence of relatives of the ascending line (a spouse's parent) and the collateral line (other relatives except the parents).

The presence or absence of children was not a factor of family typology. As a result, a family consisting of a married couple without children and with a spouse's parent, his/her sister and adult daughter, and a married couple with a child, a spouse's parent and his/her sister were all classified as the same family type. This classification also covered a family with more than one married couple such as families of married brothers and both parents of one of the spouses. Despite these shortcomings, the Soviet typology were successfully used to assess changes in the composition and structure of families in Azerbaijan occurring during the post-Soviet period, especially given that the latest Soviet nation-wide census took place in 1989, i.e. just before the Republic of Azerbaijan re-gained independence.

As mentioned earlier, the AzDHS-2006 survey contains data on the relationship between the head of the household and the co-residents. This should allow us to classify family-households using the same categories as the Soviet typology and thus, to conduct a comparative analysis of the family structure of Azerbaijani population right before independence and 16 years later. However, the AzDHS-2006 survey does not always provide data on the relationship between family members that are not heads of the household, thus complicating any comparative analysis. In the majority of cases, the structure of the family-household can be defined in a clear-cut way regardless of who is named its head, based on the information on the marital status and relationship between the family-household members

and its head. However, the challenges are faced when a family-household comprises several brothers and sisters and nephews/nieces, or when the head of the family has grandchildren and several married children in residence which makes it virtually impossible to define whose child is whose. Such cases are, however, very rare and can be left out from the general classification.

The presence of a married couple in a family can be used as the principal criteria for classifying the family-household regardless of who is indicated as its head.¹⁰ The number of married couples in a family-household is strictly defined by the presence of (i) the head's spouse and (ii) the son and daughter-in-law, or daughter and son-in-law. Thus, a family-household headed by a woman with a resident son, daughter-in-law and granddaughter, will be classified as a family with a married couple with children and a spouse's parent, and not as a mother with children (son) and other relatives (grandchildren).

When constructing the typology of family-households irrespective of the status of its head, it is important to minimise the representation of the category 'other relatives' and, vice versa, to maximise the representation of the most vital relationships such as parents-children and husband-wife. Thus, a family-household headed by a woman with a daughter and grandchildren but without a son-in-law, falls into the category of 'a mother with children and a parent' and not into the category 'a mother (head) with children (daughter) and other relatives (grandchildren)'.

All family-households can be classified in four categories: (1) family-households with no married couple, parents or children, with either one member, or members such as an aunt and a nephew, or two brothers, or a grandmother and a grandchild, etc.; (2) family-households with one married couple, children, parents and other relatives (the largest category); (3) family-households with two or more married couples; (4) family-households with no married couple but a parent with children. Families where one of the spouses is 'absent' comprise a mother with children and a father with children. Considering that a married couple, with or without children, is defined as a 'nucleus', the family-households of the first category could be referred as 'non-nuclear family', the family-households of the second and third categories – as a 'mononuclear' and 'multinuclear', respectively. The fourth category consists from the family-households with 'deformed' or phantom nucleus.

The structure of the main types of family-household showed no significant change between 1989 and 2006 (Figure 2.12), with almost two-thirds of family-households in Azerbaijan being mononuclear. In 2006, polynuclear households (12%) and deformed nuclear

Figure 2.12
Main types of the family-households in Azerbaijan in 1989 and 2006. Estimates based on the data of the population census and AzDHS-2006.

¹⁰ One should distinguish between the family structure of the household and the family status of the person indicated as the head of the household. 74% of family-households headed by an unmarried person with children, have married children.

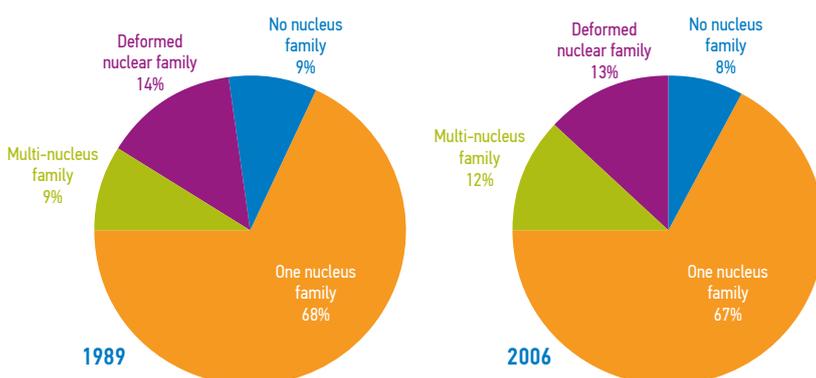


Figure 2.12

households (13%) were almost equally represented, thus, compared to 1989, the share of deformed nuclear families has declined slightly whereas the share of the multinuclear families has increased. An insignificant decrease from 9%-8% was also found in of family-households without a couple and parent-child relations.

Any in-depth analysis of the family structure of the population would require more detailed classifications that would include the presence of children, parents and other relatives of the nuclear couple as well as the number of generations in a family-household. If these additional filters were applied, family-households could be divided into 33 basic categories (Annex 1) that could be aggregated depending on the purpose of the analysis. In particular, when analysing the changes in the family structure of Azerbaijan's population between 1989 and 2006 it would be possible to define categories comparable to those used in the national censuses of the Soviet period.

The AZDHS-2006 data revealed that although changes in the distribution of most family types between 1989 and 2006 are statistically significant (marked in bold, Table 2.2), no fundamental changes in the structure of the family-household typology occurred. The nuclear family has remained the most common type, despite declining from 60%-53% and reducing in size from 4.4 to 3.9 people on average. Of these nuclear families, 86% were couples with children, naturally enough as men and women in Azerbaijan get married to have children and the period of 'childlessness' is rather short.

The number of polynuclear families (two or more couples) increased from 10%-13% while their mean size reduced from 8 to 6.6 people.

The share of families consisting of a married couple with or without children and with one of the parents almost doubled, from 5.8%-10.3% while the mean size of such families remained unchanged.

On the contrary, the share of families comprising a married couple and other relatives reduced from 9%-7.5% whereas the mean size only changed from 5.9 to 5.7 people. It should be noted that in addition to other relatives, 37% of these families also had a spouse's parent living with them.

Deformed nuclear families, consisting of a mother with children, increased from 9%-9.7% though the mean size only increased slightly (2.9 to 3 people). The share of families where the mother with children lives with one of the parents, either her own or her spouse's, has increased from 1.2%-1.7%, with the mean size remaining constant. The share of families consisting of a father with children has remained very small while the mean size has reduced from 3.1 to 2.6 people. However, the mean size of families consisting of a father with children and one of the parents has increased from 3.7-3.8 to 4.7 people, although this family type is not common 0.2% in 1989 and 0.1% in 2006.

The comparative analysis of family structure and size in 1989 and 2006 identified three trends. Firstly, the

Table 2.2
Percentage and average size of different type of family-households by the Census 1989 and AzDHS-2006 data

Family types used in the population census of soviet period	Census 1989		AzDHS-2006			
	% of all families	Average size	% of all families	Average size : mean ± standard error		
				All members	De jure	De facto
All families (single person excluded)	100%	4.80	100%	4.40±0.021	4.34±0.021	4.32±0.021
Married couple with or without children	59.7%	4.40	53.2%	3.89±0.019	3.88±0.019	3.82±0.02
Married couple with or without children, with a spouse's parent	5.8%	5.50	10.3%	5.43±0.046	5.39±0.046	5.29±0.048
Married couple with or without children, with (or without) a spouse's parent, and with other relatives	9.2%	5.90	7.5%	5.35±0.085	5.06±0.089	5.28±0.085
Two or more married couples with or without children, with (or without) a spouse's parent, and with (or without) other relatives	9.9%	8.00	13.1%	6.63±0.062	6.54±0.063	6.48±0.064
Mother with children	9.1%	3.00	9.7%*	2.86±0.036	2.83±0.037	2.82±0.036
Father with children	1.3%	3.10	0.7%	2.60±0.114	2.6±0.114	2.59±0.114
Mother with children, with one of the mother's (father's) parents	1.2%	3.80	1.7%	3.83±0.084	3.72±0.1	3.74±0.077
Father with children, with one of the father's (mother's) parents	0.2%	3.70	0.1%*	4.11±0.582	4.11±0.582	3.87±0.693
Other families	3.7%	3.60	3.7%*	3.73±0.106	3.43±0.118	3.64±0.11

Table 2.2

* - not significant

mean family size has decreased, probably due to a decline in fertility. This decrease is most pronounced in the family categories such as 'a married couple with and without children', 'mother with children' and 'father with children', i.e. such families whose size is mainly dependent on the number of children. Secondly, there is a trend towards the spread of the complex families (two or more married couples) and extended families (including other relatives and a parent of one of the spouses). The share of these families has increased from 25%-30% between 1989 and 2006, meaning that a greater proportion of the population lives in multi-generational families. Thirdly – the distribution of families with children and one of the parent has remained constant, though decreasing slightly from 17.2%-15.9%.

The two latter trends are not consistent with those observed in developed countries over the past decades

where a decrease in fertility was reflected in a decline in the mean size of families and that was accompanied by the virtual disappearance multi-generational and complex families. This is going on against a background of the family cycle transformations when adult children began leaving the parental home at an earlier age, young couples began to have children later and single-parent families became more common.

A more in-depth analysis of the structure and composition of family-households, which takes into account marriage and parenthood (Figure 2.13), highlights the important role that fertility plays in forming of a modern Azerbaijani family.

According to the AzDHS-2006 data, 65% of mononuclear families are married couples with their children, and 21% are married couples with their children and other relatives, while 14% of these are married couples with children and a parent. The proportion of married couples without children is just over 10% and that of married couples without children but with a spouse's parent and/or other relatives is 4%.

About 12% of all family-households in Azerbaijan are multinuclear, (comprising two or more married couples). The majority (89%) are what is referred to as 'stem families' where two married couples belong to two consecutive generations and are directly related by the descending line. Frequently, these are families consisting of three generations, i.e. unmarried children, their parents and parents' parents. In some cases, the families also include other members of the middle generation, for example, parents' unmarried brothers and sisters.

Of the 13% of deformed nuclear households, (single-parent families) the overwhelming majority are single-mothers with children (9%) or mothers with children and other relatives (3%). Deformed nuclear households where the father is the single parent are very rare in Azerbaijan constituting less than 1% of the total number of family-households.

90% of the two latter categories are female-headed households (Figure 2.14) and it is rare that a woman is the head-of-household in a nuclear family (married couple and children).

In mononuclear families (with or without children but with other relatives including parents), the likelihood of a woman being the head of household is much higher (35-36% of cases). This fact is not necessarily representative of an increase in gender equality in these families but is rather an illustration of the respect given to the older generation and thus the female head-of-household would be, for example, a husband's mother.

Figure 2.13
Distribution of family-households in Azerbaijan by classes and types, 2006. Estimates based on AzDHS-2006 data.

Figure 2.14
Correlation between the type of the family-household and sex of the head of the household (AzDHS-2006).

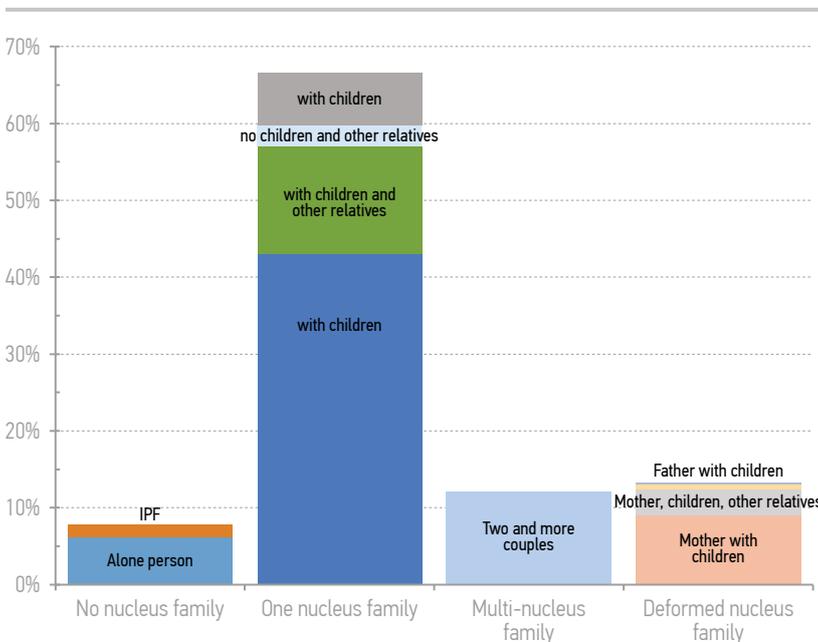


Figure 2.13

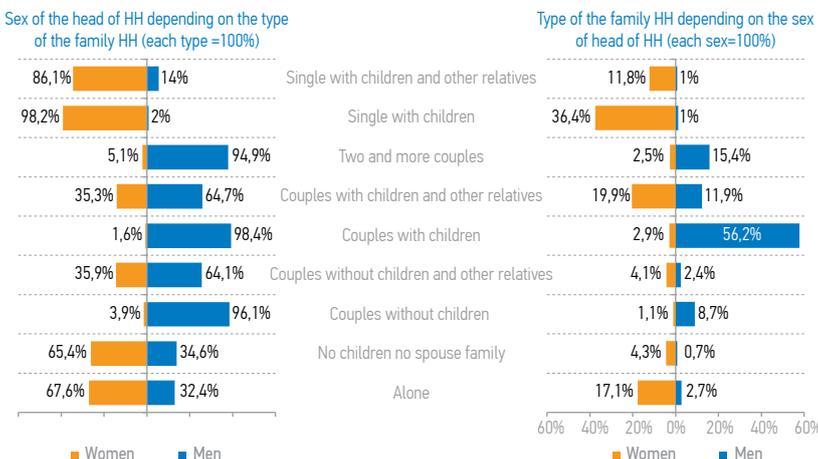


Figure 2.14

2.1.7. Population structure by marital status

Historically Azerbaijan was and continues to be a country where marriage is universal and early enough. According to the 1989 census data, 50% of women were married by the age of 25, and 50% of men by the age of 28. Virtually all people marry and only 2% of women and 1% of men remained unmarried at age 50. About 69% of men aged 16 and above had been in marriage at one time - less than 2% were divorced and less than 1% was widowers; while 77% of women were in this category – 13.4% were widows and 2.9% were divorced. For most people who enter into marriage this union will be their only one. In 1989, 0.9% of men over 16 and 2.7% of women were divorced. The percentage of divorced increases with age reaching 2.4% for men 6.8% of women by the age of 42.

The structure of the population by sex and marital status only changed marginally between 1989 and 2009 (Figure 2.15 and Annex 2).

As compared to 1989, a share of divorced men and women aged 16+ remained relatively constant, though the variation in age-specific divorce rates decreased significantly. In 2009 the highest share of divorced men (always below 1.8%) was observed in the age group 35-45, while the maximum share of divorced women moved to the age group 35-39 declining to 4.7%.

More detailed analysis reveals that despite the general similarities, certain changes occurred in the structures

Figure 2.15
Structure of the population at the age of 16 and above by age and marital status, data of 1989 and 2009

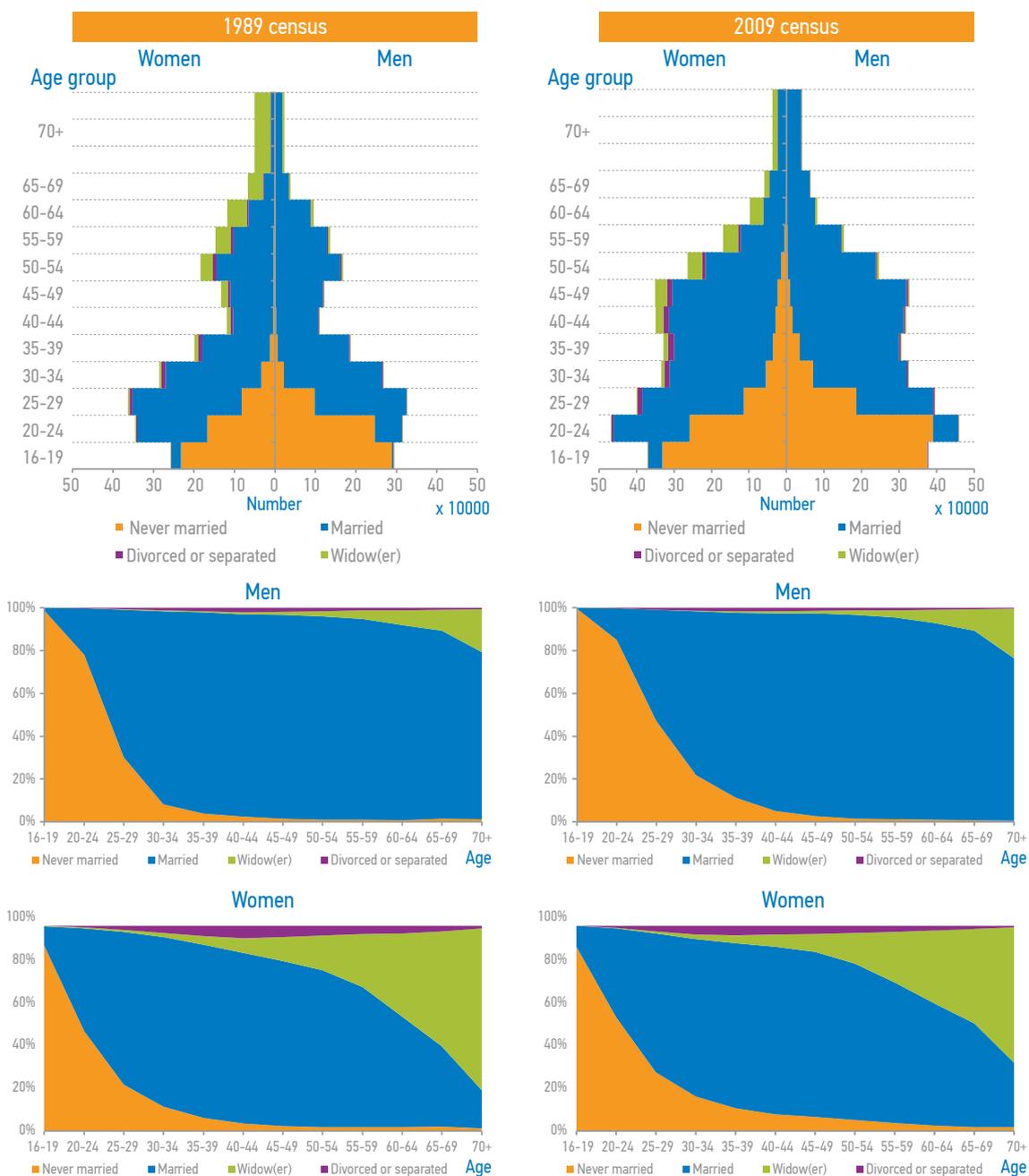


Figure 2.15

	MEN				WOMEN			
	1989	1999	2009	2009-1989	1989	1999	2009	2009-1989
Mean age at first marriage (Hajnal method)	26.0	27.2	28.2	2.20	23.9	24.3	24.4	0.46
Difference in the mean age between men and women	2.1	2.9	3.8					
Median age at marriage	27.93	29.13	29.72	1.79	24.85	25.14	26.00	1.16
Difference in the median age between men and women	3.1	4.0	3.7					
Proportion of never married at the age of 50	0.97%	1.01%	2.15%	1.18%	1.96%	2.18%	6.13%	4.16%
Average duration of marriage	23.51	22.43	21.32	-2.19	23.66	23.55	23.35	-0.32
Years of fertile life lost to widowhood	0.18	0.17	0.16	-0.03	1.35	1.41	1.16	-0.19
Years of fertile life lost to divorce	0.39	0.26	0.36	-0.03	1.18	0.86	1.13	-0.05

Table 2.3

Table 2.3

Key characteristics of the marriage of men and women under the age of 50 in Azerbaijan, data of the 1989, 1999 and 2009 censuses

Figure 2.16

Ratio of men to women at the age of 15 and above, in 5-year age groups, by the 1989 and 2009 census data

of Azerbaijani population by marital status between 1989-2009. Namely, the the proportion of never married increased for men (from 30 to 33%) as well as women (from 23% to 25.5%). Moreover the percentage of never married by the age of 50 also increased,¹¹ from 0.97% to 2.15% for men and from 1.96% to 6.16% for women, respectively. The number of widowers also saw an increase (by 10% from 1989 levels) reaching 2.1% in 2009, although the number of widows decreased from 13.4% in 1989 to 11% in 2009.

It is equally important to note that the age of divorced women in Azerbaijan has decreased by two years (mean age of 40 in 2009) while for men it has remained unchanged (mean age of 42). Meanwhile, the age of men and women who have never married has increased by 1.5 and 1.9 years respectively. The mean age of married, divorced, never married and widowed people may also be affected by behavioural changes as well as the historic evolution of the age structure of the population, and in particular, the ageing of the population.

Using data from the last three censuses, several trends emerge in the main characteristics of marriage in Azerbaijan. First of all, the trend of later marriage. In

1979, at the age of 30, only 12.2% of men and 8.6% of women had never married. In 1989, the figure was 11.8% (men) and 14.7% (women); in 1999, 21.4% (men) and 15.6% (women), and in 2009, 27.9% (men) and 19.6% (women).

Calculations made using the Hajnal method, based on the age specific share of never married revealed that between 1989 and 2009 the mean age for a first marriage for men increased by 2.2 years, which progressed by one year per each inter-census decade. The mean age is also increased for women, but only by six months, and occurred almost entirely between 1989 and 1999. As a result, the gap in the mean age for a first marriage for men and women has almost doubled (from 2.1 to 3.8 years) (Table 2.3).

While the marriage remains the general norm in Azerbaijan, the proportion of individuals (at age 50) that have never married is steadily increasing with each census.

The age at first marriage and ultimate celibacy are naturally linked to the average number of years of reproductive age living in marriage. Between 1989 and

¹¹ The indicator of 'ultimate celibacy' plays an important role both in the demographic analysis and projections. It is assumed that the reproductive function of women above 50 is fading and the marriage at the later age is considered 'demographically infertile'. The same notion applies to the male population although male reproduction function at the age of 50 and above remains active. The demographers traditionally refer to this indicator as it is used as one of the most important parameters of the marriage pattern developed by A. J. Coale and widely applied in the projections of fertility. (C.f. Ansley J. Coale, « Age patterns of marriage », Population Studies, Vol. 25, No. 2 (Jul., 1971), pp. 193-214).

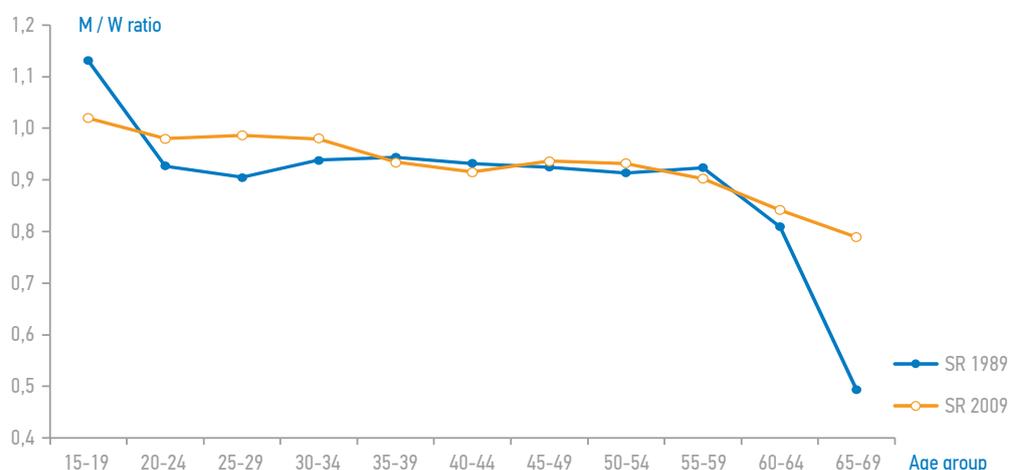


Figure 2.16

2009, the average number of years a man had spent in marriage until age 50 dropped by two years whereas this remained almost unchanged for women.

It is observed the progressive reduction of loss due to widowhood of the mean number of years in wedlock. For men this decrease was only 2 months (16-50 years of age), while for women this ranged from 16 months (1989) to 14 months (2009). The loss of years in wedlock due to divorce also appears minimal – dropping for both men and women during 1989-1999 but increasing back to 1989 levels by 2009.

The change in population sex-age structure between 1989 and 2009 has discrepant consequences to the population structure by marital status. On the one hand there is a marked improvement of men to women ratio in age group 20-35 where population census of the 1989 and 2009 counted respectively 92 and 98 men versus 100 women. (Figure 2.16)

However, despite this improved ratio in certain age groups, the change of the age structure of the population between 1989 and 2009 had, in general, a negative impact on the structure by marital status. Solely due to the age structure the proportion of married men above the age of 16 should have been reduced by 3% with proportion of married women remaining unchanged. The proportion of never married men and women should have been higher than the one observed by 20 and 18% respectively. The proportion of widowers should have increased by 1.65 times, and the proportion of widows – by 1.34 times. The age structure had a positive impact on the proportion of divorced only, which, with other variables remaining constant, should have declined by 10%.

Thus, the change in the matrimonial behaviour of the population between 1989 and 2009 mitigated the negative influence that the age structure dynamics had on the population structure by marital status on all key indicators. The only exception is the proportion of

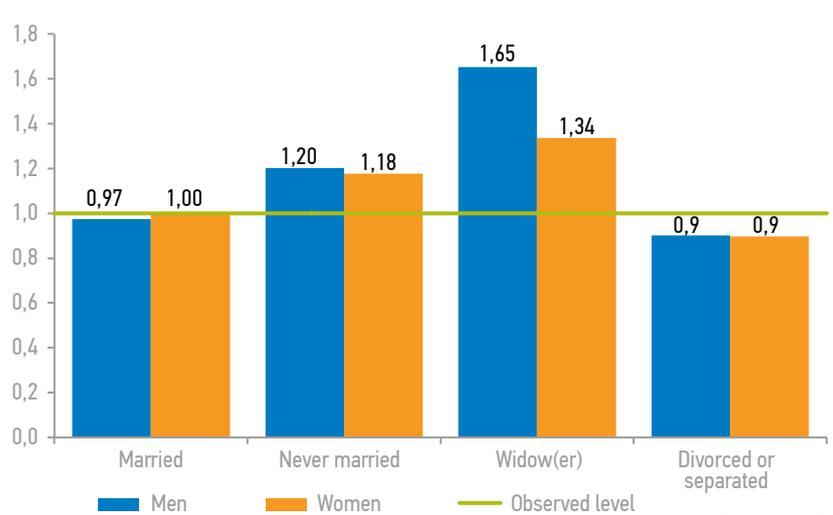


Figure 2.17

divorced men and women that should have been less if the population structure alone had changed while the age proportions of the divorced had remained constant. (Figure 2.17)

Results of the computation of age-standardized population structure by the marital status presented in Figure 2.18 are consistent with the main long-term trends of its development. The age-standardized proportion of married men and women tends to diminish in the period between 1999 and 2009 while this trend was not observed in the period between 1989 and 1999.

Contrariwise, the age-standardized proportion of never married men and women has been progressively growing from 1989. This is likely to be explained by the decision to postpone, and not to reject, the first marriage that, first of all, affects men. The increase in the age-standardized proportion of never married women can, at least partly, be a mere consequence of the ‘ageing’ of the male nuptiality. A visible increase in the age-standardized proportion of widows was registered in the period between 1989 and 1999 and could be a consequence of the armed conflict in and around Nagorno Karabakh.

Figure 2.17
Age-standardised factor of change in the marital structure of the population aged above 15 in 2009 as compared to 1989

Figure 2.18
Dynamics of the age-standardized structure of the population above 15 years by marital status (estimates based on the population censuses of 1989, 1999 and 2009)

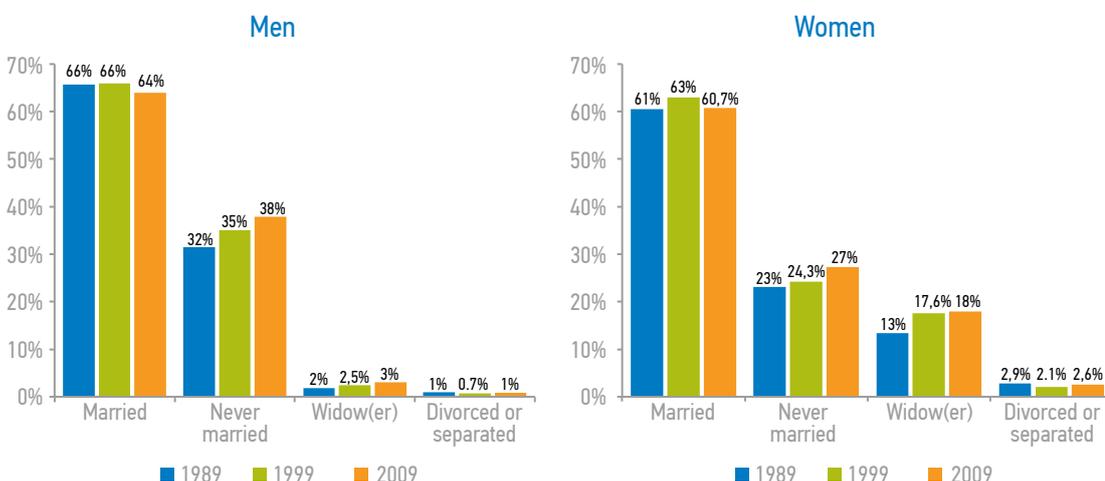


Figure 2.18

2.1.8 Formation and dissolution of married couples and population structure by marital status

As mentioned earlier, the composition of a family-household is changing as a result of events such as marriage, birth of children, adult children leaving the parental household, or the disintegration of marriage as a consequence of divorce or the death of a spouse. This affects, on one hand, the dynamics of the family structure of the population considered above and, on the other, the structure of the population by age and marital status, i.e., the number and proportion of married, divorced and widowed men and women and those who have never married. When reference is made to the population structure by marital status, the observation unit is an individual regardless of his/her role in the family. For example, a widow can live alone or in a household with her married children and their progeny. Similarly, young men and women who have never married can live separately from their parents or stay with the parents' family. Never married, divorced and widowed individuals represent a group of potentially marriageable individuals, while a married person can potentially divorce or become a widow(er). In other words, marriages, divorces and widowhood define the population structure by marital status, while the number of marriages, divorces and cases of widowhood to some extent depend on the marital structure of the population. Meanwhile, the number of births in the country, largely depend on reproductive behaviour patterns, and, in particular, on the perceptions of the ideal number of children and the social acceptability of extra-marital conceptions and child-bearing, as well as on the structure of the population by age and marital status.

indicators such as the number of marriages and divorces, distribution of marriages by order and age of the spouses, and distribution of divorces by duration of marriage. Information on population structure by marital status is obtained through the national census based on the responses of the interviewees, without any documented evidence of their civil status. Such practice is consistent with international standards for collecting demographic information. As the same approach was used in Soviet times, it is possible to analyse the trends in marriage and divorce based on comparable statistical indicators covering a certain period of time. It is also possible to assess the post-Soviet dynamics of the population structure by marital status using the data from the last Soviet census in 1989 and the two national censuses of the population of Azerbaijan in 1999 and 2009.

At present about nine marriages and only two divorces are registered per 1,000 people in Azerbaijan per year (Figure 2.19). The dynamics of the marriage rate in Azerbaijan very much depends on the specifics of the age structure of the population and echoes the dynamics of the fertility rate with a delay of 20-25 years (Figure 2.20).

Usually marriage in Azerbaijan is stable. The legislation of the Republic of Azerbaijan permits divorces both on mutual consent and upon the request of one of the spouses, however, it continues to be a very rare phenomenon. Over the past years, there have been up to 12 divorces per 100 marriages and the ratio tends to decrease further (Figure 2.21).

For women the first marriage is usually their only one. Although divorce is very rare (0.8%), women have 5

Figure 2.19
Marriages and divorces
in Azerbaijan, 1943-2013
(per 1,000 people).

The State Statistics Committee of the Republic of Azerbaijan collects data, on an annual basis, from the statistical reports of the civil registry authorities on

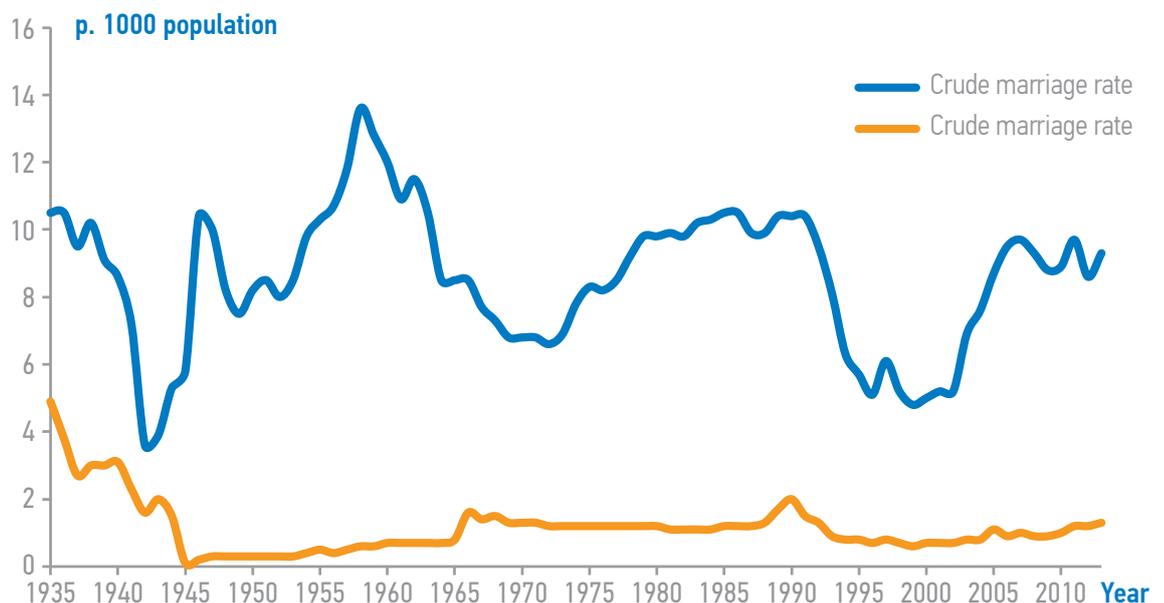


Figure 2.19

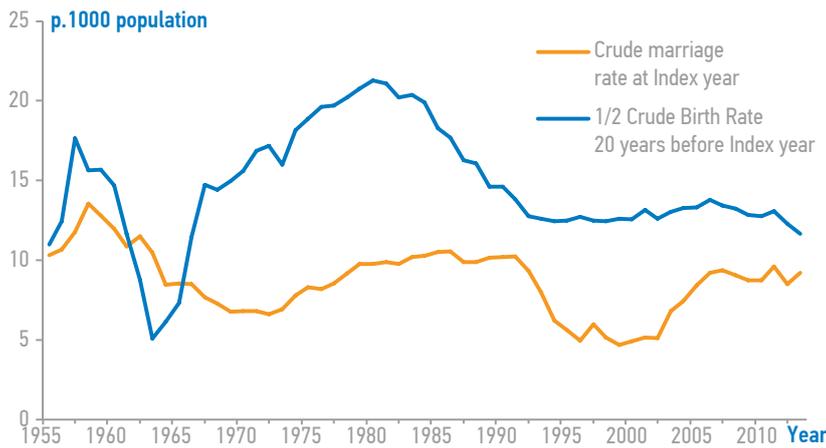


Figure 2.20

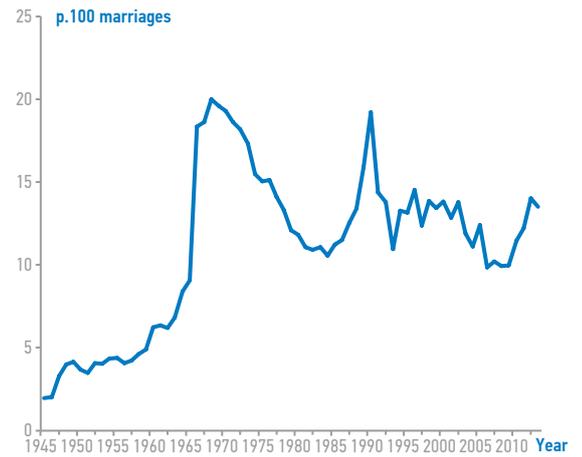


Figure 2.21

times less chance to re-marry than men. Therefore, the proportion of divorced women aged 40 to 44 was 6% whereas the proportion of divorced men in this age group was slightly over 2%.

About 25% of divorced men re-marry, and as most prefer to marry someone who has never been married before, the rate of first marriages among women was 20-25% higher than for men. As a result, the gender imbalance in the marriage market is minimised and the number of unmarried women (at age 50) is therefore low.

In the late 1980s most marriages ended as a result of widowhood, which mainly affected women as they were living on average 7.6 year longer than men. For this reason about 25% of women aged 55 to 59 were widows whereas only one in ten men was a widower. Although the re-marriage rate among widowers was low, they were, nevertheless 10 times more likely to marry than widows, of whom only 6% found a new spouse.

Divorce not only remains a rare phenomenon but its importance as an element that shapes the marital structure of the population has even diminished. In 2009, only five out of 1,000 marriages ended in divorce, versus eight in 1989. A rough calculation based on divorce data by duration of marriage in 2011 revealed that about 15% of marriages end in a divorce.¹² (Figure 2.22)

Less than 20 years ago marriages tended to last an average of 8.3 years before ending in divorce. The average length of a marriage that ended in divorce tends to be slightly more than 10 years. The first five years following the inception of marriage are notorious for the highest risk of divorce. Almost 5% of all marriages end in divorce and 30% of all divorces take place within exactly this period of time. After five years the probability of divorce decreases with 4% ending in divorce during the 5th to 10th years of marriage. In the next 10 years the probability of divorce is equal to 5%, while for marriages lasting twenty years or more, this probability does not exceed 2.5%.

About 63% of couples divorced in 2000-2011 were childless; and 18% of them had only child. All other divorced couples had on average 2.24 common children. Over the recent years the distribution of divorced families by number of children remains rather stable. By the 2009 census, the average number of children in divorced families with children makes about 1.6 child against 2.2 children per a household with children aged below 18.

According to the 2009 census, the number of divorced women of all ages was three times higher than the number of divorced men. Regrettably, the official statistics on marriage by marital status was not available for us, hence it is very difficult to estimate the rate of re-marriage among the divorced.

As was the case 20 years ago, most marriages end with the death of a spouse, and in most cases this is the death of husband. The proportion of widows aged 55 to 59 was 24.7% (2009 census) versus 26.1% (1989), whereas the proportion of widowers in this age group was 2% (2009) versus 3.8% (1989).

Vital statistics and population census data point to an increase in the mean age at first marriage until 2002, thereafter the marriage age more or less stabilised.

Figure 2.20
Number of marriages and births 20 years before the inception of marriage in 1955

Figure 2.21
Number of divorces per 100 marriages in Azerbaijan, 1945 – 2013

Figure 2.22
Probability of divorce depending on duration of marriage, 2011 data

¹² The calculation is made using the so-called transversal hypothesis, i.e. is based on the assumption that the risk of divorce depends only on the duration of marriage and its level is estimated based on 2011 data.

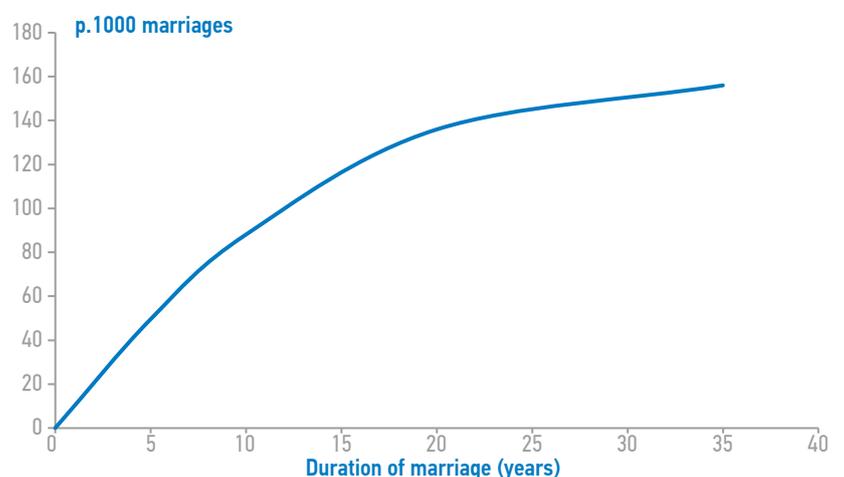


Figure 2.22

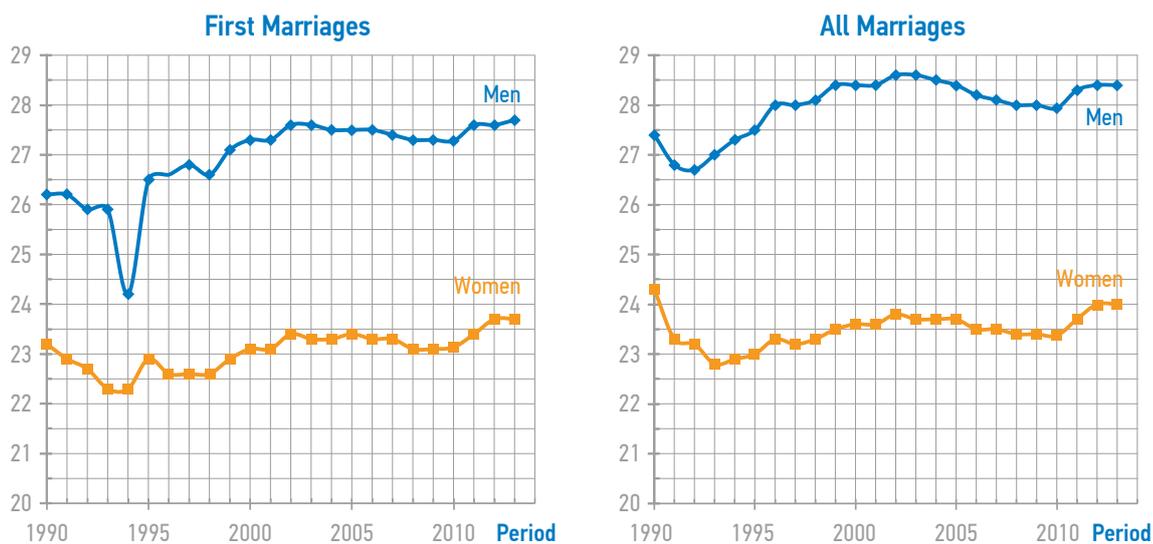


Figure 2.23

Figure 2.23
Dynamics of the mean age at marriage, 1990-2011

Figure 2.24
Age gap at marriage, 2011

This increase in the mean age of the first marriage is in parallel with the increase in the age difference between men and women at the time of marriage (Figure 2.23).

In 1990, according to the vital statistics the bridegrooms at first marriage were on average 3 years older than brides. Then, by 1999, this difference increased to 4.2 years, and has thereafter remained unchanged. In general and in all marriages, exceeding of bridegroom's age increased from 3.1 years in 1990 to 4.9 in 1999, but from 2004 it began to decrease, reaching 4.6 in 2011. As available official statistics do not contain detailed data on marriage and remarriage, either by age or marriage status, it is difficult to ascertain the reasons for the reduction in marital age difference, and further research should be undertaken if/when the necessary data becomes available.

Ascertaining the actual difference in the ages of the bride and groom is also not possibly through a direct comparison of the average age of marrying couples. However, if the 2011 data on marriage age is analysed, it is apparent that women aged either equal to or below the mean age at marriage, tend to marry men five years

older, whereas women aged 25 to 45 tend to marry men that are three years older. (Figure 2.24, left chart)

If we take the age of men as a reference point and compare it with mean age of women, we can see that the older the man is, the wider the age gap between him and the woman he marries. Men marrying at the age of 28 (mean age of marriage) tend to choose women who are on average 5 years younger. 54% of men marrying at age 20 to 24 choose women from the same age group, whereas in older age groups only 13-14% of men marry women in their age group. Over 50% men aged above 30 prefer women who are on average 10 years younger, and 30-25% tend to marry women from their preceding age group, i.e. on average 5 years younger. (Figure 2.24, right chart)

Additional studies are required to understand the reasons behind the gender age difference in marriage. However, what is obvious from the available data is that this age difference, combined with the higher mortality rate among men, will cause a high risk of women's widowhood resulted in social and economic consequences for the wellbeing of the family.

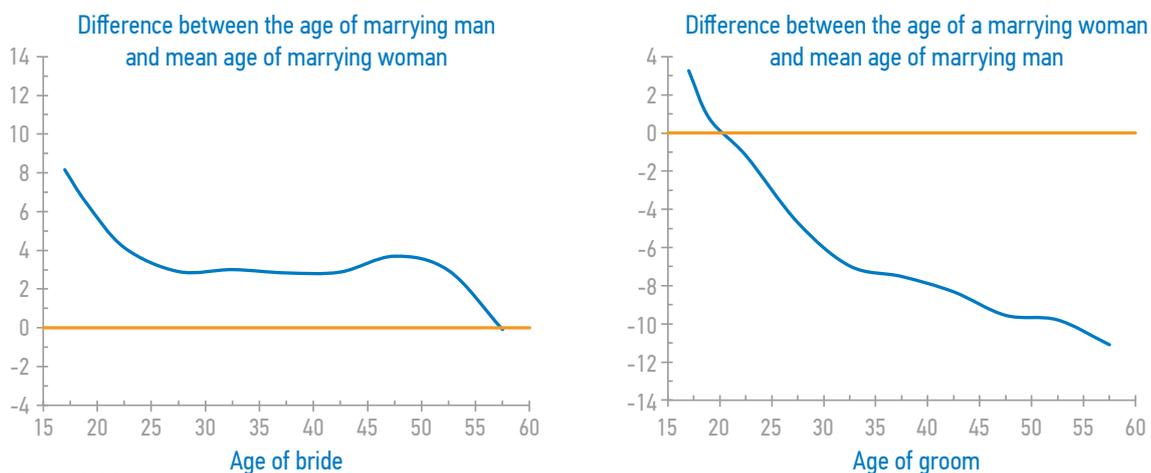


Figure 2.24

Conclusions:

- The institute of family in Azerbaijan is commonplace and stable. The majority of the population of Azerbaijan lives in family-households consisting of two or more members. The proportion and absolute number of people living alone appears to be in decline.
- In the post-independence period, the mean size of a family-household in Azerbaijan appeared to increase; however, the classical nuclear family, i.e. a married couple with children, is the most prevailing family type.
- The tradition of young married couples co-residing with parents still exists and seems to be increasing; thus, families consisting of three consecutive generations are not uncommon.
- From the gender perspective, men have the dominant role in the family in Azerbaijan and are most often indicated as heads of households. Women are more likely to be a head of household with a deformed family structure (i.e., single-parent family).
- Marriage in Azerbaijan has been and remains an universal practice and occurs relatively early and virtually all the adult population is married. The family is a traditional form of social life.
- The majority of marriages in Azerbaijan are stable. The main reason behind the disintegration of marriage is the death of a spouse. There are more widows than widowers as the male mortality in the middle age group is higher than the female mortality.
- The improvement in the male-to-female age ratio is a positive factor for the marriage market. Nevertheless, there are still less men than women aged 18 and above, therefore, the proportion of 50-year-old women who have never married (ultimate celibacy) is 3.5 times higher than for men.
- The importance of marriage and family in Azerbaijan is not only preserved but even strengthened, as evidenced by the share of divorced men and women decreasing from census to census.
- Divorce is a rare phenomenon. Most marriages end in divorce within the first five years. Two out of three childless couples divorce. In total, one in seven marriages end in a divorce. Men are much more likely to re-marry than women.
- Over the past twenty years, the men's mean age at first marriage has increased considerably. Today men tend to marry at a more mature age than women. Importantly, the later men marry the wider the age gap with his spouse.

2.2. Fertility

2.2.1. Conceptual framework of modern fertility patterns

A comparative analysis of fertility in developed countries reveals a general pattern of change in reproductive behaviour as demographic transition progresses. Initially, many countries experience the decline of family size that could be considered as “compression” of traditional family model. It begins with a decrease in the number of children in the family accompanied by customarily early and stable (life-long) marriages. Women customarily marry young and quickly have their two-three children, completing the formation of their “post-transitional” families in a short period. Having a third and fourth child is a less frequent occurrence and the existence of families with five or more children is rare. Since marriages tend to be long-lasting, unless a spouse dies, the average age of maternity decreases and women, after giving birth to desired number of children prevent unwanted births either through contraception or induced abortion.

This decline in the traditional family size was followed by a new stage in reproductive behaviour, known as the “second demographic transition”. Although not well studied, this new stage represented, essentially, the disappearance of the traditional family and inherent behavioural ethics and was manifested in increased divorce rates, increased “informal” marital (sexual) unions and out-of-wedlock births, resulting in a fertility decline below the replacement level. Critically, the time period couples chose to form their families,

already shortened due to the reduction in ‘ideal’ family size, was postponed and consequently wives entered motherhood at an older age. Thus the period during which contraception and induced abortion is required to prevent unwanted births becomes much longer.

This decrease/increase in the average age of maternity is an important indicator of the evolution of reproductive behaviour in the end of demographic transition and during the post-transitional period.

From the practical point of view, the classical model of fertility decline in the course of demographic transition places a higher demand on family planning services for women of “older” reproductive age (30-45). This age group also tend to demonstrate higher risk of induced abortion. As most women aged 30 and older have already completed their family formation and never plan to have more children, coitus-independent contraception (for example, IUD) or contraceptive sterilisation would be the optimal choice for them.

During the “second demographic transition” women at a younger reproductive age (18-25) put a greater demand on family planning services, as they are sexually active but are not yet planning to have children. These women need effective, reversible and not necessarily long-term contraception (for example, hormonal pills). However, given the high risk of sexually transmitted diseases that occur as a result of these unstable sexual unions, condoms would be a sensible choice of contraceptive method for this age group.

Figure 2.25
Dynamics of total fertility rate since 1961 by type of the place of residence

¹ The total fertility rate is a specific characteristic of the reproductive behaviour of a synthetic female cohort consisting of different cohorts of women aged 15-49 living at given calendar period. TFR in a given year is calculated as the sum of age-specific fertility rates and interpreted as an average number of children a woman would have if all the age-specific fertility rates observed during the period did not change during the 35 years of her reproductive life.

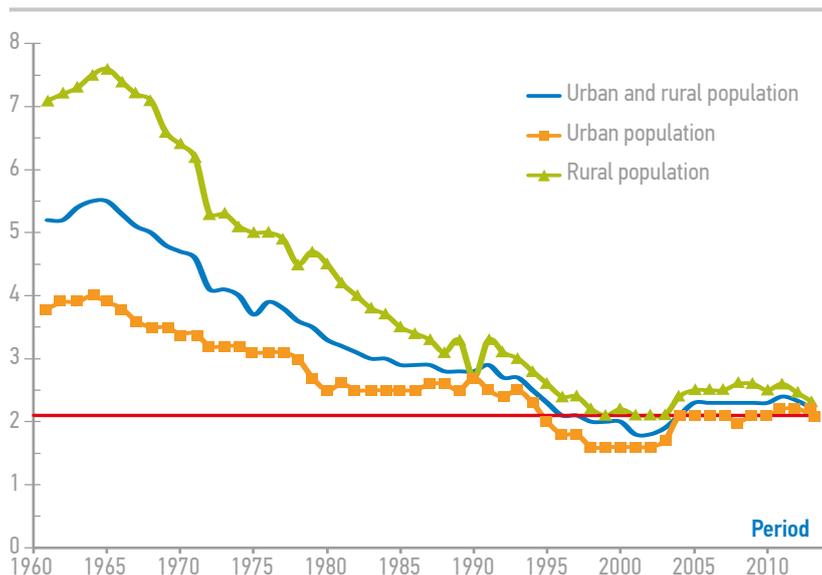


Figure 2.25

2.2.2. Fertility dynamics in Azerbaijan

During the last half-century, fertility dynamics in Azerbaijan conformed to the classical changes in reproductive behaviour that occur in demographic transition. In the middle of the 1960s, the total fertility rate (TFR) in Azerbaijan was 5.5 children per woman.¹ (Figure 2.25) In urban areas the TFR was close to four children, while the rate in the rural population reached 7.5 births, which was close to the world’s highest fertility levels observed at that period. This difference in rural and urban fertility suggests that changes in reproductive behaviour began earlier in Azerbaijan, possibly in the 1930s, and occurred initially in the urban population, which was the first area to be affected by modernisation.

Since 1965, fertility in Azerbaijan has declined quite rapidly. By 1980, the TFR in the urban population had

decreased to 2.5 births per woman and then remained stable until 1990; rural TFR, however, continued to decline. The gap between fertility levels in urban and rural populations was gradually decreasing, but this relative difference stabilised as of the end of the 1980s and fertility in rural areas has continued to be 20-25% higher since then.

The drop in TFR between 1990 and 2000 was a consequence of the transitional period the country was experiencing, further complicated by the armed conflict in Nagorno Karabakh. During this period, the decrease of 2.7 to 1.6 births per woman in urban areas was much lower than the replacement level. Equally the TFR in the rural population in 1994 was below 3 births, and in 1999 reached 2.1 births per woman, the lowest TFR of the entire 1990-2000 period and barely met the replacement level. This decline in rural population TFR continued until it reached 1.77 births in 2002.

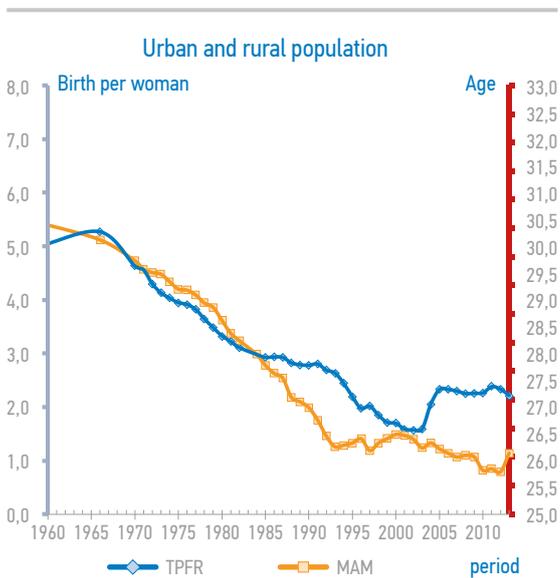


Figure 2.26

Thus, the critical fertility decline in the 1990s was evidently caused by the economic and political crisis and the destruction of the Soviet system of social security, including family and maternity assistance, rather than a change in the general fertility trend.

With the resurgence of political stability and economic progress, fertility in Azerbaijan began to increase from 2003, with 2.1 births per woman in urban areas and 2.5-2.6 in rural areas, although this was still slightly lower than the 1990 figure. In this context, the question of how to predict fertility dynamics is the most important. Will fertility increase, if all the socio-politic and economic conditions are equal? If so, to what level? If not, will it stabilise at the replacement level or decline to an extremely low level as was observed in the ex-socialist Eastern European countries?

Between 1959-1990, the average age at maternity and the fertility rate declined simultaneously.² Fertility in Azerbaijan “rejuvenated” not because younger women were having more babies but because older women were having fewer babies. If, at the beginning of the 1960s, women reaching the age of 30 gave birth to 2.4 children on average, (about 50% of the TFR), by the beginning of the 1990s the contribution of this age group to TFR had fallen to 20% (Figure 2.26 and Figure 2.27).

The period from 1965 to 1990 can be considered a phase of “normal” fertility decline in the framework of a classic scheme of demographic transition, when fertility decreases in all age groups but to a different extent. Fertility reduced by 1.7 times amongst those aged 20 or below, while only decreasing by 20% amongst those aged 20-24. The level of fertility decline increases in line with the age group, from 1.5 times at ages 25-29 to 34.5 at ages 45 and above (Figure 2.28).

The serious decline in the fertility rate that occurred between 1993-2003 affected all age groups: by 1.8 times

Figure 2.26
Total fertility and mean age at maternity in total population

Figure 2.27
Total fertility and average age at maternity in the urban and rural population

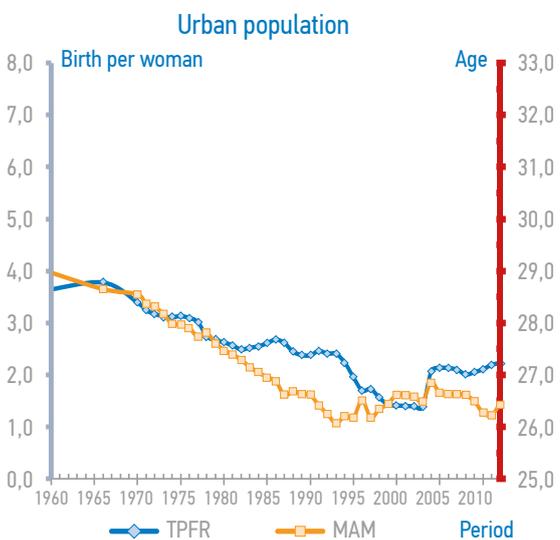
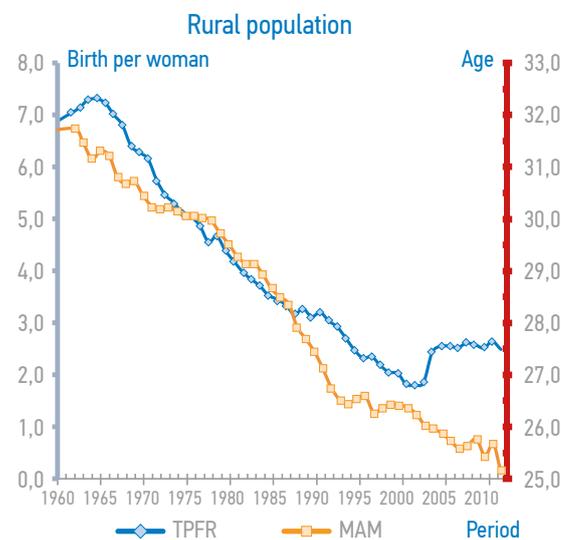


Figure 2.27



² The average age at maternity or the average age of fertility is calculated as the mathematical average of ages from 15 to 49 weighted by age-specific fertility rates. This indicator is independent of the population and characterises the reproductive behaviour. It is important not to confuse it with average age of mothers, which depends on age structure and represents a mathematical average of ages weighted by the number of births at each age.

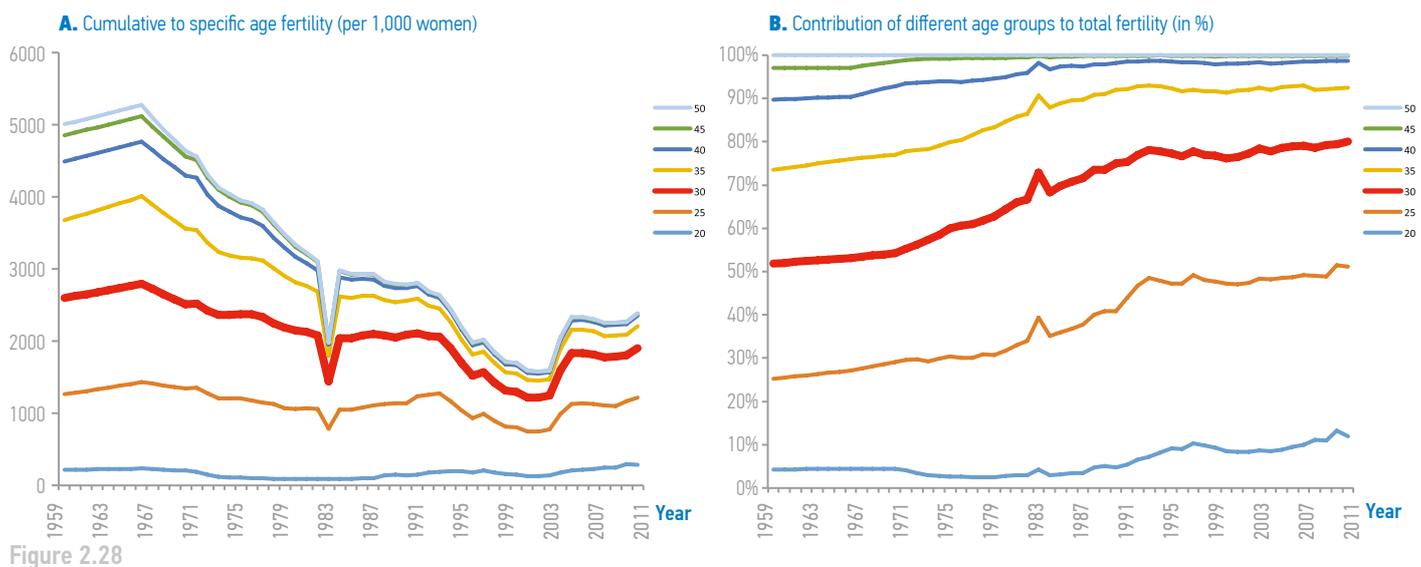


Figure 2.28

Figure 2.28
Evolution of age-specific fertility patterns in Azerbaijan in 1959-2011

for 15-19 year olds, by 1.9 times for 20-24 year olds and by 1.5-1.6 times in the remaining age groups. The largest decrease (25%) was observed amongst those aged 40-44. As a result the average age at maternity increased from 26 to 26.6 years in urban areas, though showed minimal change in rural areas. This disruption of a long-term trend of maternity “rejuvenation” in Azerbaijan could hardly be interpreted as an emergence of a new pattern of reproductive behavior that has already become prevalent in Europe and is distinctive for late childbearing. Indeed, after 2003, fertility amongst those aged 30 and older increased by about the same absolute value as it had decreased during the crisis years of 1993-2003. Meanwhile fertility rates amongst those aged 20-29 have not yet reached pre-crisis levels.

A significant fertility growth rate amongst those aged below 20 requires special attention. Fertility in this age group had shown a reduction prior to 1980, which probably reflected the influence of the modernisation of Azerbaijan society, in particular the increase in the level of female education. Since the beginning of the 1980s, fertility in this age group began to increase and had doubled by 2000, resulting in 30 births per 1,000 women. Between 2000-2010 the fertility rate in this group again doubled, equalling the fertility rate of those aged 30-34. This growth rate occurred in both urban and rural areas, though was much higher in rural areas reaching 80 births per 1,000 women between 2009-2011, and exceeding the fertility rate of women in the 30-34 year age group.

These increases in fertility of those below 20 and the parallel decreases and increases occurring in all the age groups suggests that the post-transitional family model with its traditional early marriage and early childbearing still exists. If the fertility rates of those aged 20-29 return to pre-crisis numbers then the TFR may reach 2.4 births per woman in the urban population and 3 births per woman in rural areas.

2.2.3. Fertility by birth order and birth intervals

As mentioned earlier, fertility in Azerbaijan declined in accordance with the classic “compression” of the traditional family as part of demographic transition: third births become very rare and the births of order four, five etc. disappear; at the same time almost all women marry and have their first and second child in a short time period. Hence, the period of family formation, from marriage to birth of the last desired child becomes relatively short, and under conditions of early marriage, fertility at older ages becomes negligibly low. The fertility level in modern-day Azerbaijan is determined by the annual number of first and the second births, which are 53% and 33% respectively, while the share of third births constitute around 12%, and all remaining births account for no more than 2%. The share of first births is especially high because of synchronization of first births in successive female cohorts observed nowadays in Azerbaijan. As a result of such an “overlap”, total first birth rate (sum of age-specific first birth rates) exceeds noticeably the level of 1: thus in 2011 it was equal to 1.25 first births per woman. Obviously, in a real cohort such a rate is impossible because a woman cannot have more than one first child. Nevertheless in a synthetic cohort it is a well-known phenomenon caused by fertility rejuvenation.

Most first and second births occur when women are aged 20-24, while women tend to have their third baby when they reach 25-29. Out of 1000 women aged 30-35 only 20 women have their first and second child, whereas only 15 give birth to their third child. Thus, in today’s Azerbaijan a woman has completed her family formation cycle by the age of 30 years (Figure 2.29, left chart).

Estimates of marital fertility by age and birth order conform to the above-mentioned conclusion. However,

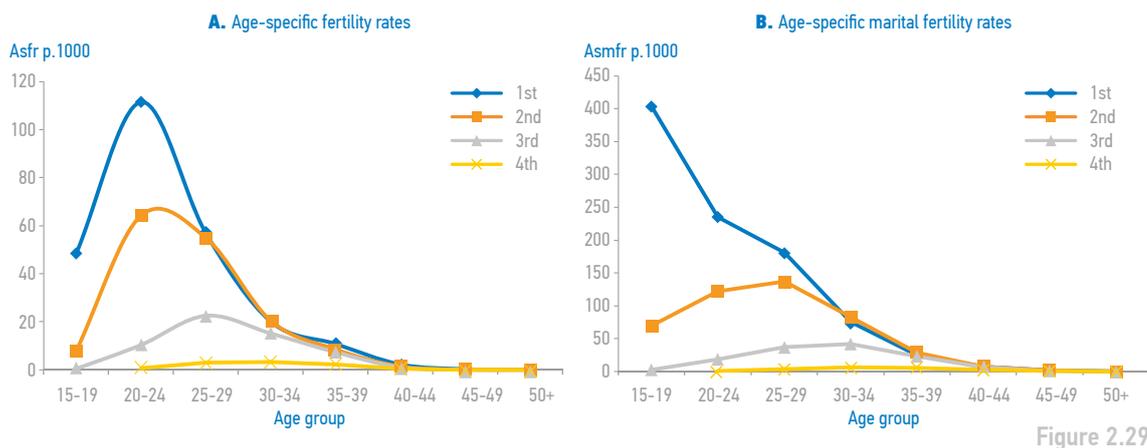


Figure 2.29 Age-specific general and marital fertility rates in Azerbaijan in 2011, by birth order

it is difficult to interpret age-specific marital fertility rates because of the correlation between a woman's age and the duration of marriage. In 2011, 400 per 1,000 married women aged 20 years or below gave birth to their first child, whereas this reduced to 235 for those aged 20-24. Maximum second births occurred among married women aged 25-29 and third births were most common among married women aged 30-34, even though the level was not very high: 42 third births per 1,000 married women (Figure 2.29, right chart).

As the average age of women has varied little since 2000, it is possible to estimate the birth intervals for a synthetic cohort of 2011 by comparing the mean age of women at each birth (1st, 2nd, 3rd, etc.,) with the mean age at first marriage or the mean ages by parity. In the first case the average genetic interval is calculated as the difference between the mean age at birth of given order and at marriage (the age that sexual relations began), divided by birth order. This approach presumes that women having child in the same order represent a homogenous group in regard to their reproductive behaviour. The second approach - comparing the successive ages at maternity by birth order may provoke a risk of behaviour interference of different cohorts. For example, women giving birth to their third child could have an entirely different reproductive history than women having their fourth child.

According to 2011 data, the average interval between births increases progressively with each birth. On average, women have their first child 13 months after they marry and after three years of marriage the family usually has two children. In both cases the average genetic interval is close to 18-29 months, which is the average natural minimum, according to J. Bongaarts' estimations.³ (Figure 2.30)

The formation of a three-child family takes twice as much time as the formation of a family with two children, i.e. on average six years after union formation. One reason for this could be that families take longer to decide on whether or not to have a third child based on their circumstances at the time. Two children in a family

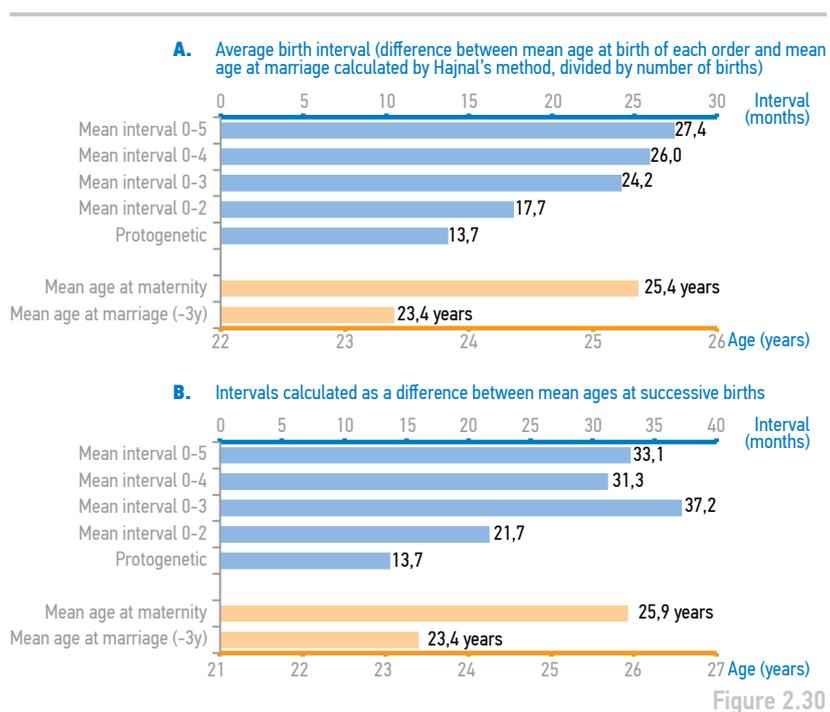


Figure 2.30 Estimates of the length of birth intervals based on the age- and birth-order-specific fertility rates (2011) and age-specific proportions of married women (2009 census)

tends to be the norm and decisions on these births are taken irrespective of material or other conditions. Additional research on fertility factors and motivations would be required to test this hypothesis. It should also not be excluded that the third child was only conceived because of ineffective contraception.

Given the particularities of family formation in Azerbaijan, in most cases, only women aged 26 and older who already have two children are interested in effective contraception. According to the Demographic and Health Survey held in Azerbaijan in 2006, the same group of women is subject to a higher risk of induced abortion as well.⁴

³ Bongaarts, John (1978) "A Framework for Analysing the Proximate Determinants of Fertility" Population and Development Review, Vol.4, no 1, (March 1978), p.105-138

⁴ Azerbaijan Demographic and Health Survey 2006. Calverton, Maryland, USA: State Statistical Committee and Macro International Inc. May, 2008, p.71-72



Figure 2.31

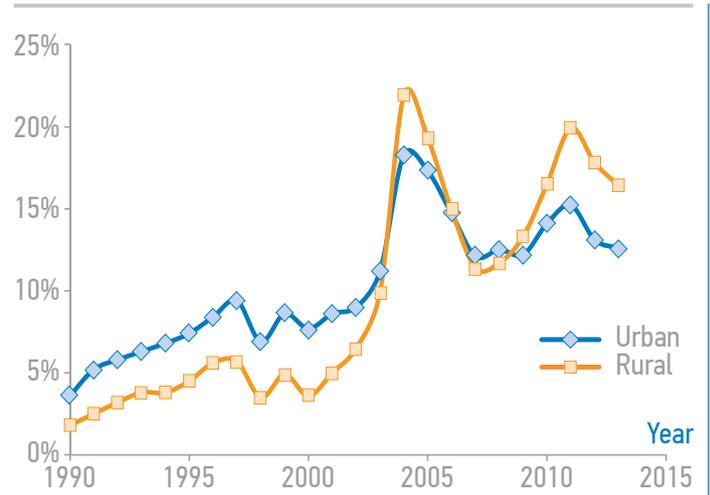


Figure 2.32

Figure 2.31

Proportion of extramarital births, 1970- 2011

Figure 2.32

Percentage of extramarital births in urban and rural populations since 1990

Figure 2.33

The structure of extramarital fertility in Azerbaijan, 1988-2011

2.2.4. Marital and extramarital fertility

Since the beginning of the 1980s, illegitimate birth rates have increased in all developed countries and is becoming a symbol of modern demographic development. Today in the majority of European countries, one third – and in Norway, Sweden, Island and France more than half – of annual births occur outside marriage. Azerbaijan is no exception, with the proportion of children born to unmarried mothers increasing from 1.5% in 1981-1982 to 6% by the beginning of the 2000s. In the first decade of the 21st century its growth increased and the proportion of illegitimate births reached 18% by 2011. Nevertheless, extramarital fertility in Azerbaijan has rather a different nature than in the Western countries (Figure 2.31).

Until 2003, extramarital fertility in urban areas was higher than in rural areas. However, in 2004, the number of illegitimate births almost doubled and the proportion of extramarital births among rural women became higher. Although between 2006-2008, extramarital fertility in urban and rural population equalised somewhat, since 2009 the rates in rural areas have again increased (Figure 2.32). Whilst no research is available on this phenomenon, the increase in rural extramarital fertility may be related to the growing number of religious or traditional marriages, for which civil registration was either postponed or did not occur.

Demographic statistics in Azerbaijan distinguish

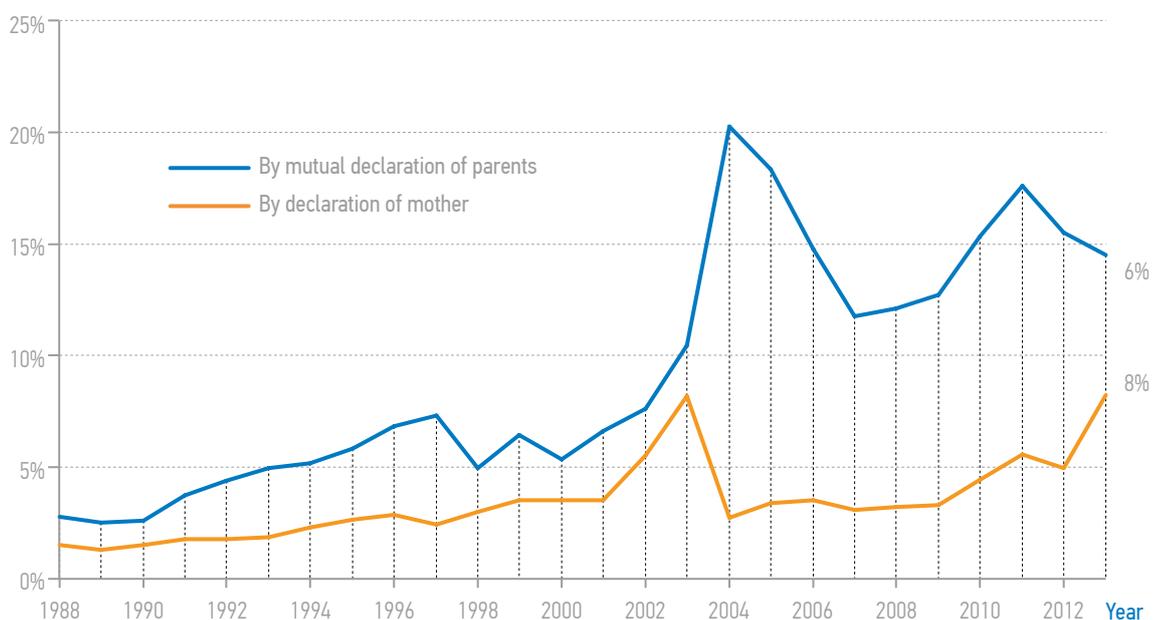


Figure 2.33

⁵ According to the Article 46.3 of the Family Code of Azerbaijan "In case if a child was born to unmarried mother, in absence of parents' joint declaration or court decision concerning affiliation, mother's last name is recorded in the birth certificate. Father's first and patronymic names

between two different categories of extramarital births. The first one includes newborn children “registered by mother’s declaration” and covers about 30% of all extramarital births;⁵ their proportion in the total number of births increased from 3% to 6% between 1990 and 2011. The second includes children “registered jointly by both parents”. This is the standard procedure and represents a public acknowledgement of fatherhood and guarantees that both parents take responsibility for their child. The legal status of these children and those born in a registered marriage does not differ much. From 1990 to 2011, the proportion of children born out of marriage but jointly registered by their parents increased from 3-12 % of the total number of births (Figure 2.33).

In the majority of cases extramarital births should be actually be termed premarital births, because the parents usually register their marriage soon after the birth of their child. Around 70% of children born illegitimately are registered jointly, after which the parents plan the official marriage. The 2006 Demographic and Health Survey (DHS) showed that in most cases these two events followed one another in a relatively quickly. Half the women reporting extramarital births were married within 9 months, and almost 80% of women reporting extramarital births were officially married within three years (Figure 2.34).

If premarital births are a natural consequence of premarital conceptions, the latter does not necessarily lead to extramarital birth. Once the pregnancy is discovered, parents may decide to marry quickly in order to avoid premarital birth. Thus, the proportion of children conceived out of marriage is higher than the proportion of extramarital births. According to the 2006 DHS, around 15% of women born before 1976 reported premarital conception, which increased to 20% for the those born between 1976-1981 (women aged 25-29 at the time of interview) and to 24% for those born in 1986-1991 (Figure 2.35).

The survey also showed that premarital conception might cause instability in a marriage. Among divorced women at all ages, 20% reported a premarital conception, while 16% were still married at the moment of the interview.

Despite the fact that some parents may have married through a religious or traditional matrimonial ceremony (celebrated and accepted by the relatives of both partners), given the absence of official state registration the birth of a child could be considered as out of wedlock. This may well be why the number of children born out of wedlock is reported as higher in rural areas.

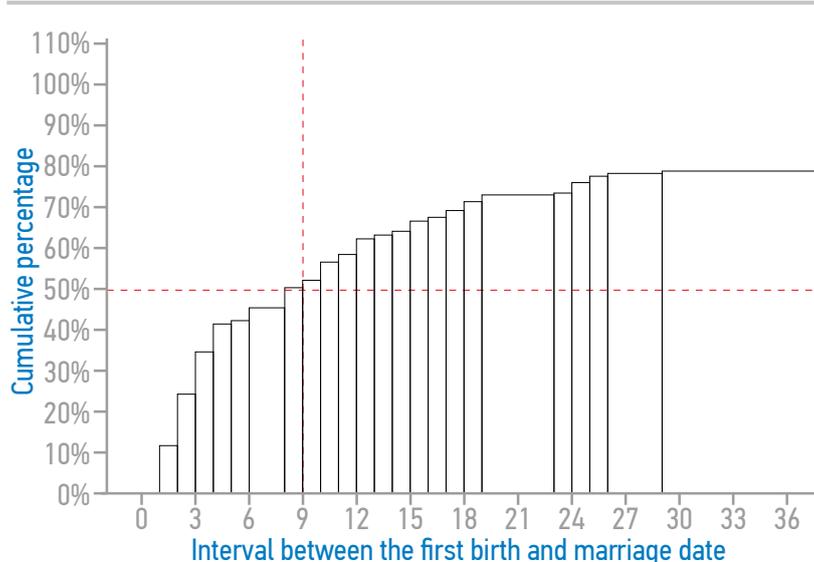


Figure 2.34

Figure 2.34
Likelihood of mothers to marry after illegitimate birth (DHS 2006)

Figure 2.35
Proportion of premarital conceptions at first birth among different female cohorts

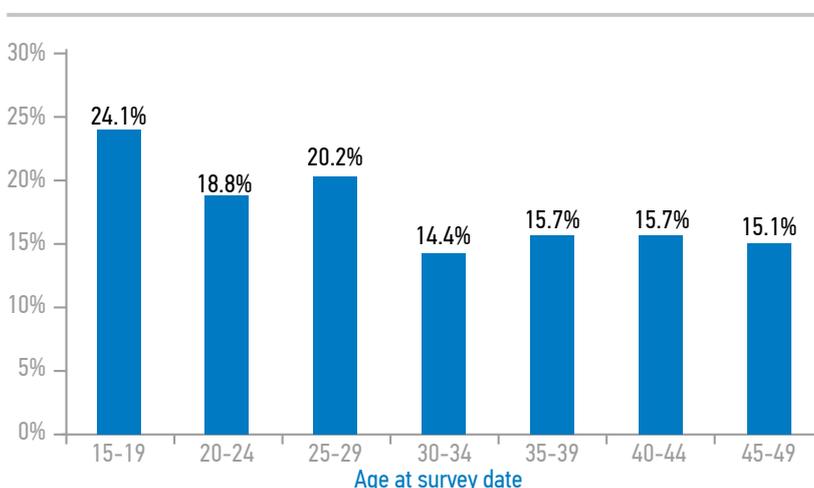


Figure 2.35

Figure 2.36
Dynamics of sex ratio at birth in Azerbaijan, 1935-2011

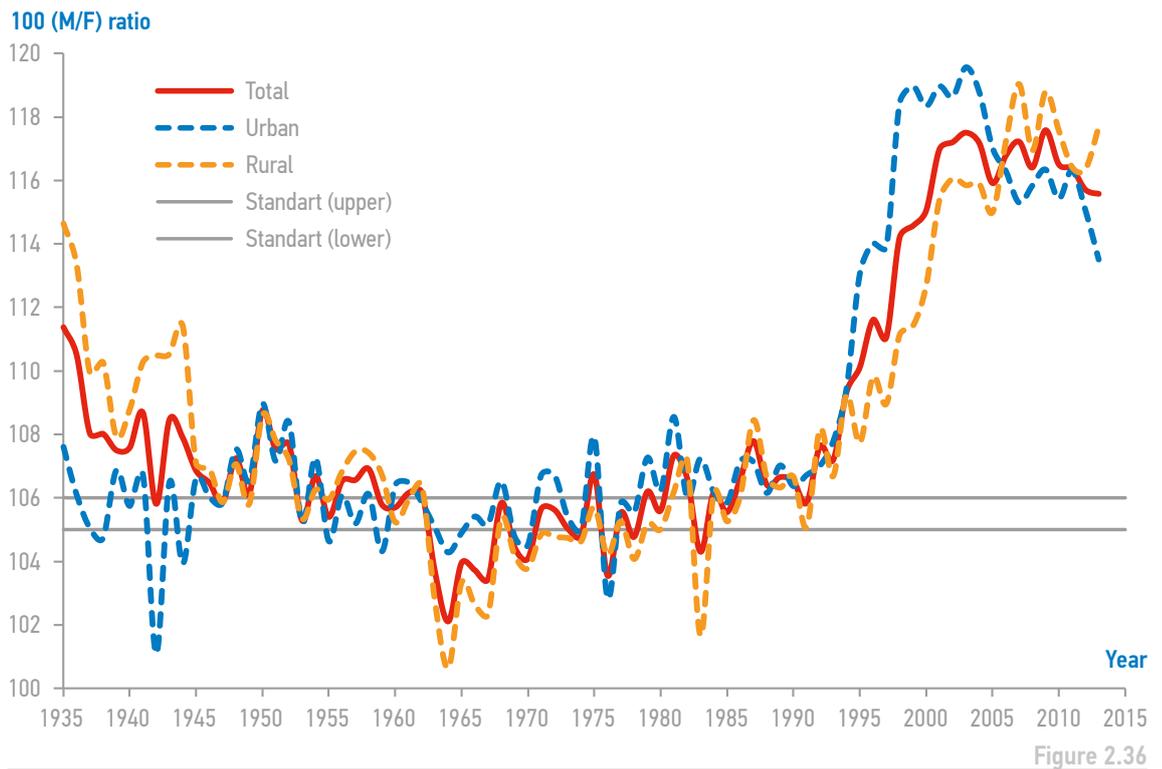


Figure 2.37
Sex ratio at birth, by birth order (estimated by AzSHS-2006 data)

⁶ See : "Report of the International Workshop on Skewed Sex Ratios at Birth", UNFPA, Ha Noi, Vietnam, 5-6 October 2011; "Sex selection: from Asia to Europe" Workshop of CEPED (Centre of Population and Development), Paris, December 2, 2011

⁷ John Arbuthnot (1667-1735), "An argument for Divine Providence, taken from the constant regularity observed in the births of both sexes" (1710) Philosophical Transactions of the Royal Society of London, 27: 186-190. Johann Peter Süssmilch (1707-1767) «Die göttliche Ordnung in den Veränderungen des menschlichen Geschlechts aus der Geburt, Tod und Fortpflanzung des selben erwiesen... », 1741, Berlin

2.2.5. Sex ratio at birth in Azerbaijan

Since the beginning of the 1990s, the proportion of newborn boys has grown significantly. This phenomenon, already widespread in South-Eastern Asia, China, India and Albania, became noticeable in the Caucasus, apart from the bordering republics of the North Caucasian region of Russia. Such a large-scale and stable change in the sex ratio at birth (SRB) raises a concern of international community and academia; however its causes and mechanisms are still unclear and insufficiently explored.⁶

Historically in human populations the sex ratio at birth is 105-106 boys per 100 girls. This ratio was first proposed

by John Arbuthnot in 1710 and later confirmed by Johann Peter Süssmilch in his fundamental work.⁷ Demographic statistics have since concluded, that in all human populations the SRB is 105 newborn boys to 100 girls; hereinafter this ratio is referred to as "normal".

In Azerbaijan from the beginning of the 1950s to the end of the 1980s, a normal SRB (105.5/100) was observed. In 1992 the proportion of male newborns began to increase with an SRB of 107, and by 2002 this indicator had increased to 117 following which it remained stable for the duration of the last decade (Figure 2.36)

The growth in the proportion of newborn boys occurred in both urban and rural populations. By 2003 the SRB in urban areas had reached a record 119 boys per 100 girls, falling to 116 over the next three years where it then stabilised. In the rural population the SRB reached 119 boys in 2007, decreasing to 117 where it also remained stable.

It is possible that the proportion of boys among newborn children depends to some extent on birth order. As the 2006 DHS showed, of 13,076 reported births 53.2% were boys, (i.e. the SRB was 114 which roughly corresponded to official statistics for 1992-2006). For first births, which represented 40% of the total number of births, the SRB was 115, and the difference from the normal SRB was statistically significant ($p < 1\%$). For second births the SRB was around 112, which was also statistically significant. For third births, the SRB was

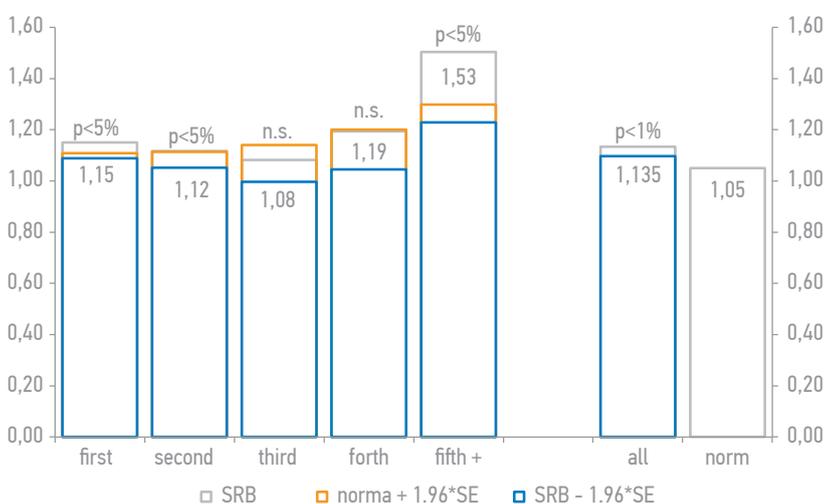


Figure 2.37

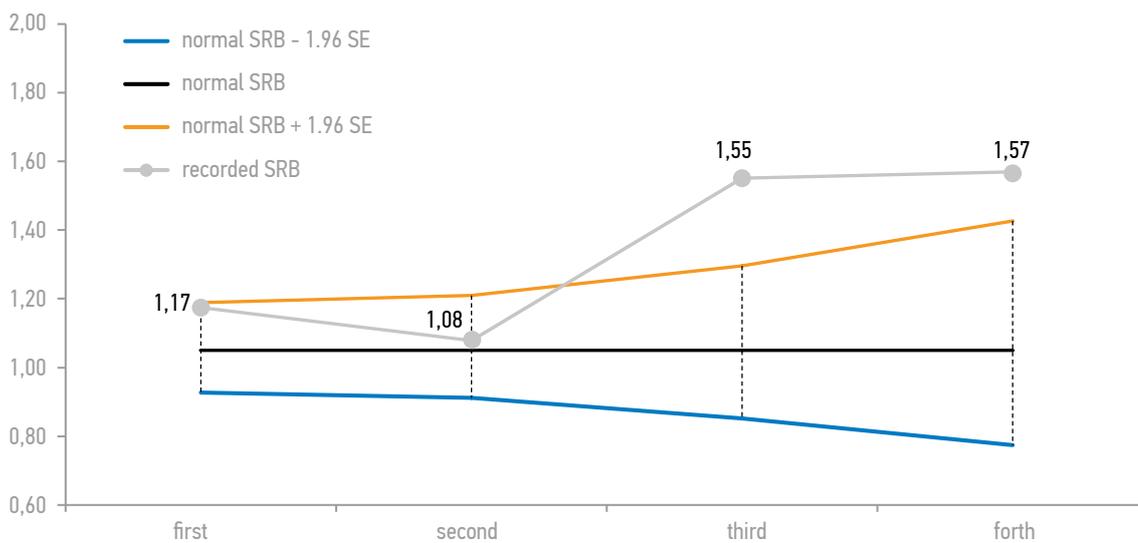


Figure 2.38

close to normal, dropping to 108, while the difference between the sex ratios of the second and third births were not statistically significant. For the fourth birth the SRB increases to 119 boys per 100 girls, but statistics do suggest that this indicator differs significantly both from normal SRB and from sex ratio at third birth. Among fifth births there were 153 boys per 100 girls and, even though the number of observations was relatively small (331 births), such a high value of SRB differs both from the normal SRB (difference is statistically significant at the level of $p < 5\%$) and from the sex ratio at the fourth birth ($p < 10\%$) (Figure 2.37).

During the five years preceding the 2006 AzDHS, the deviation of the sex ratio was statistically insignificant, increasing to 117 boys per 100 girls (first birth) and then decreasing to 108 (second birth). Additionally, the number of observations was low: 1,000 first births and 767 second ones. However, the sex ratio for third births increased to 155 boys per 100 girls, which is statistically significant, even though the estimates were based on around 352 third births (Figure 2.38). These estimations presented on the Fig.2.38 show to what extent the statistical significance of the statement that the sex ratio at birth deviates from the norm,

Figure 2.38

Estimations and 5% two-side confidence interval of the sex ratio at birth, by birth order (according to the 2006 AzDHS, for births occurred during 5-year period preceding the survey)

Figure 2.39

Distribution of Azerbaijan administrative districts by sex ratio at birth, 2011

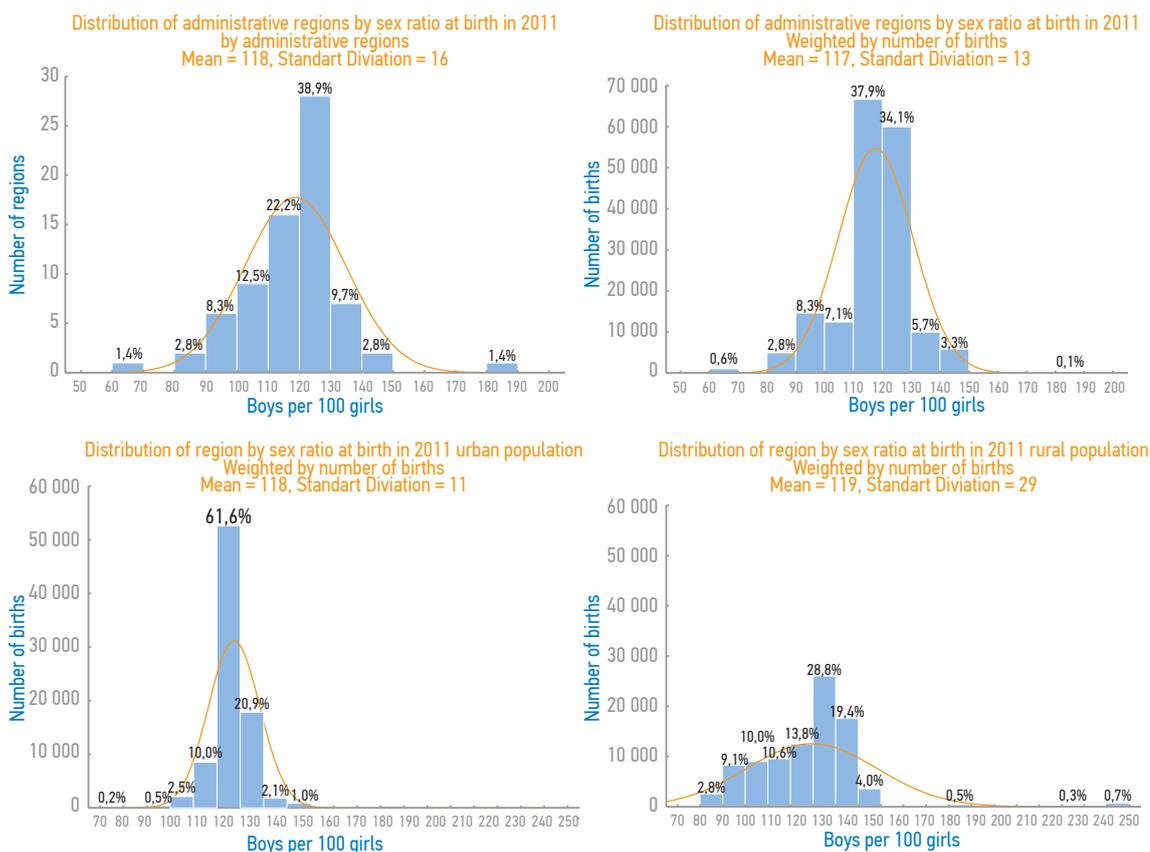
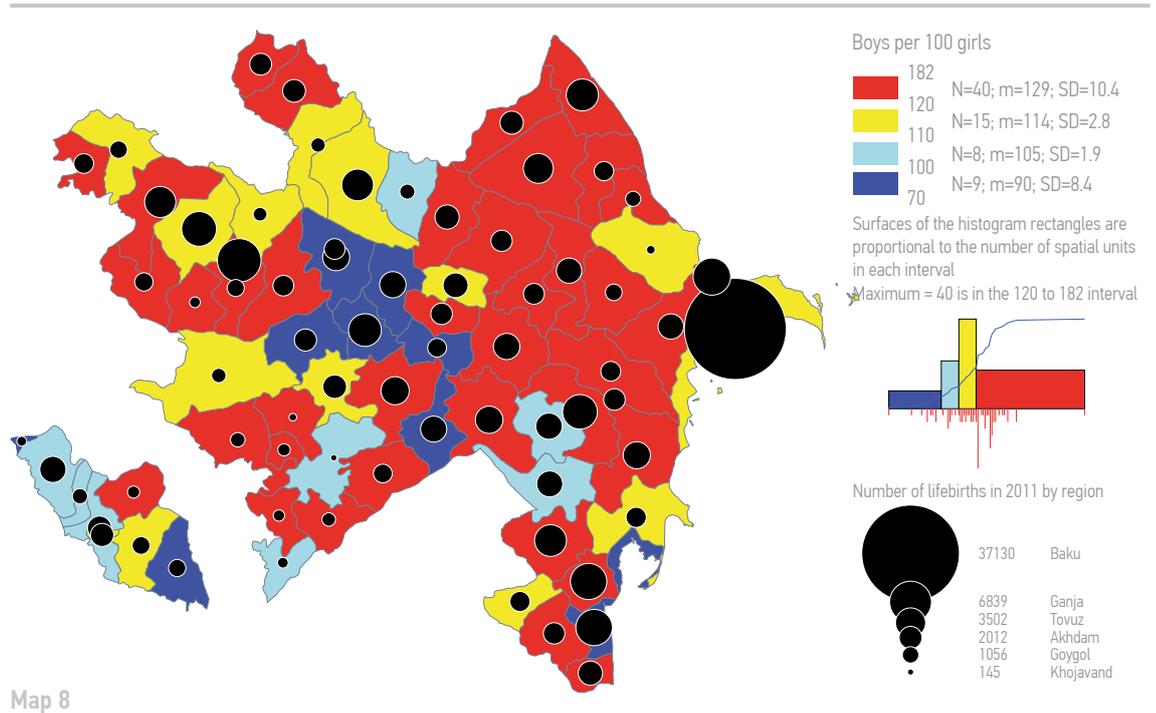


Figure 2.39



Map 8

Map 8
Distribution of territorial districts by sex ratio at birth, 2001 (rural and urban population)

depends on the number of observations and the extent of deviation.

The sex ratio at birth in 2011 was 115 boys per 100 girls according to civil registration. Significant regional variations were also apparent, from 182 in the Khojaly Administrative District to 70 in the Ordubad District. A separate analysis of urban and rural SRB revealed ratios that varied between 230 to 62 boys per 100 girls (urban) and from 394 to 72 boys per 100 girls (rural). The lower variation of this indicator at the national level is caused by the mutual compensation of rural and urban SRB (Map 8).

The difference between the average rural and urban SRBs (weighted by the numbers of births) is not statistically significant. However, the SRB distribution for rural population is 6.5 times higher compared to the urban one.

From a statistical point of view, the analysis and interpretation of the territorial variations of SRB seem to be quite delicate. In order to state that in a certain region the proportion of newborn boys (CI=95%) differs significantly from the norm, the number of observations must exceed 3,000. For example, if 2,000 births are observed and the estimated SRB is 115, then the 95% confidence interval covers a range of 105 to 125, and a hypothesis that the sex ratio is normal and the variations are random cannot be dismissed. Thus, the difference between SRB in Khojaly (209 total births registered in 2011) and in Ordubad (1,079 total births in 2011) seems statistically insignificant.

We can partially solve the problem of spatial analysis by grouping the administrative districts by the level of sex ratio at birth. Thus, in 2011 in 40 (out of 72)

administrative districts for which the data on SRB were available, the SRB varied from 120 to 180 boys per 100 girls, with an average value of 127. 47% of Azerbaijan population lived in these territories and 47% of the total number of livebirths were registered there. In addition, in 15 districts the SRB was ranged from 110 to 119 (representing 37% of the population and 34% of registered children). Therefore, in 55 out of 72 administrative districts the SRB significantly exceeded historical norms. In 2011, the SRB that could be considered "normal" (101-108 boys per 100 girls) was observed in eight administrative territories where roughly half a million people produced 7% of the total number of births (Figure 2.40).

Although none of the territories showed an SRB of specific importance/difference, a compact territorial group was observed (Mingechar city and Agdash, Bardi, Beylagan, Yevlakh, Zardab and Tartar districts), where the SRB favoured girls.

On the contrary, the highest SRBs were observed in Tovuz, Apsheron and Khojaly districts, which are located quite a distance from each other; moreover, in the border districts the SRB is much closer to the national average than to the maximum.

In Nakhichevan, 10,500 births and an SRB of 103 boys per 100 girls were registered in 2011, which is very close to the norm. We have already mentioned above Khojaly and Ordubad districts situated in this region (SRB equal to 129 and 70 respectively). These extremities compensate each other; besides, the small numbers of registered births (537 and 1079 in Khojaly and Ordubad districts respectively) make these deviations from the norm statistically insignificant.

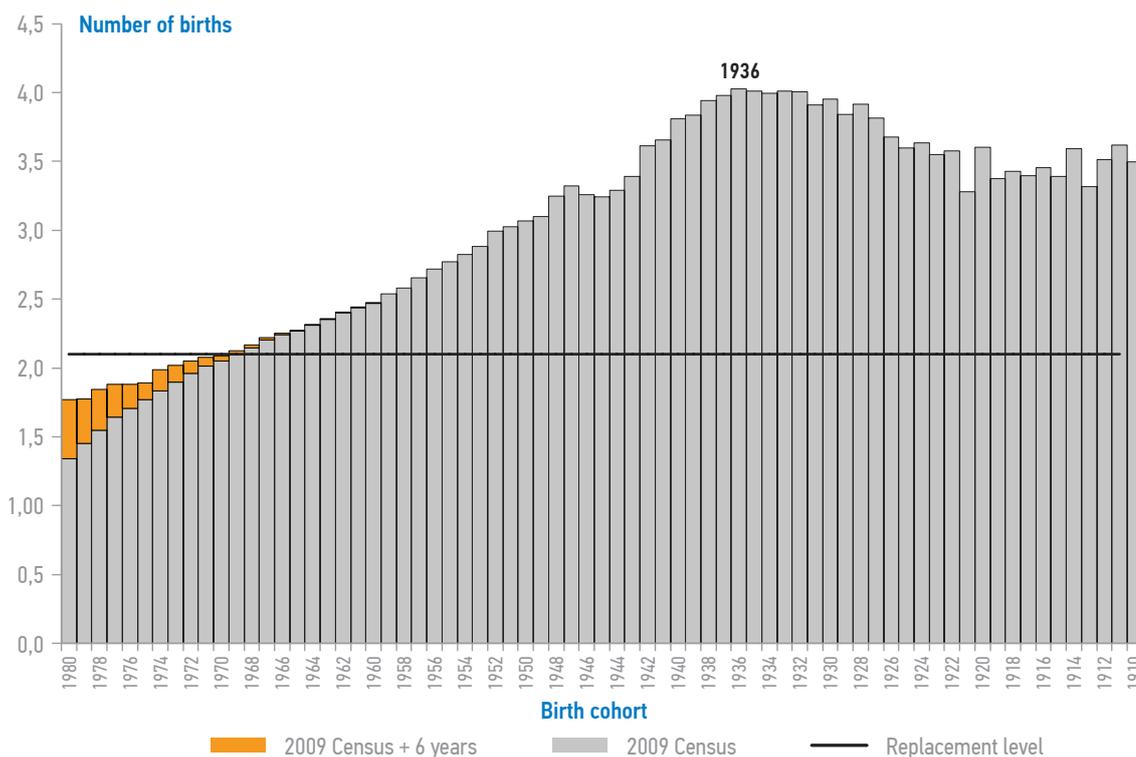


Figure 2.40

2.2.6. Fertility in birth cohorts

The fertility dynamics of birth cohorts provides an indication of the evolution of the historical norms of reproductive behaviour and of family size. As census or representative sample survey data is typically used to estimate the fertility rates for birth cohorts, data from the 1989, 1999 and 2009 censuses and the 2006 Demographic and Health Survey was extracted for this report. By combining this data with the estimated age-specific fertility rates from 2007-2011, it was possible to calculate the average number of children those women reaching 30 years of age in 2015 will produce⁸.

For women born after 1936 the average number of children has progressively declined from one five-year cohort to another (Figure 2.40). Women born in 1969-1971 and aged around 40 in 2009 already had on average the number of children equal to or below the replacement level. In 2015 these women will probably leave reproductive age having had an average of 2.08 children.

However, the risk that younger generations will stop childbearing before the replacement level has been reached is very high. Thus, women born in 1980 will have had on average around 1.4 children by 2009. In the course of the next six years this indicator will increase by 0.43, and by the age of 35 a woman from this cohort will have had 1.77 children on average. Even if the fertility rate in the age group 35 and older remains constant during the next 10 years, by the end of the reproductive period the average number of children per woman in this generation may increase

to 1.95 but this is still below the replacement level. Therefore, in the near future in Azerbaijan fertility in real cohorts may only reach the replacement level in the highly unlikely situation of an increase in fertility among women aged above 35.

The average number of children may conceal the various types of distribution of women by the number of children born. Thus, if 50% of women have one child and another 50% have 5 children, the average number of children born will be three; however the result is the same if every woman has three children.

An analysis of fertility in birth cohorts shows that the model of a family with many children is progressively disappearing, while reproductive behaviour remains more or less homogenous. Families with many children were most often found where the woman (mother) was born in 1909-1913 or 30 years later, between 1939-1943 (Figure 2.41). In both these cohorts the proportion of women who had more than three children exceeded 50%. (Interestingly, in the 1939-1943 cohort the proportion of childless women and those with one child was even lower than in the cohort born before World War I.)

However, during the 30 years between the 1939-1943 and 1964-1968 cohorts, families with many children virtually disappeared in Azerbaijan. The proportion of women with five children or more decreased by almost 10 times, and two- and three-child families became the most widespread. By the end of their reproductive lives,

Figure 2.40 Distribution of women by the year of birth and the average number of children born

⁸ Women born in 1980 were the youngest for whom the estimates were made; they were 29 years old in 2009 and would be 35 in 2015. The choice of the cohorts under study was made based on the fact that in Azerbaijan the majority of women aged 35 completes the family formation, and fertility in the age group 35-39 becomes very low – around 30 births per 1000 women.



Figure 2.41

Figure 2.41
Distribution of certain female birth cohorts by the number of children born

Figure 2.42
Parity progressions in certain female cohorts in Azerbaijan, according to the 1999 and 2009 censuses

35% of women born in 1964-1968 had given birth to only two children, while the proportion of childless women in this cohort became twice that of the 1939-1943 cohorts. Additionally, in the generations born after 1953, the proportion of childless women was higher than those with only one child.

It is important to mention the rapid convergence of completed cohort fertility in urban and rural population. According to the 2009 census, 60-year-old rural women (the 1948 cohort) had, on average, given birth to 4.1 children per woman, while women of the same age living in urban areas had on average borne 2.7 children per woman, i.e. 1.5 times less. In the younger generation, aged 40 when the census was conducted, the difference in the number

of children between rural and urban women was as low as 10%: women in rural areas had on average 2.26 children versus 2.05 children in the cities. The distribution of 40-year old urban and rural women by the number of children born was also quite similar: in the cities 13% of women remained childless, 41% had two children, 25% had three and 9% of women had four children or more. Among rural women of the same age, 14% had no children, whereas the share of women with two, three and four or more children was 31%, 31% and 16% respectively.

The parity progression represents an important characteristic of fertility in the real cohorts. It is calculated as a proportion of women with a certain number of children who go on to have another

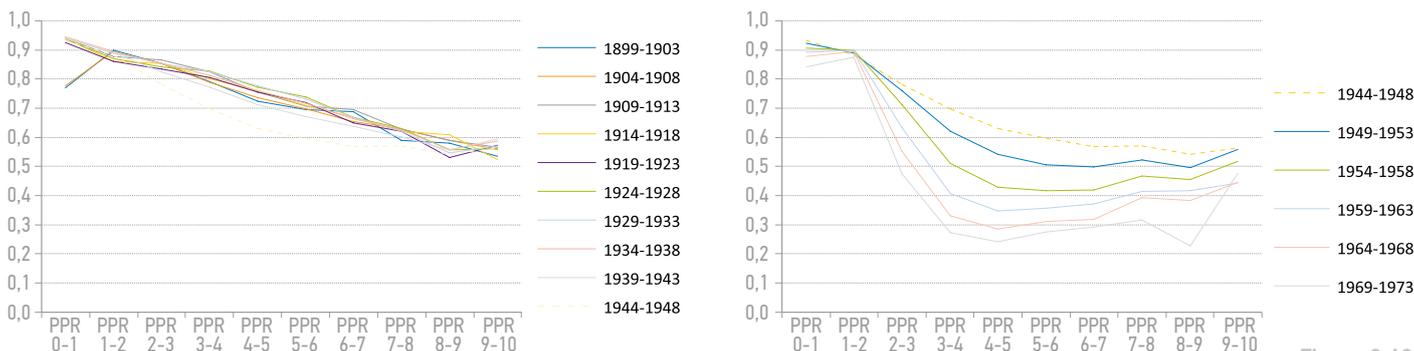


Figure 2.42

child. The models of reproductive behaviour are quite similar among women born in the first half of the 20th century. In these cohorts, with the birth of the every consecutive child, parity progression ratios demonstrate a slight progressive decrease, in correspondence with the accumulation of natural fertility factors related mainly to the spouses' state of health (Figure 2.42).

The probability of having a third and fourth child began to decrease in the 1994-1948 cohort and in subsequent generations this trend became increasingly pronounced. Concurrently, first births saw a significant decline (93%-84%), though barely any change was seen in the rate of second births, as 90% of women had a second child. However, in the 1939-1943 cohort, 83% of women had a third child, though this dropped to 43% in the 1969-1973 cohort. Thus the tendency in today's Azerbaijan is for families to have one or two children rather than three or more (Annex 3).

Fertility decline increases the "demographic value" of any birth beyond the second. The 2009 census revealed that in female generations aged above 40 the average numbers of first and second births per woman were 1.7 and 1.8 respectively. This two-child family scenario will not ensure adequate population reproduction, which requires a fertility level of 2.1 births per woman on average. Therefore, if the two-child family trend continues the third, fourth and further births may be relied upon to replenish future generations, even though these births will continue to become less frequent (Figure 2.43) and Azerbaijan will experience a natural population decline.

The demographic effectiveness of fertility depends not only on the number of children born, but also on how many survive until their mothers' age. Thus, in

the female cohorts born at the end of the 1950s, the difference between numbers of children born and those surviving was 9% (2009 census) and 16% (2006 AzDHS).⁹ Despite the decrease in child mortality rates in Azerbaijan, the loss remains an important factor. According to the 2006 AzDHS, the percentage of the children of the women born in the 1960s, the 1970s and the 1980s that did not survive constituted 9%, 7% and 4% respectively.

The mortality rate in infants under one does not explain such significant losses. The official statistics indicate that the infant mortality rate was 3-4% in early 1960s-1985 and the indicator decreased to 2-3% during 1985-1995. The official statistics show that in 2000-2001, 17 children per 1000 died before their first birthday, then the level of infant mortality decreased to 11 by 2010-2011. Additionally, the 2006 AzDHS indicates that of those females born between 1979-1988, whose period of maximum fertility would (have been) be the beginning of the 21st century, the mortality rate for the children born was slightly above 4%, that is 3.8 times higher than the "official" infant mortality rate.

The completeness and quality of the registration of infant mortality needs further investigation, particularly in rural areas where, since 2004, infant mortality has become lower than in urban areas. According to official data, in 2011 infant mortality in rural areas was around 6 per 1000 live births which is lower than in Bulgaria and about the same level as Central European countries like Hungary, Slovakia, Slovenia or Croatia, which is questionable.

Figure 2.43
Cohort total fertility (CTF) by birth order in certain female generations in Azerbaijan, according to the 1999 and 2009 censuses

⁹ In this case we talk about cumulative mortality in all ages, not only in childhood, so an older woman has a lower the proportion of living children

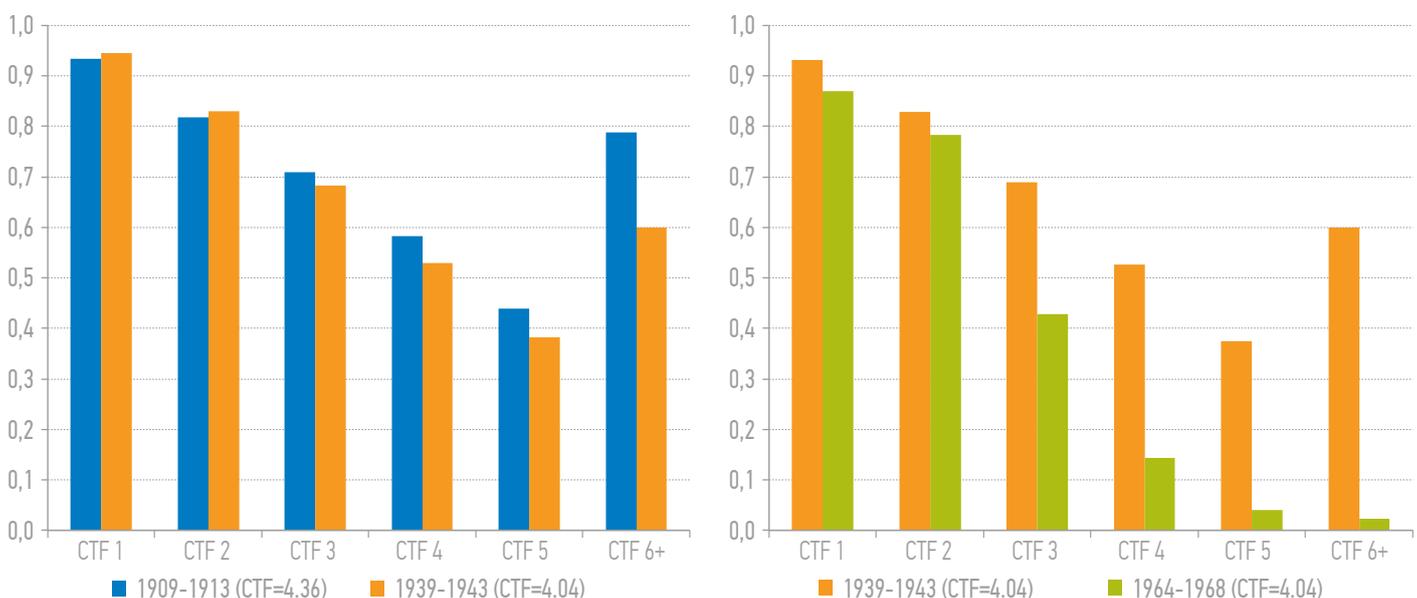


Figure 2.43

2.2.7. Changes in the family component of social capital

Fertility decline not only influences population reproduction, but also the formation of child socialisation environments, the development of social networks based on kinship and therefore the growth of “social capital”.¹⁰ In demographics, personal social capital depends *ceteris paribus* on the number of own siblings, as well as on number of uncles and aunts (i.e. parent’s siblings). Being surrounded by brothers and sisters increases the diversity of a child’s social environment and helps him/her learn the rules of conduct (socially acceptable behaviour) and to identify with gender roles in a family environment. For instance, in a family with four children – two boys and two girls – every child has at least one brother and one sister; two children have older as well as younger siblings, one child has only older siblings and one child only younger ones. This type of situation gives children the chance to learn how to behave, communicate and establish connections with older and younger, stronger and weaker siblings of the same and opposite sex. Once adulthood is reached, the kinship network enlarges when the spouses and children of brothers’ and sisters’ spouses and included in the family circle. Additionally, the enlargement of the family group assures greater formal and informal support for each family member.

Fertility decline and the transition to the two-child family model negatively affects the number of siblings in the family and decrease the size of the social network. More than 50% of the descendants of women born before 1940s have four siblings on average and therefore have a very large family network, whereas the offsprings

of women born in the 1960s (10%) have a much smaller kinship network (Figure 2.44).

As a result of the higher fertility of the past, today’s older generation has a strong social capital based on the close network of “fraternal” relations. These generations are more likely to benefit from a strong and mutual support network (“horizontal” solidarity) and the social and economic support of their descendants.

Middle aged people also have a relatively strong social capital, however, mainly with regard to their parents’ siblings (uncles and aunts) than their own which will result in less likelihood of good “horizontal” solidarity for this generation.

As fertility declines, today’s children and adolescents will lose the demographic component of social capital. Using the economic terminology, it is possible to say that the demographic assets and liabilities of social capital for the younger generations become balanced or, most probably, their ratio leads to the condition of deficit.

In such a situation, the only way to avoid the default of intergenerational solidarity is to reinforce the social policy, including such measures as financial support and social protection for the elderly. These measures are dictated not only by the general population ageing but also by the deep changes in the structure of social capital under the circumstances of transition from high to low fertility.

Figure 2.44
Distribution of offspring of certain female cohorts in Azerbaijan by number of siblings

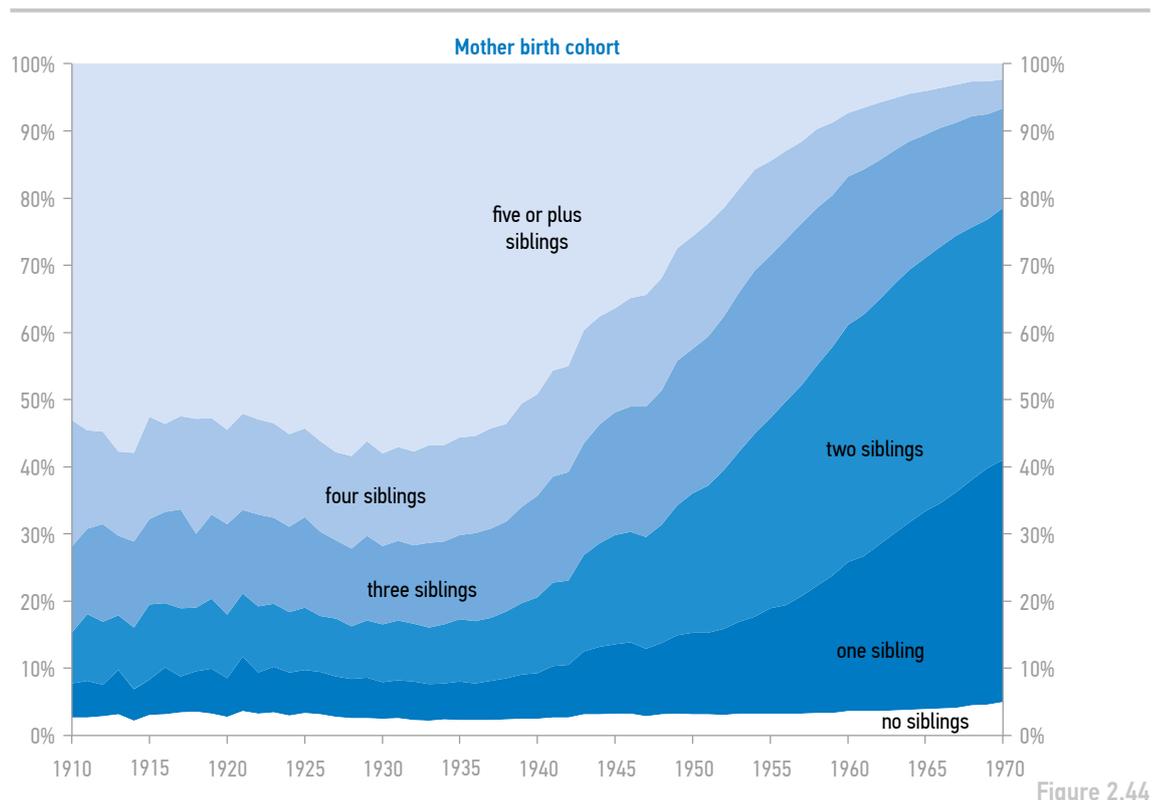


Figure 2.44

¹⁰ The concept of social capital emerged in 1980 when Pierre Bourdieu defined it as «l'ensemble des ressources actuelles ou potentielles qui sont liées à la possession d'un réseau durable de relations plus ou moins institutionnalisées (italicised by the author) d'interconnaissance et d'inter-reconnaissance». Bourdieu P. (1980) « Le capital social. Notes provisoires. », Actes de la recherche en sciences sociales, no 31, janvier, p. 2-3

2.3. Birth control and family planning

Figure 2.45

Crude birth rates and abortion ratio (per 100 live births) in Azerbaijan in 1965–2011

Figure 2.46

Age-specific fertility and abortion rates (per 100 live births) in Azerbaijan in 2004–2006 (DHS-2006) and current statistical records data

¹¹ The prevalence of birth control in the population is characterised by two basic indicators: contraceptive and abortion prevalence. The former is a percentage of in-union women of reproductive age (15–44 or 15–49 years old) who are currently using at least one contraceptive method, modern (condom, IUD, oral pills or barrier methods) or traditional (withdrawal, periodic abstinence etc.). Three main indicators of abortion level are: the number of legal induced abortions per 1000 women of reproductive age; the ratio between the number of legal induced abortions and the number of known pregnancies (or the number of livebirths); and the sum of age-specific abortion rates called the total abortion rate.

¹² A. Avdeev, I. Troitskaia. Family planning in the USSR: From abortion to contraception // In: Demographic policy and population development programs under sovereignty. Fourth All-Union seminar, Ashkhabad, November 11–15, 1991. Collection of Abstracts. Moscow, 1991

¹³ The Azerbaijan Reproductive Health Survey held in 2001 also showed the under-registration of abortions by official statistics. According to this survey, the total abortion rate calculated for a 3-year period prior to the survey was equal to 3.2 abortions per woman (2.8 and 3.4 in urban and rural populations respectively).

¹⁴ Certainly, the data from the retrospective sample surveys have some disadvantages. Sometimes women “forget” certain events of their reproductive histories that happened a long time ago. For this reason demographic rates based on the survey data are usually calculated for the two- or three-year periods preceding the survey.

A growth in the prevalence of different methods of birth prevention, such as induced abortion or contraception, represents one of the reverse sides of fertility decline. The specific weight of each method depends on specific national conditions and historical context.¹¹

Fertility decline in Azerbaijan began in the context of “abortion culture” of family planning, which originated in the USSR and became widespread in the Eastern European countries of the socialist block. Under very liberal abortion legislation and an almost total absence of modern effective contraception, “induced abortion” became the principal method of birth control. The public health infrastructure at the time made the procedure available for all social groups, so abortion became commonplace and morally acceptable (Avdeev, Troitskaya, 1991).¹²

The predominance of abortion culture does not imply that women consciously chose induced abortion as the principal method of family planning and therefore does not exclude the use of contraceptives. However, the motivation for using contraception is weak, and the old-fashioned and least effective method of birth control, namely withdrawal, is regularly used. If this results in an unplanned pregnancy and the family already has the desired number of children the pregnancy will be terminated; if the family is still forming, the pregnancy will reach full term.

Azerbaijan inherited the main institutional and legislative elements of abortion culture from the USSR:

- 1) liberal legislation allowing abortions until the 12th week of gestation upon request by a woman and up to 28 weeks in some cases;
- 2) doctors forbidden to refuse

abortion for moral reasons; 3) free abortion procedure (formally, not in reality); 4) widespread acceptability of abortion; 5) inability to meet the need for contraception overall and to provide effective modern methods in particular.

2.3.1. Abortions

Fertility decline in Azerbaijan began in the 1960s when the abortion culture in the USSR reached its peak, with close to 8.5 million abortions annually and only 4.2 million births. However, the increase in abortions in Azerbaijan was quite moderate in comparison, with the ratio between the number of abortions and births between 1965 (when abortion data became available) and 1978, increasing by only 12%. Following a progressive decrease, by 2000 the ratio had stabilized at 15%. It continues to be significantly lower than all other ex-socialist countries in Central and Eastern Europe (except Poland and Croatia) and is close to the ratios observed in Scandinavian countries. Based on the assumption that abortion statistics are accurate, the rate of abortion in Azerbaijan would appear to be at an acceptable level (Figure 2.45).

However, data obtained from the sample surveys differs from the official registration of abortions in Azerbaijan and is somewhat less positive. According to the 2006 DHS, the total abortion rate in Azerbaijan was 2.3 abortions per woman, in both urban and rural areas (AzDHS-2006 Report, p.73). This figure is seven times higher than official statistics (0.3 abortions per woman).¹³ (Figure 2.46)

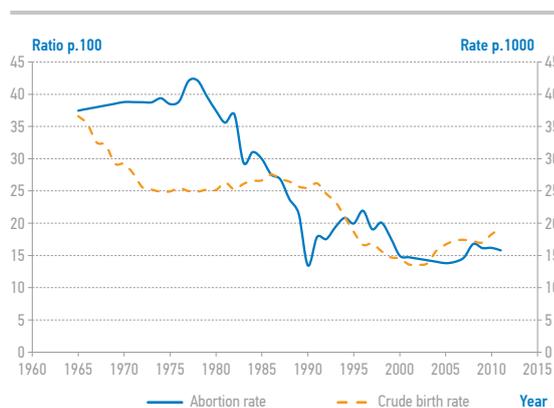


Figure 2.45

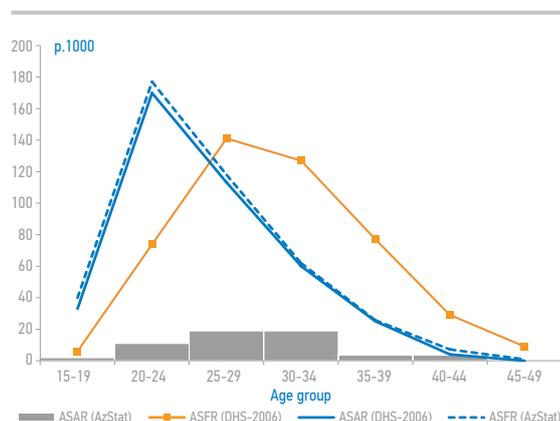


Figure 2.46

When age-specific abortion rates reported by official statistics were compared to those taken from the sample surveys, the official statistics registered not more than 30% of abortions among women aged below 20, 15% for those aged 20-34, less than 5% for those aged 35-39 and 12-13% for those aged 40 and older. The reliability of the survey data can be confirmed, to some extent, by the fact that fertility rates calculated from this data, for the three-year period prior to the survey, agree closely with the rates provided by official statistics.¹⁴

If the age-specific abortion rates (taken from the 2006 DHS) are combined with the age structure of the female population, used for calculating age-specific fertility rates, it is possible to estimate the number of abortions that were performed annually in Azerbaijan. The figure for the period 2004-2006 is 135,000-140,000 abortions per year; only 20,000 of these were registered by official statistics.

The data from the 2006 DHS clearly illustrates that the problem of induced abortion in Azerbaijan is far from being solved, and abortion still remains one of the main methods of controlling family size. The “abortion industry” developed in the framework of abortion culture continues to flourish and is one of the obstacles preventing the dissemination of modern, effective contraception.

2.3.2. Contraception

The needs of families in using the methods of birth control defined by the structure of family formation cycle. In today’s Azerbaijan women on average start their sexual life at the age of 21, (close to the mean age of the first marriage), have their second child at 27, and the third one at the age of 30. Married women aged 30 years have three children on average, and 98% of women with three children do not want additional children. This would suggest that the standard family formation period in Azerbaijan lasts for 10 years. If the age of 50 is

considered the upper limit for a woman’s reproductive age it would appear that women need to control their fertility for at least 20 years of their married life.

The theoretical need for contraception can be quantitatively measured as a ratio between the duration of the period when birth control is required and the period when the risk of pregnancy is possible; in today’s Azerbaijan this is 66%. In practice this ratio relates more to those women of reproductive age who do not want any more children and must therefore prevent further pregnancies.

Even though the family formation period is about 10 years, if no birth control is used, the family’s three children might be born within six years. Therefore even during this period of family formation a woman will need to prevent pregnancies for at least three years. Consequently, the need for contraception increases to 75-80%.¹⁵

Estimating the needs of population for contraception using pure demographic analysis could be more precise if data was obtained on the distribution of women by age and the number of children born and planned, as well as information on the proportion of sterile couples in the population.¹⁶ However, in general this estimation is very close to that of the 2006 DHS, which was based on women’s answers about their needs in birth control. According to this data, 74% of married respondents aged 15-49 had need for contraception, including 11% for birth spacing.¹⁷

The 2006 DHS revealed that only 51% of married women of reproductive age used contraception. Among them as few as 14% used modern methods: oral hormonal pills (1.1%), intrauterine device (IUD, 9.2%), condom (2.2%), spermicides (0.2%), contraceptive female sterilization (0.2%) and “lactational amenorrhea” (1.1%).¹⁸ The rest – 36.8% – used the traditional methods: withdrawal (32.5%) and calendar method (4%). The contraceptive prevalence and method-mix obtained from the 2006 DHS do not differ much

Figure 2.47
Contraceptive prevalence (percentage of users) by age group among married women in Azerbaijan (by DHS-2006 data)

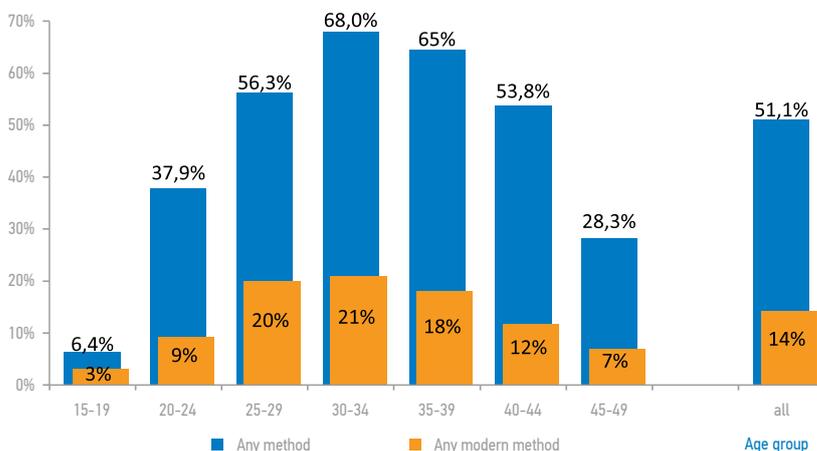


Figure 2.47

¹⁵ Using these estimations and the assumptions concerning the optimal method-mix, one could also estimate the contraceptive market in Azerbaijan, even though these estimations need additional research

¹⁶ In 1980 J. Bongaarts and S. Kirmeyer used data from World Fertility Survey in order to estimate the parameters of regression of contraceptive prevalence on different fertility indicators, such as crude birth rates, total fertility and total marital fertility rates as well as different patterns of age-specific fertility. The regression equation proposed by these authors makes it possible to calculate theoretical contraceptive prevalence (the need for contraception) in Azerbaijan. The value is close to 66% ($R^2=0.91$, regression on crude birth rate) or to 84% ($R^2=0.72$, regression on total fertility rate). See: Bongaarts, John and Sharon Kirmeyer (1980) Estimating of the impact of contraceptive prevalence on fertility: aggregated and age-specific version of a model. The Population Council, Center for Policy Study Working Papers, No. 63 (December, 1980)

¹⁷ “The total demand for family planning among currently married women age 15-49 is 74% and only 69% of this demand is met. The demand for using family planning to limit births is nearly six times as high as the demand for birth spacing purposes (63% and 11%, respectively). Overall, 23% of currently married women in Azerbaijan are not receiving the family planning assistance they require, mainly for limiting births.” AzDHS-2006, Final Report, p.100

¹⁸ Such a division between modern and traditional methods is proposed in the national report “Demographic and Health Survey” held in Azerbaijan in 2006 (State Statistical Committee (SSC) [Azerbaijan] and Macro International Inc. 2008. Azerbaijan Demographic and Health Survey 2006. Calverton, Maryland, USA: State Statistical Committee and Macro International Inc., p 53). We use here the same classification even though the lactational amenorrhea may be considered as “traditional” to a larger extent than, for instance, the calendar method, which requires special knowledge on ovulation cycle, skills in measuring of basal body temperature (symptom-thermal method) and/or observing the cervical mucus (cervical or Billings ovulation method). From this point of view, one should rather divide between “natural” and “instrumental” methods of pregnancy prevention.

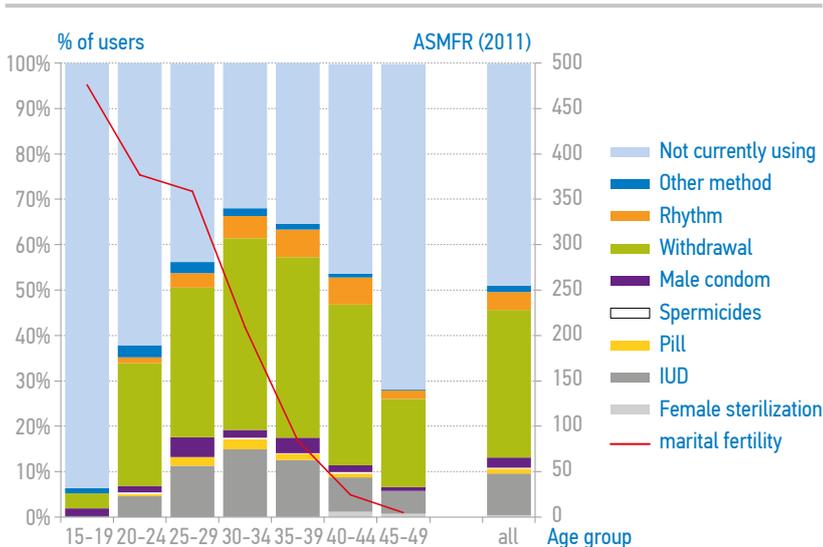


Figure 2.48

Figure 2.48
Prevalence of specific contraceptive methods (left Y-axis) and age-specific marital fertility (right Y-axis) in Azerbaijan

from the estimations taken from the Reproductive Health Survey held in Azerbaijan in 2001. According to the 2001 survey, 55.4% of married women used contraception, of which 12% used modern methods and 44% of which used traditional contraception, with the withdrawal method dominating (40.5%).

Figure 2.49
Contraception declared to be used while a pregnancy ended by induced abortion happened. Azerbaijan, 2004-2006 (AzDHS2006)

Women aged below 20 who demonstrated the highest marital fertility reported the lowest use of contraception. As women get older and marital fertility decreases, contraceptive use increases. The highest proportion of users among married women (68%) is in the age group 25-30, and commences at the age of 30 when the family formation is complete. Thereafter contraceptive prevalence starts decreasing progressively, reaching 28.3% among women aged 45-49 years whose fertility is nearly zero (Figure 2.48).

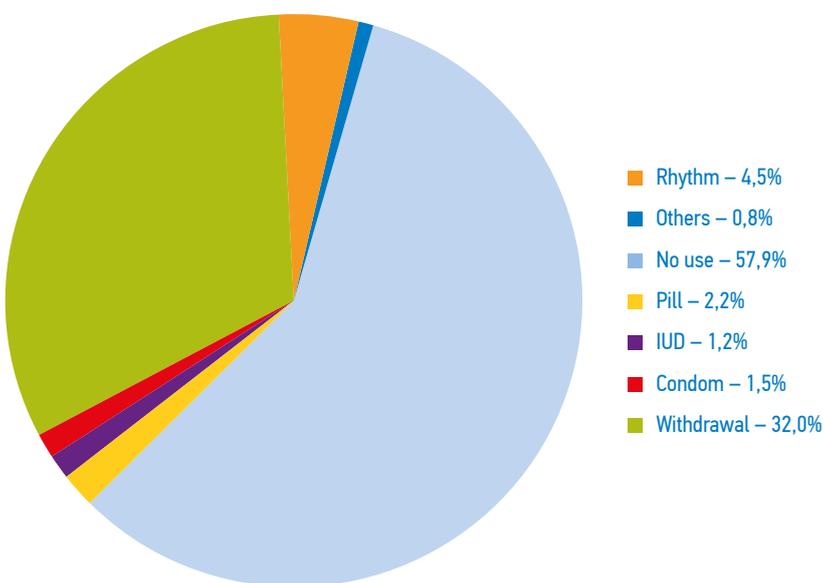


Figure 2.49

Around 64% of women using contraception reported using the withdrawal method, which is known as one of the least effective methods of birth control. Adherence to such a simple “traditional” method which requires neither medical assistance nor financial expenses represents one of the elements of the abortion culture, when an unplanned pregnancy resulting from contraceptive failure is easily ended either in induced abortion or in birth, depending on the stage of the family formation cycle.

The 2006 DHS showed that in Azerbaijan 58% of pregnancies were terminated through induced abortion amongst women who did not use contraception at all; another 37% of pregnancies terminated through abortion were due to contraceptive failures, including 32% resulting from the use of the withdrawal method. Only 5.5% of pregnancies were terminated through abortion due to the failure of a modern contraceptive method. In addition, 11% of unplanned pregnancies that occurred despite the use of contraception resulted in birth, including 8.6% from the use of the withdrawal method (Figure 2.49).

Currently almost 60% of abortions in Azerbaijan are terminations of unwanted pregnancies occurring when no contraceptive method was used. Therefore, the main reason for the relatively high abortion rates in Azerbaijan is the low level of contraceptive prevalence (in the other words, the inability to meet the high demand for contraception). The second reason is the continued use of minimally effective contraceptive methods, with traditional methods predominating. In Azerbaijan, 40% of unwanted pregnancies resulting from the use of ineffective contraceptive methods are terminated through abortion.

Reducing abortion rates should therefore become a priority for the reproductive health care system in Azerbaijan. As international experience shows, designing specific programmes aimed at the distribution of modern contraceptive methods and related information should primarily encourage positive changes in the method-mix. In other words, contraceptive prevalence stays relatively stable while contraceptive effectiveness increases, because those women actively wishing to prevent unplanned pregnancies and who are already using traditional methods will switch to modern effective contraception. Nevertheless, these initial changes in contraceptive behaviour may decrease abortion levels by almost half. The growth in contraceptive prevalence will start later, when women who had never used contraception before will start using effective methods of birth control. Abortions level will gradually fall to a minimum; pregnancy termination will become negligible and the abortion culture will disappear.

2.3.3. Preferences for the number of children in a family

The Demographic and Health Survey held in Azerbaijan in 2006 showed that for women the average ideal number of children was 2.5. For 1.3% of women preferred to have no children, 5.2% and 56.4% regarded the one- and two-children family as ideal, while around 20% stated that a family with three children was the ideal one. According to the same survey, 83.5% of women with two and 92% with three children do not want more children.

If this model of reproductive behavior persisted then by the end of reproductive period around 5% of married women would remain childless, 8% would have one, 45% – two, 33% – three children and only 10% would have four or more children. Therefore, the predominance of the two-child family ideal does not imply that every family would have two children; moreover, realistically most children would live in families with three and more children and have 1.75 siblings on average. However, this distribution of women by number of children simply ensures the replacement of generations, i.e. the equality between the number of mothers and daughters living up to the age of their mothers, provided that the sex ratio at birth (SRB) is 100 girls per 105-106 boys.

The extent to which the deviation of the “normal” sex ratio at birth (SRB) corresponds to the “ideal” reproductive behaviour can also be estimated using survey data AzDHS-2006. The survey queried both women and men about the ideal number of children in a family, including the ideal number of boys and girls. For women, the ideal number of children was 2.47, while for men it was 2.7 children.

Interestingly, women seem more realistic in their responses to the question about the ideal number of children. Of 8,276 women who gave a numerical answer, only 21 believed that the ideal family should be more than six children, including 11 women who felt that ten children was ideal. Most men, on the other hand, preferred three, four or more children in a family and were less likely than women to believe that two children was the optimum number. Of 2,513 men, who gave a “numeric” response, nine considered it ideal to have ten children, and indeed, there were those who indicated that the ideal family could be 12, 14, 15 and 20 children (Figure 2.50).

With respect to the ideal number of boys and girls, 11.2% of women and 9.5% of men did not give a specific answer. Of those women who did express an opinion, the ideal number of children was on average 2.46, including 1.30 boys and 1.15 girls, providing an ideal SRB balance of 113 boys to 100 girls. For men the average ideal number of children was 2.57, including 1.56 boys and 1 girl, providing an ideal SRB close to 156 boys to 100 girls.

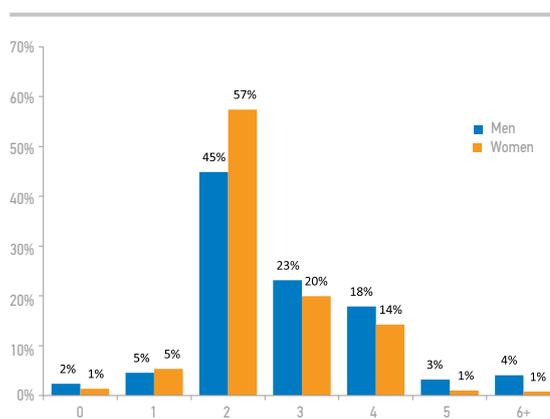


Figure 2.50

Data on the ideal number of boys and girls indicates a “male bias” in relation to gender preferences, but the extent of it should not be exaggerated. Indeed, 70.8% of women and 55.5% of men believed that the family should have the same number of boys and girls. Of these, 56% of women and 37.6% of men felt the ideal family should comprise two children - one boy and one girl, and 14.4% of women and 15.7% of men believed the ideal family should have two boys and two girls (Table 2.4).

Overall, 20% of women and 41% of men believe that in an ideal family there should be more boys than girls: 11.8% of women and 18.8% of men believe the ratio should be two boys to one girl; 3.1% of women and 4% of men a boy would be best in a one-child family; while 3.4% of women and 10.3% of men feel a two-child family should consist of two boys.

	Females	Males
Number of responses*	8 436	2 549
Did not give a «numerical» response **	11.2%	9.5%
Consider as ideal (among those who gave a «numerical » answer)		
Equal number of boys and girls (among them:)	70.8%	55.5%
one boy and one girl	56.0%	37.6%
two boys and two girls	14.4%	15.7%
three boys and three girls	0.4%	2.0%
Only boys or more boys than girls (among them:)	20.0%	41.7%
one boy only	3.1%	4.0%
two boys only	3.4%	10.3%
three boys only	0.4%	2.3%
two boys and one girl	11.8%	18.8%
three boys and one girl	0.4%	1.9%
three boys and two girls	0.4%	2.1%
Only girls or more girls than boys (among them:)	9.2%	2.7%
one girl only	1.6%	
two girls only	0.9%	
two girls and one boy	5.8%	1.9%

Table 2.4

Figure 2.50
Ideal number of children in the family according to male and female responses (2006 DHS)

Table 2.4
Ideal sex ratio for children in the family (2006 DHS)

* weighted data
** all proportions calculated using weighted data

Alternatively, 9.2% of women and 2.7% of men believe an ideal family should have more girls than boys. A girl-only family was considered best by 2.5% of women (1.6% felt it should be one girl and 0.9% two) though no male respondents agreed, whereas 5.8% of women and 1.9% of men felt that a family with two girls and one boy was ideal.

If the ideal sex ratio at birth (SRB) of children in the family is recalculated based on responses about the ideal number of boys and girls, the figure will not change for women (113), but for men it decreases to 152 boys for every 100 girls.

Thus, changes in the SRB in Azerbaijan undoubtedly reflect popular opinions about the number of boys and girls in the ideal family. It does not, however, mean that girls are neglected or renounced when they are born. Men appear to prefer to have more sons than daughters, especially amongst those preferring a one-child family, where 100% of men and 60% of women wanted a son. However, these respondents were not very numerous: 4.7% women and 4% men. Among those for whom a two-child family was an ideal (60% women and 48% men), 20% of men and 5% of women would prefer to only have boys. Among respondents reporting a three-child family as ideal, only 1.2% of women and 5.8% of men felt they should only have boys in their family.

The preference for boys among certain groups of the population does not reveal whether or not couples will attempt to “select” the gender of their children, nor if they will decide to terminate pregnancies if the foetus is the “wrong” gender. Although theoretically possible, this is not necessarily realised in practice. It is difficult to explain biased SRBs without undertaking additional studies and testing all possible hypotheses. Is the increase in the proportion of boys among newborns the consequence of a currently unknown scientific mechanism of selective screening at fertilisation and at the earliest stages of foetal development (perinatal mortality)? Or is it the result of selective accounting of birth and death in the perinatal period and infancy?

Finally, is it a consequence of gender-selective foetal abortions? The latter hypothesis tends to be the most popular and is frequently cited, despite the fact that it has yet to be proven scientifically.

The hypothesis on gender-selective abortions is popular as it is simple and seems the most sensible. Furthermore, it fits the abortion culture that finds terminating pregnancies morally acceptable.

From a quantitative point of view, the hypothesis of gender-selective abortion seems plausible, because in order to attain the SRB observed in recent years in Azerbaijan, 18,000 female foetus pregnancies would need to be terminated.¹⁹ However, to accept this hypothesis, further examination is necessary regarding how the gender of the foetus is determined before the 12th week of gestation – up to which time requests for abortion are generally unrestricted. Determining the sex of the foetus in the early stages of pregnancy is both costly and carries inherent risks for both foetus and mother. Ultrasound scanning at a later stage in the pregnancy may determine the gender of the foetus, but if the gender is ‘wrong’, abortion at this stage may be an ethical and legal problem. This raises the question of how pregnancies lasting longer than 12 weeks can be legally terminated.

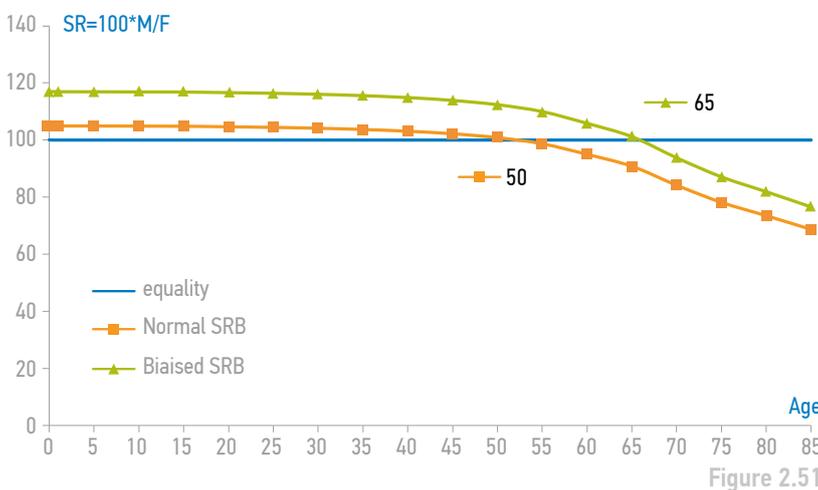
Finally, if gender-selective abortion really is the main reason for changes in the SRB, it is necessary to specifically examine to what extent the decision to terminate a female depends on the number of children already born?

Finding the answers to these questions will require, above all, adequate information reflecting the real situation in the country. It would be useful, at least temporarily, or in the framework of a specific study, to begin processing the statistics of the national civil registers regarding information on live and stillbirths by gender and birth order. This could then be supplemented by an in-depth study of selective mortality from conception to the end of early childhood (five years). Additional information on gender-preferences at birth and the reasons behind these preferences should also be obtained through sample surveys, focus groups and interviews.

In today’s Azerbaijan, mortality and the ‘normal’ SRB (105 boys per 100 girls) should develop into the following age-specific ratios: 5% more males than females under the age of 20; 4% more males than females aged 20-35; equal numbers of males and females at age 55; and less males than females beyond the age of 55. However, if the SRB was 115 boys, then there would be more men than women in each age group under 65, with 10-15% more young and middle-aged men. This would obviously affect family formation, as there would be 100 men per 89 women of marriageable age (Figure 2.51).

Figure 2.51
Theoretical age-specific sex ratios in stationary population exposed to mortality regime in Azerbaijan in 2010

¹⁹ Note that official abortion statistics registers about 20 000 legal induced abortion a year, while the survey estimations give us the numbers close to 130-140 thousands. That means that sex-selective abortions represent about 15% of unregistered abortions in Azerbaijan.



Conclusions:

- In general, fertility decline in Azerbaijan adheres to the classic pattern of demographic transition. The traditional family has become smaller as having two children has become the norm. As a consequence, the period of individual family formation (from marriage to the birth of the last child) has shortened, and families need to use contraception methods for longer periods, which normally starts when family formation is complete.
- We can identify three periods of fertility evolution in Azerbaijan: the period of gradual but consistent fertility decline from the beginning of the 1960s to the end of the 1990s, followed by the period of sharp crisis-led fertility decline which lasted until the mid-2000s, and the current period of return to pre-crisis fertility levels and dynamics. The beginning of the current period was marked by a fertility increase resulting from the postponed fertility intentions of the crisis.
- It is difficult to determine what to expect in Azerbaijan in the future. Will fertility decline, as in South, Central and Eastern Europe, to the level of 1.5-1.7 per woman on average and thus the one-child family become more common? Or, as in North and Western Europe, will the two-child family model become the norm, with a birth rate close to the replacement rate? Although the ideal two-child family continues to be the dominant trend in Azerbaijan, if the fertility rate remains high in certain groups of the population, the fertility level will remain stable enough to continue the positive population dynamic.
- Couples in Azerbaijan generally begin forming their families when women start bearing children - from age 20-22 - and finish by the age of 27-30. As a result, women aged 30 and older have the greatest need for birth control and a greater risk of unwanted pregnancies and abortion. Therefore, programmes and family planning services should pay particular attention to women in this age group.
- Currently, the prevalence of contraception and the mix of birth control methods do not correspond to the level of fertility. The inability to meet the high demand for contraception demand is the main reason for the high prevalence of induced abortions, continuing the accepted “abortion culture” of Soviet times.
- Traditional, unreliable contraceptive continue to prevail, either due to the continuation of the “abortion culture”, or to the inefficiency of family planning and reproductive healthcare services for women. Therefore, special attention should be paid to improving public awareness of modern contraceptive methods and to ensuring the availability of counselling and medical care in family planning.
- Induced abortion in Azerbaijan remains one of the main methods of birth control. It is therefore reasonable to conclude that official statistics are inaccurate and that the level of induced abortions is actually 5-6 times higher than recorded in official data. Married women older than 27-30 years old, who have given birth to the desired number of children (having completed their family formation) are more likely to risk induced abortion.
- Since the early 1990s, there has been a steady increase in the proportion of boys among newborns. In today’s Azerbaijan, the gender ratio at birth is 115-116 boys per 100 girls, which is almost 10% higher than the biological norm. The phenomenon is widespread, but in the absence of specific studies it is difficult to ascertain the cause. It is, however, possible that gender-selective abortions, which are morally acceptable under the “abortion culture”, have an important effect on the bias of sex ratio at birth.
- Significant additional research on contraception, induced abortion, gender preferences and the ideal family size is necessary to accurately understand the problems and perspectives of fertility dynamics in Azerbaijan. The research should make extensive use of the empirical datasets compiled in the framework of periodic sampling surveys. This type of research activity in the field of fertility and family planning in Azerbaijan would require the involvement of academic expertise and the creation of a national training programme for qualified specialists and researchers.

Annex 1

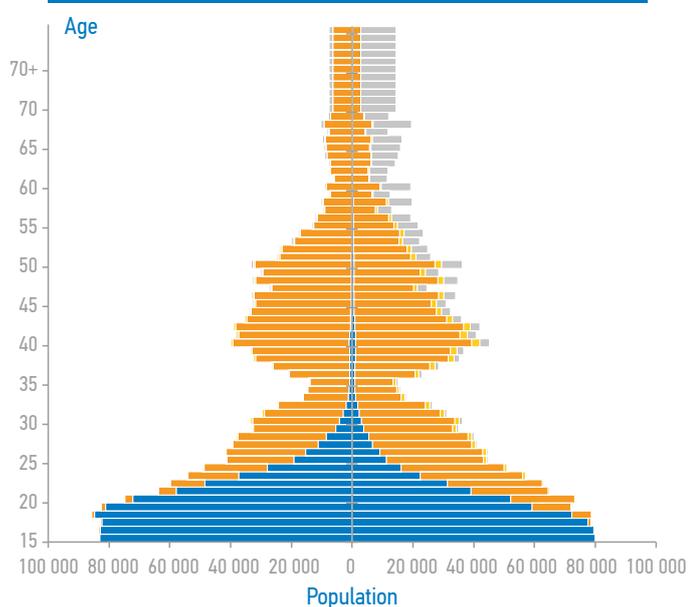
Detailed typology and prevalence of different types of family-households, based on AzDHS-2006

		Unweighted frequency	% (weighted)
I CLASSE			
1	Alone person	442	6.23%
2	Single persons family (no spouses, no parents)	104	1.61%
II CLASSE			
Couples without children			
3	Couple	487	6.82%
4	Couple no children with one parent	17	0.26%
5	Couple no children with one parent and other relatives	75	1.46%
6	Couple no children no parents with other relatives	95	1.09%
Couples with children			
7	Couples with children	3033	43.06%
8	Couple with children and one parent	722	9.43%
9	Couple with children, one parent and other relatives	90	1.10%
10	Couple with children no parents with other relatives	233	3.35%
III CLASSE			
11	Two couples (stream 2 generations)	162	2.28%
12	Two couples (stream 3 generations)	356	4.55%
13	Two couples (stream 2 generations extended)	2	0.01%
14	Two couples (stream 3 generations extended)	237	3.35%
15	Two couples (2 generations, complex)	1	0.00%
16	Two couples (3 generations, complex)	41	0.50%
17	Two couples (other stream)	58	0.71%
18	Two couples (other complex)	0	0.00%
19	Three couples (stream 3 generations)	0	0.00%
20	Three couples (complexe)	69	0.85%
21	More than 3 couples (complexe)	0	0.00%
IV CLASSE			
Mother's centred family			
22	Mother with children	668	9.14%
23	Mother with children and one parent	52	0.78%
24	Mother with children and one parent-in-law	56	0.83%
25	Mother with children one parent and other relatives	8	0.13%
26	Mother with children and one parent-in-law and other relatives	21	0.36%
27	Mother with children and other relatives no parent	76	1.20%
Father centred family			
28	Father with children	53	0.68%
29	Father with children and one parent	6	0.06%
30	Father with children and one parent-in-law	0	0.00%
31	Father with children and one parent and other relatives	6	0.05%
32	Father with children and one parent-in-law and other relatives	0	0.00%
33	Father with children and other relatives no parents	9	0.10%
34	other deformed family	1	0.01%

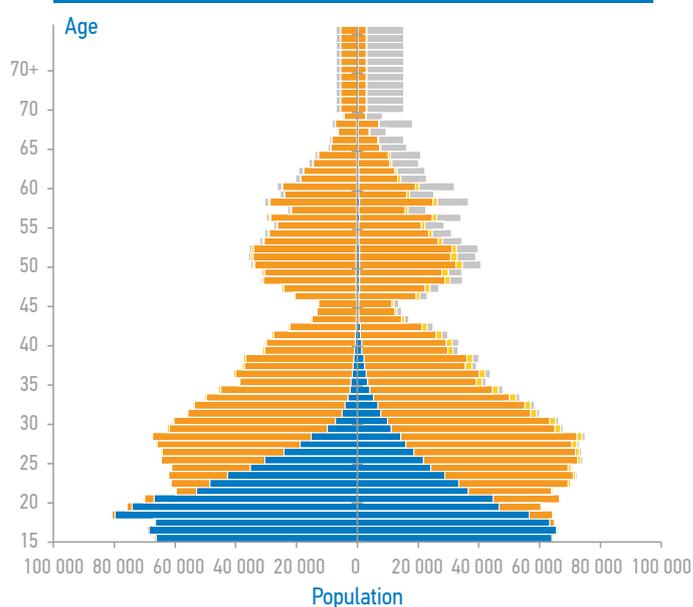
Annex 2

Population of Azerbaijan by sex, age and marital status (in accordance with the last four population censuses)

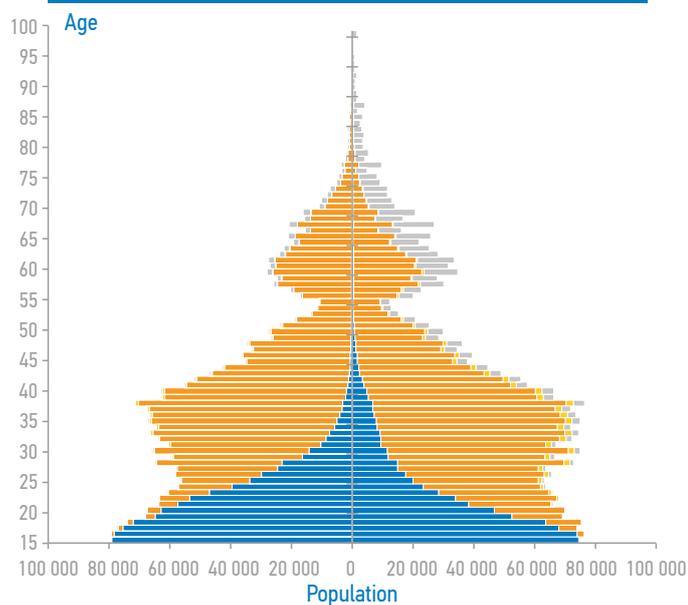
1979 (total population)



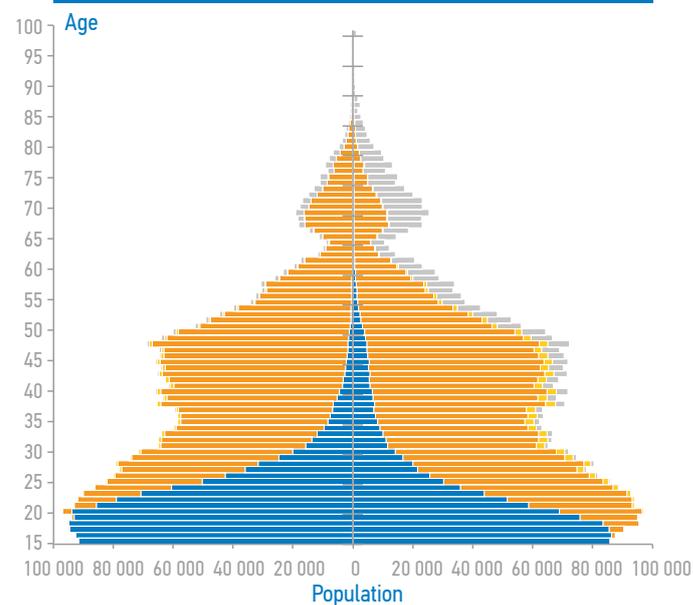
1989 (total population)



1999 (total population)



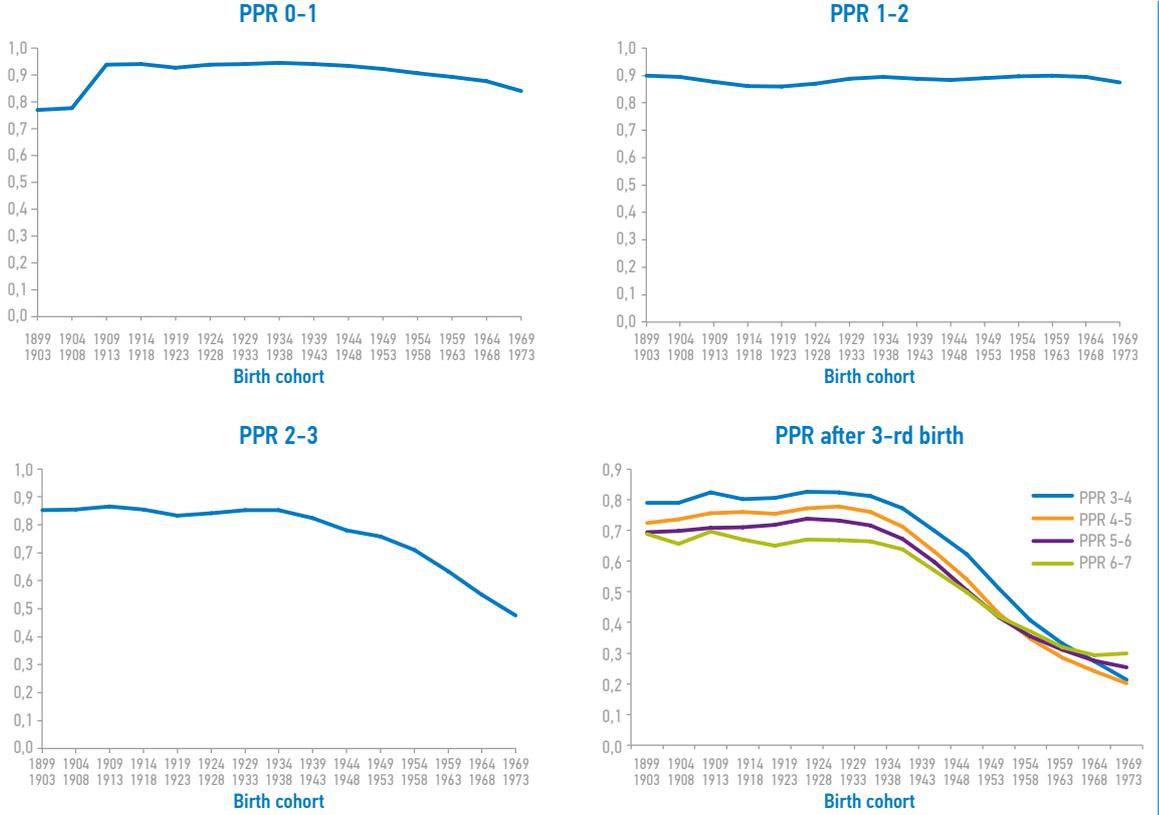
2009 (total population)



■ Never married
 ■ Currently married
 ■ Divorced
 ■ Widow(er)

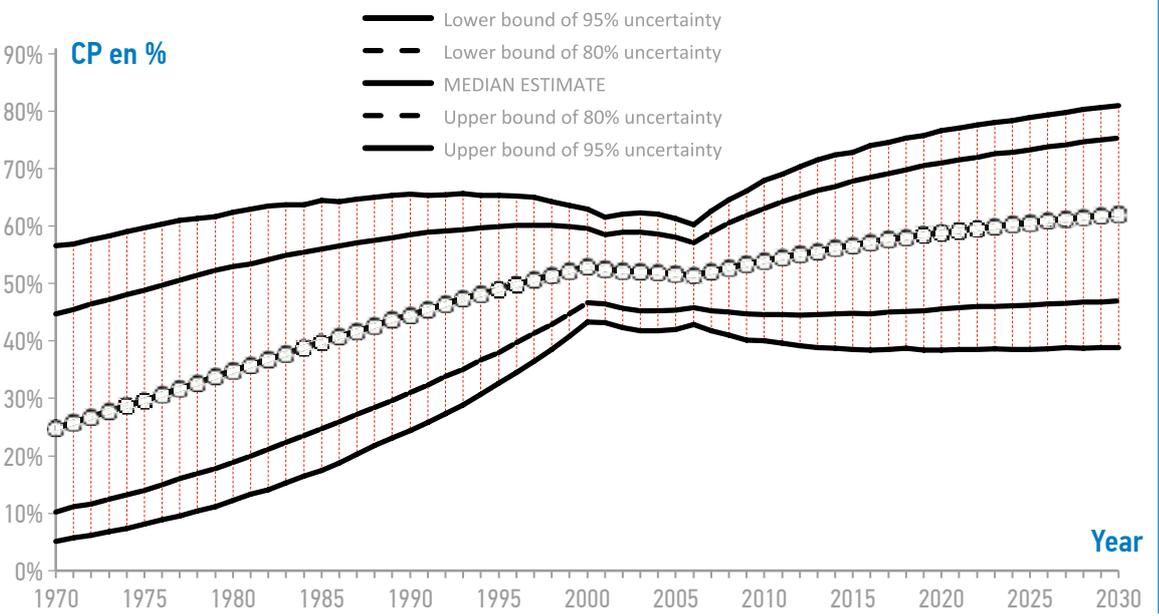
Annex 3

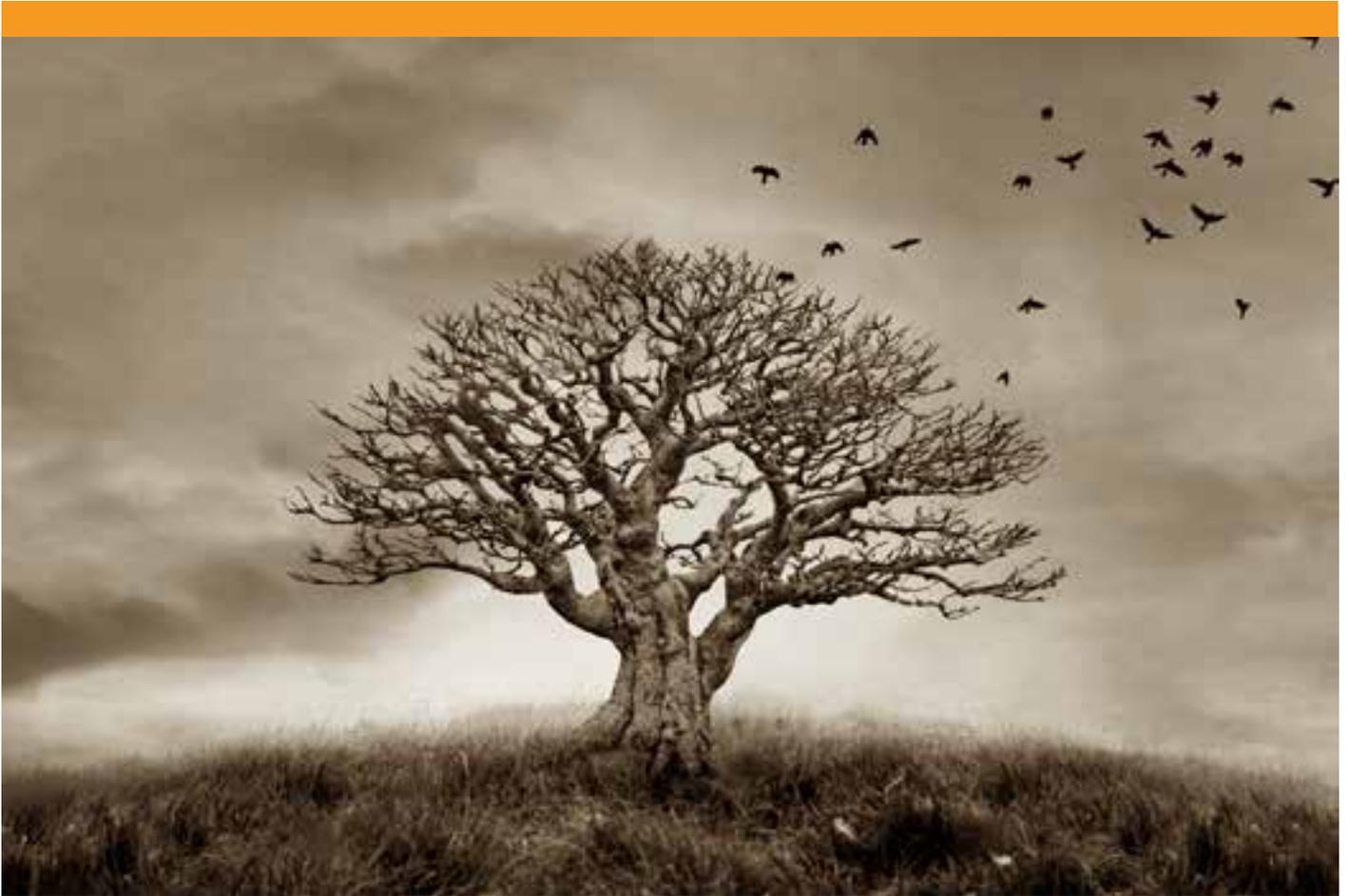
Parity progression ratio trends among birth cohorts in Azerbaijan



Annex 4

Trends and perspectives of contraception prevalence dynamics in Azerbaijan





3

MORTALITY AND LIFE EXPECTANCY IN AZERBAIJAN

INTRODUCTION: theoretical framework for analysing mortality

Historically, a decline in mortality passes through three main stages during the demographic transition period. In the first stage, improved hygienic conditions, in particular environmental sanitation, the provision of purified drinking water, timely disposal of household waste, and the development of transport and food security, reduce the risk of mortality from starvation and from infectious and often epidemic diseases. This stage began in North-Western Europe in the late 18th – early 19th centuries and the second half of the 19th century saw an accelerated decline, resulting from the introduction of pasteurisation, e.g. the introduction of asepsis and antisepsis to clinical practice as well as the development of the new methods of food conservation (the “Pasteur revolution”). The mortality rate for both children and the working-age population also decreased, especially as the threat from large-scale fatal epidemics, such as the “Spanish Flu” of 1918¹ disappeared. Eastern European countries and the USSR experienced a steady decline in mortality during the first half of the 20th century as all the above factors came together to reduce mortality at a much faster rate. During this first stage, overall life expectancy increased from 30-40 to 50-60 years.

The second stage of mortality decline, beginning at the end of the 1930s, occurred simultaneously in almost all developed countries, including the USSR. During this stage the increased access to health care, the development of national health systems, the mass vaccination of the population and the introduction of antibiotics in medical practice, reduced the mortality

caused by those endemic infectious diseases most commonly found in childhood and early childhood, as well as acute respiratory infections of microbial origin. Therefore, this period saw a large reduction in the deaths of infants and children and a less pronounced reduction in working-age mortality; the mortality rate for those aged over 55 remained virtually unchanged. By the end of the second stage life expectancy in developed countries had increased to 65-70 years for both genders. Moreover, because of the ageing of the population, due primarily to a decrease in birth rates, the crude mortality rate stabilised and even increased. Life expectancy consequently became the main indicator for mortality dynamics.

The third phase of mortality decline began in the mid-1970s due to the new sanitary and epidemiologic situation established in developed countries that changed the significance of the factors contributing to an increase in life expectancy. First of all, the medical practice began introducing modern methods of diagnosis, while maternity hospitals and obstetric departments began using new equipment making it possible to nurse babies born with a very low weight. As a result, infant mortality decreased to a very low level and by the end of the 1990s, in the most prosperous countries infant mortality rates dropped to as low as 3-4 per 1,000 live births. Thus, the potential increase in life expectancy related to a decline in infant mortality became almost non-existent.

In addition to the progress in the field of perinatology, obstetrics and neonatology, this stage is marked by the

² According to different estimates, this epidemic resulted in 50 to 100 million deaths

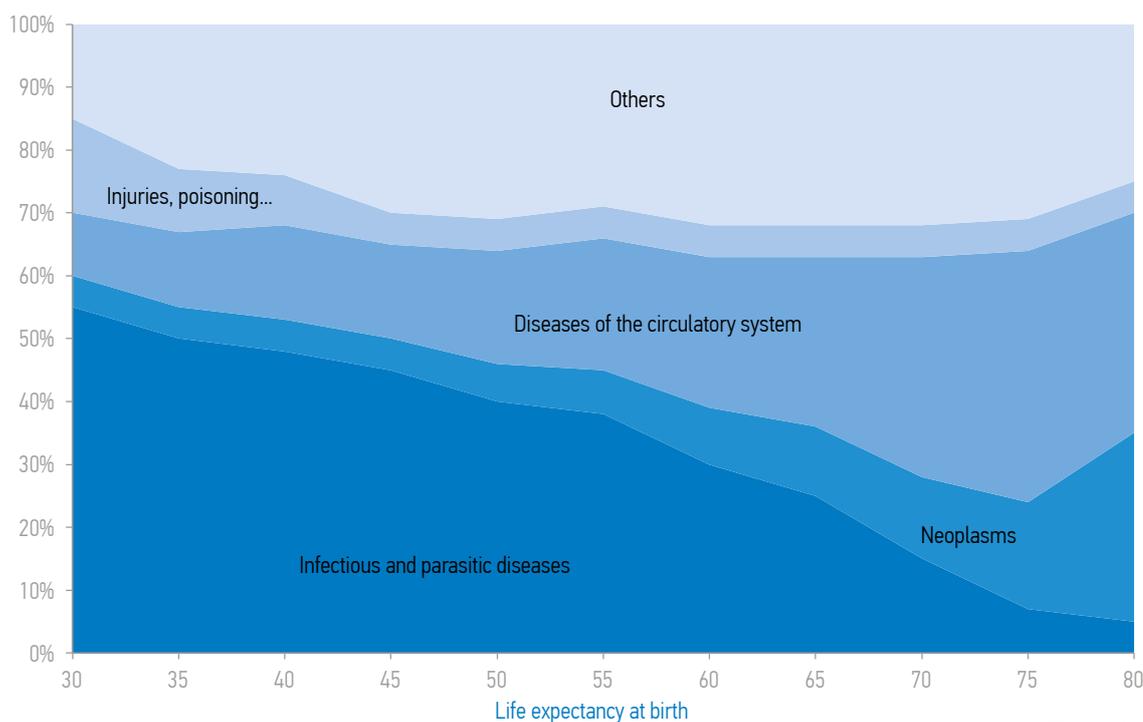


Figure 3.1

beginning of the widespread introduction of new high-tech methods of surgical and conservative treatment of cardiovascular diseases, new technologies for the early detection of cancer, and an increased propensity to the ideals of a healthy lifestyle – exercise, a healthy diet and abstention from tobacco and alcohol consumption. All these factors contributed to a decrease in mortality in older age groups as well as an increase in the life expectancy of those with incurable, non-infectious diseases, which had become the most common cause of death in developed countries during this period. As a result, by the end of the 1990s, the average life expectancy in developed countries was approaching 80 years for men and 85 years for women, with the main reason for the increase being a decline in mortality in the middle and older age groups.

Historically mortality decline has generally been accompanied by changes in the patterns of causes of death. The concept of “epidemiological transition” suggested by Abdel Omran in 1971² reflects a process by which the pattern of mortality and disease is transformed from one of high mortality among infants and children and episodic famine and epidemics affecting all age groups, to one of degenerative or non-infectious diseases, mainly cardiovascular and oncological ones (Figure 3.1).

At the current stage of the epidemiological transition, due to the development of new methods of conservative and surgical treatment of heart disease, the proportion of deaths from diseases of the cardiovascular system start to decline, while the proportion of cancer-related

deaths increases. At the same time, an overall decrease in the mortality rate is found in nearly all the groups known to be the major causes of death, including cancer.

Having summarised the most recent data on mortality structure and factors, researchers have proposed the concept of “health transition”.³ This new concept provides the formal theoretical framework for studies on mortality dynamics, structures and causes, including infant mortality and life expectancy. It is supposed that, even though mortality decline in general follows the main stages of epidemiologic transition, these stages may vary significantly depending on the specific historical context.

When analysing general mortality, two major factors must be taken into account. Firstly, the probability of death at each age, which in turn is determined by the current historical, epidemiological and socio-economic situation (present-day factor). Secondly, the characteristics of the age and sex structure of the population, which have often been affected by the historical events, demographic and non-demographic, experienced by the population during the last 100 years (historical factor). Separating the influence of these two factors is the main theoretical task in mortality analysis, whereas the practical one is to provide realistic guidelines and to identify priorities for the development of social policy and public health services in specific historical conditions.

Figure 3.1
Theoretical scheme of changes in the structure of causes of death and the growth of life expectancy in the course of epidemiological transition

² Abdel R. Omran (1971), “The epidemiological transition: A theory of the epidemiology of population change” *Millbank Memorial Fund Quarterly* vol. 49, no. 4, Pt.1, 1971, p.509–538

³ Cf. Meslé, France et Jaques Vallin (2002), « La transition sanitaire : tendances et perspectives », dans : G.Cazelli, J.Vallin, G.Wunsch (dir.) *Démographie : Analyse et Synthèse*. Vol. III ‘Déterminants de la mortalité’. Paris, édition de l’INED, p.439-461 ; Frenk, Julio, José Luis Bobadilla, Claudio Stern, Tomas Frejka, Rafael Lozano (1991), “Elements for a theory of health transition” // *Health transition review*, vol.1, no.1, p.21-38

3.1. The main trends in the levels and patterns of causes of death in Azerbaijan

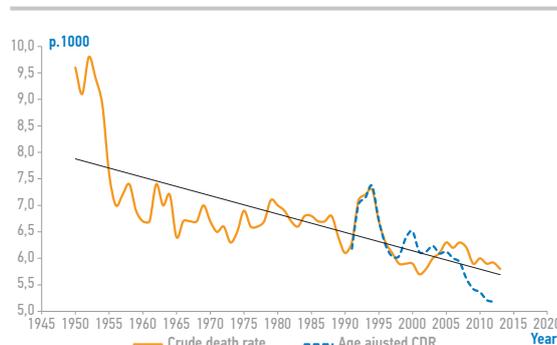


Figure 3.2

Figure 3.2
Dynamics of crude (1950-2012) and age-standardized (1990-2012) death rates in Azerbaijan

3.1.1. Historical dynamics and demographic factors of mortality levels in Azerbaijan

From a statistical point of view, little is known about the beginning of the historical decline in mortality in Azerbaijan. Regular data only became available in the second half of the 1950s when the demographic transition in mortality had entered its final phase, and the overall mortality had dropped below 8 death per 1000 population annually. (Figure 3.2). Since the beginning of the 1960s to the present day, crude death rate has only shown a slight decline, varying from 6.5 to 7‰ in the 1970-1980s and since the middle of the 1990s the value has never exceeded 6.5 per 1,000 per year.

The 1960-1980s were marked by significant and irregular fluctuations in the mortality rate. While in the 1960s variation of mortality levels reached 13% annually, in the 1970s they decreased to 6% and in the 1980s dropped to 3%. These irregular annual mortality fluctuations are usually caused by epidemics of the acute diseases. This lessening in the breadth of mortality fluctuations is typical for the final phase of demographic transition and indicates the progress of the health care system. The sharp increase in mortality in the early 1990s was a result of the armed conflict with Armenia in Nagorno Karabakh and surrounding areas. Once the internal and external political situation stabilised, mortality returned to their historical trend and, during recent years, the crude death rate has returned to a level close to 6 per 1000.

This low mortality results from the relatively young population structure in Azerbaijan (in 2012 the average age was 31.5 years) and by the fairly high life expectancy allowing 75% of men to survive until the age of 64, and 75% of women - nearly age of 71.⁴

3.1.2. Structural factors of mortality dynamics

In the second half of the 20th century, the influence of the age structure of Azerbaijan's population on the dynamics of the crude death rate was quite controversial. In the 1980s, an increase in fertility and thus an increase in the proportion of children aged less than 1 year slackened the decrease of overall mortality. In other words, the decrease in crude death rate was not proportional to the decrease in age-specific mortality⁵. At the end of the 1990s, as a result of fertility decline, the crude death rate reduced faster than age-specific mortality.

In all probability, in the early 2000s, the crude mortality rate in Azerbaijan reached a historic minimum. This could be due to the fact that in this period about 60% of Azerbaijan's population was aged between 5 and 40 years, when the risk of death is lowest. Since 2005, the age structure recovered its role of the factor inhibiting mortality decline.

Age standardised or age-adjusted mortality rate presents what the value of the crude death rate would be if the population's age structure remained unchanged; this eliminates the influence of age structure on mortality dynamics. Using currently available data it is possible to estimate age-standardised mortality in Azerbaijan since 1996. After 2000 the age-standardised rate shows a marked tendency to decrease whereas the crude mortality rate do not display a clear-cut tendency (Figure 3.2). This type of situation naturally reflects the growing effect of population ageing in Azerbaijan on the evolution of total mortality.

As mentioned earlier, population ageing in Azerbaijan began in the 1970s. To date, its impact on the dynamics of the crude death rate has, to a large extent, been compensated by the increase in life expectancy, although the mean age of the population is growing faster than average life length. Thus, from 1996 to 2001 the mean age increased by four years, while the mean life expectancy at birth for both sex increased by 3.6 years. This situation should continue into the next decade, but thereafter, the ageing population, resulting from declining fertility and growing life expectancy, will influence the crude death rate, which will begin to increase. This increase will be particularly noticeable after 2020, when the numerous generations born in the 1960s will reach the ages where there is a high risk of death.

⁴ Estimates are made by means of exponential interpolation of the numbers of survivors according to the reduced life tables for the year of 2010.

⁵ Age- and sex-specific death rates in the Soviet Republics were first published in 1988 in the statistical yearbook *Naselenie SSSR 1987 (Population of the USSR in 1987)*, Moscow: "Finansy i Statistika", pp. 326-341, including data for Azerbaijan (p.332).

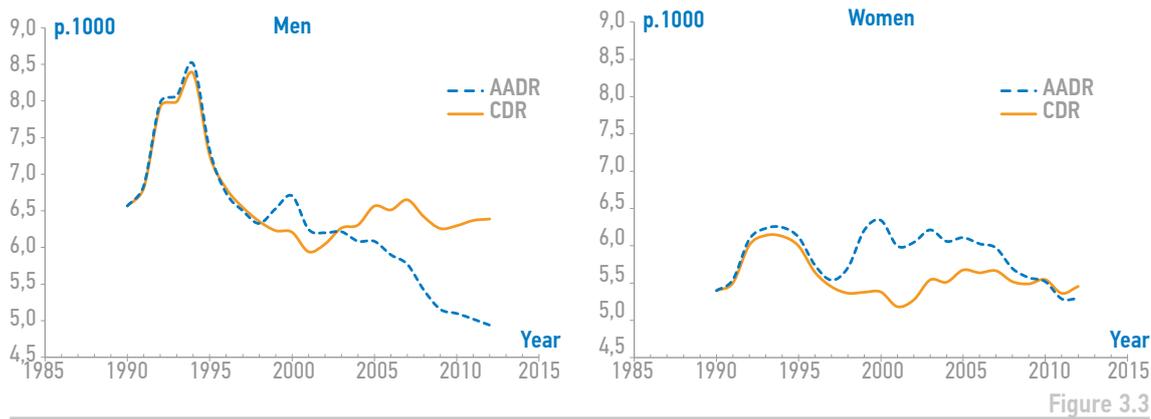


Figure 3.3

The difference in mortality rates between men and women has a significant influence on the dynamics and fluctuations of the crude death rate in Azerbaijan. For example, in 1990 the crude death rate of the male population was 21% higher than the female rate (due to the armed conflict in Nagorno Karabakh and the surrounding regions), male mortality in the whole country thus increased by 30% and became 50% higher than that of women, which increased by 15% during the same period. When the hostilities ended, the mortality rates for men and women decreased rapidly and in 1997 returned to 1990 levels. By the end of the 1990s, the difference in the crude death rate between men and women decreased to 18% and has remained roughly at this level until the present time.

Since 2000, there has been a progressive decline in the age-standardised male mortality rate in Azerbaijan. A similar steady increase of the same indicator for women began five years later. At the same time, the difference between the total and age-standardised mortality rates increased for men while it decreased for women. Thus, the characteristics of the age structure of the female population do not have a noticeable effect on the mortality dynamics in Azerbaijan, whereas the historical characteristics of the age structure of the male

population hamper the decline of the overall level of both male and total mortality (Figure 3.3).

The estimations of sex- and age-standardized crude death rates show that the gender inequality in mortality remains quite significant in Azerbaijan. The value of this indicator depends on the choice of the standard age structure, so it can be used to gauge the ratio of the mean risk of death for men and women but not the real mortality levels.⁶ In 1990, the mean risk of death for men was 1.6 times higher than for women. Until 1994, the risk of death for males increased then, between 1995 and 2010, began to decline and then stabilised (Figure 3.4).

Using the formula proposed in 1995 by E.Kitagawa⁷ we can estimate to what extent the difference between sex specific crude death rates is due to the difference in male and female age structure and to what degree it is caused by the different age-specific risks of death for men and women (i.e. age-sex-specific mortality rates). An analysis of the difference between the male and female crude death rates in 1990, 2000, and 2012 shows that the component related to the difference between male and female age-specific mortality is continually decreasing (Table 3.1). In other words, if the age structures of the male and female population were the

Figure 3.3
Dynamics of crude (SDR) and age-adjusted mortality rates, by gender in Azerbaijan, 1990-2012

Figure 3.4
Dynamics of gender- and age-standardised mortality rates for men and women (left) and the relative risk of death for men (right). Azerbaijan, 1990-2012 (standard: women, 1990)

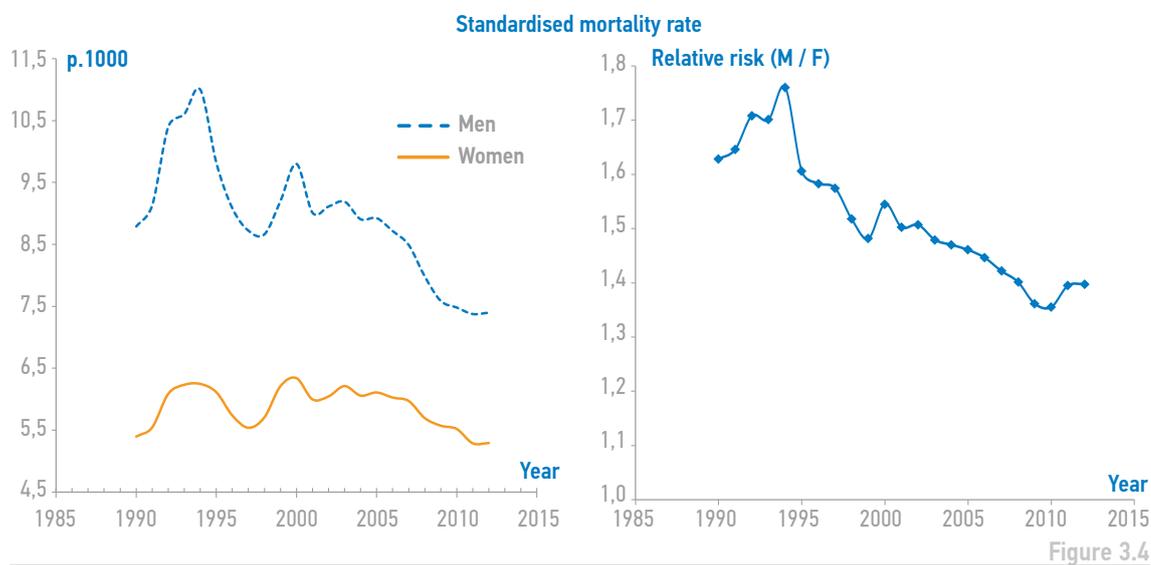


Figure 3.4

⁶ Mean risk of death is an inverse value to life expectancy. It has the same dimension as the total death rate (i.e. may be evaluated in the parts of unit, percent or pro mille / per thousand)) but, unlike the latter, it does not depend on the historical population age structure. The mean risk of death shows the real mortality in the population whose age structure is uniquely determined by the survival function of the life table. This distinguishes this indicator from the standardized mortality rate whose level depends on arbitrarily chosen standard age structure. Nevertheless, the dynamics of mean risk of death and sex- and age-standardized total mortality rate are identical.

⁷ Eveline. M. Kitagawa – “Components of Difference between Two Rates”, Journal of the American Statistical Association, vol.50, no. 272, (dec.1955), p.1168-1194

Indicators per 1000 population (‰)	1990	2000	2012
Crude death rates for men	6.57‰	6.21‰	6.39‰
Crude death rates for women	5.40‰	5.38‰	5.46‰
Sex difference (M-F) between crude death rates	1.17‰	0.83‰	0.93‰
due to differences in:			
age structure	-1.85‰	-1.92‰	-1.48‰
age-specific mortality rates	3.02‰	2.75‰	2.41‰

Table 3.1

Table 3.1

Components of difference between male and female total death rates in Azerbaijan in 1990, 2000 and 2012

Figure 3.5

Comparison of crude death rates in the urban and rural population in Azerbaijan, 1950-2011

same, the difference between the male and female crude mortality rates caused by differences in age-specific mortality would have been 3.02‰ (per thousand), 2.75‰ and 2.41‰ in 1990, 2000 and 2012 respectively.

The second component of the difference in the sex-specific crude death rate is produced by the difference between the age structures of the male and female population and, in Azerbaijan, this is negative. It means that the difference in age structures of the male and female population in Azerbaijan make for converging the crude death rates for men and women. That is, if the age-specific mortality rates for men and women were the same, the crude mortality rates for men would be lower than for women by 1.85‰, 1.92‰ and 1.48‰ in 1990, 2000 and 2012 respectively, as a result of the difference in age structures.

This analysis leads to two conclusions. Firstly, differences in the mortality for men and women in Azerbaijan appear to be decreasing. Secondly, the distorting effect of the

differences in the age structure of men and women on the dynamics of mortality accounts for about 40% of the difference in the crude death rate for men and women, however its importance is gradually decreasing. Thus, if between 2000 and 2012 the overall difference in death rates between men and women increased slightly, this increase was due only to the fact that differences in the age structure decreased faster (24%) than differences in age-specific mortality (12.5%).

The differences in the levels of mortality in the urban and rural populations of Azerbaijan are insignificant. In the 1950s – early 1960s, the crude death rate in cities was slightly higher than in rural areas, mostly because of the peculiarities of the age and gender structure of the population. From 1964 to 1990, the crude mortality rate in rural areas was on average 6% higher than in urban areas. In the 1990s, the gap reduced to 3%, and since 2004 the mortality in urban areas has become about 2% more than in the countryside (Figure 3.5).

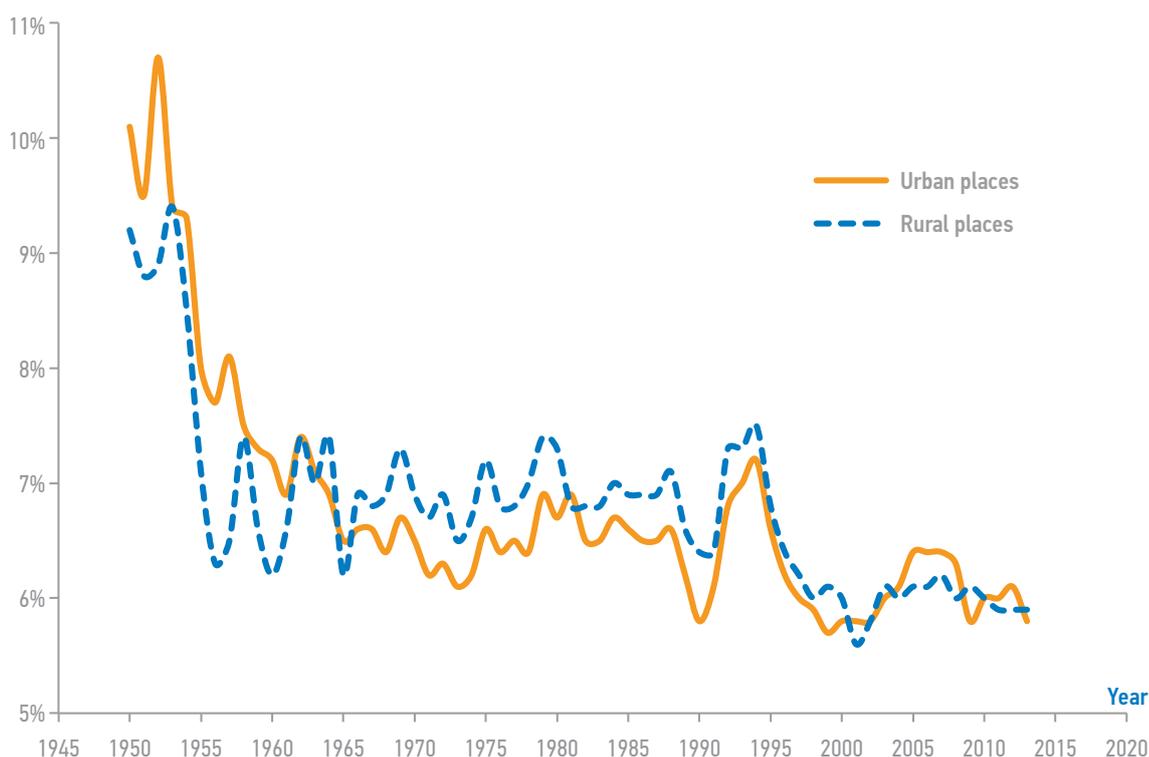


Figure 3.5

3.2. Causes of death

Mortality from the given cause first depends on sanitary situation determining the prevalence of a certain disease and second, on age structure of the population. Certain diseases only affect the young and either end in death or they develop immunity; the incidence of death in older age groups from these diseases is very rare. The prevalence of other diseases may affect all ages equally, but children and the elderly whose health is usually more fragile are more at risk of death from these diseases than the young or middle-aged. Finally, degenerative, cardiovascular or oncological diseases appear more often after mid-life, lasting for many years and can be the cause of deaths in older ages. In addition, the incidence and causes of death for men and women also differ in their structure. Thus, in a specific historical period the dynamics of the individual risk of death and the general level of mortality from a given cause may be both multi-directional and mutually compensating, and one-directional and reinforcing each other.

In the analysis of causes of death, the estimates of both the general mortality from the given cause and the individual risk of death are of great and equal importance. To estimate the general mortality level from a certain disease, cause or group of causes, one needs to calculate a rate equal to the quotient of division of the number of deaths caused by this disease by the amount of person-years of exposure (contribution, in years, of given population during the specified time period). In other words, it is an indicator of the mass, or of the mortality level “cleaned” from the influence of population size and scaled to the standard population, for example to 100 000. The values of this indicator show, among other things, the extent of the social problem and the anticipated burden on health care system related to the specific disease or social phenomenon (e.g. homicide or suicide). The crude death rate therefore represents the sum of cause specific death rates causes whose ratios correspond to the ratios of numbers of deaths from these causes. Thus, the analysis of the dynamics of the structure of causes of death is possible for any population where there is effective system of diagnostics and records of the causes of death, even if reliable data on the number and structure of the population is not available.

In contrast, determining the individual risk of death from a specific cause or group of causes is a complex problem and additional information will be required on the number and structure of the population, along with statistical summaries of the numbers of deaths by cause and age in order to provide an informative assessment. Changes in the individual risk of death from a certain cause may indicate the improvement or deterioration of sanitary conditions, the effectiveness of the health care system, etc.

Various methods are employed to estimate the individual risks of death from specific causes; the simplest and the most frequently used is age standardisation, when the death rate for each cause is calculated for some arbitrary chosen ‘standard’ of the population whose age structure is constant. The rates calculated in this way are comparable, though it is not possible to use their value to make conclusions about the real risk of death from a specific cause. However, it is possible to estimate to what extent this risk would increase or decrease if calculations were made for the same population, or to what extent this risk would be higher or lower if two different populations were compared.

3.2.1. Patterns and dynamics of mortality by cause in 1990-2011

Until 2000, the classification of the causes of death and statistical data processing in Azerbaijan were performed in accordance with the applied in the USSR short version of the 9th International Classification of Diseases (ICD-9). In 2000, Azerbaijan began using the modified version of 10th revision of this classification (ICD-10), and since 2007 the three-digit version of ICD-10 has been in use. Thus, since 1990 the classification of causes of death has changed twice, which could affect the comparability of mortality rates by cause of death during this period. Both the Demographic Yearbooks and the Azerbaijan State Statistical Committee website contain information on the number of deaths and mortality rates for the main groups of causes of death according to the ICD-10 for the period 1990-2012. In addition, the database of the World Health Organization (WHO) contains the raw data on the number of deaths by sex, age and cause, according to the ICD-9 (1990-2000), the ICD-10 modified list (2001-2004) and the ICD-10 three-digit version (2007).⁸ The same data is also available in the analytical International Mortality Database of the Centre for Population Studies, Lomonosov Moscow State University.⁹ The totals of the number of deaths in the groups of causes of death in the WHO database differ slightly from those published by the Azerbaijan Statistical Committee. This difference is probably due to the fact that the WHO data was provided by the Ministry of Health, based on the statistical reports of physicians and medical facilities on the number of diagnosed causes of death, whereas the data of the Statistical Committee was obtained from civil registration reports. Evaluating the quality and completeness of the registration of the causes of death in these two systems is beyond the scope of this review. Therefore, to simplify the analysis of changes in mortality by cause of death in Azerbaijan, data from the

⁸ Cf card. World Health Organization, health statistics and health information systems, raw data files of the WHO mortality database (http://www.who.int/healthinfo/statistics/mortality_rawdata/en/index.html) in English only

⁹ International Mortality Database <http://imdb-dmo.econ.msu.ru/> with using User Interface (English, French and Russian)

Statistical Committee has been used as it is considered official and is published in the Azerbaijan Demographic Yearbooks. This data also represents a continuous time series, from 1990 to 2012, whereas WHO database has no data for the period 2005-2006 or the years after 2007. However, when estimating the average risks of death by cause, independent of age structure, data from the International Mortality Database has been used for some complementary calculations.

During the last 22 years, diseases of the circulatory system have been the principal cause of death in Azerbaijan. Moreover, the proportion of these diseases in the structure of causes of death increased from 48% in 1990 to 61% in 2011. During the same period, the level of mortality from this group of diseases also increased by a third, from 290 to 377 deaths per 100,000 people. Prior to 2005, the death rates of men and women from cardiovascular diseases were virtually identical and their

dynamics were the same. However, since 2006 male mortality from these causes has been increasing faster than female mortality, although the difference between them is negligible: between 2005 and 2010 it varied from 2% to 5%, while in 2011 it reached 8%, when female mortality from cardiovascular diseases declined slightly while the male mortality continued to grow (Figure 3.6).

The second highest cause of death is cancer, which replaced respiratory diseases in 1998. Over the last two decades the proportion of cancers in the structure of the causes of death has not changed and is about 11% of the total number of deaths annually. However, the death rate from cancer is slowly increasing, causing 65 deaths (both genders) out of 100,000 people in 1990 and increasing to 73 in 2000. In the 1990s, male mortality from cancer was 50% higher than for female mortality. Since then the gap between genders has steadily decreased and reached 22% in the early 2010s.

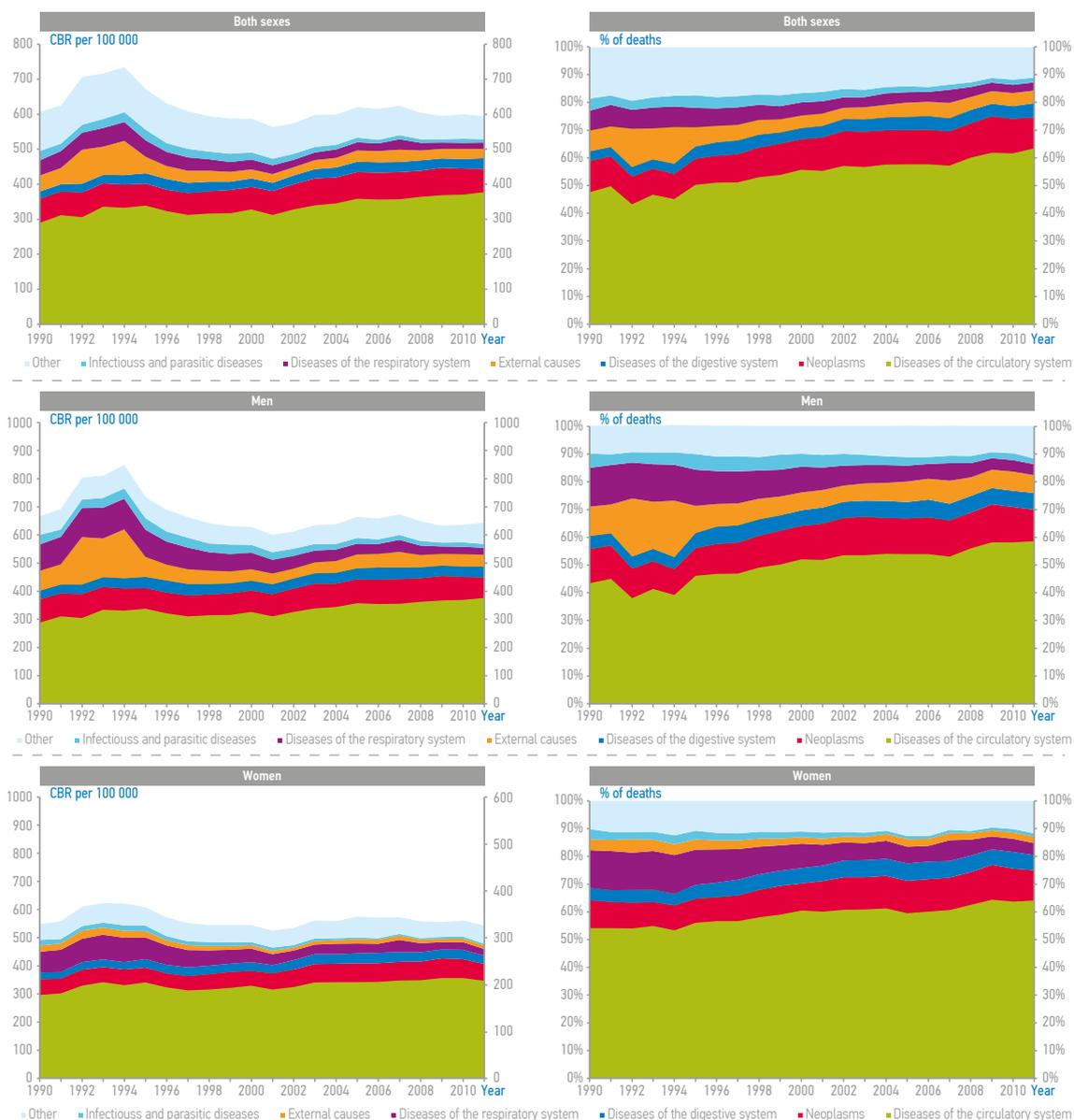


Figure. 3.6 Dynamics and structure of mortality from the principal groups of causes. Azerbaijan, 1990-2011

Note
Since the subject of the analysis is the structure of mortality, not the mortality rate, the scale of the vertical axis has been changed to make it more visible

Figure. 3.6

Today, diseases related to the digestive system are the third biggest cause of death, and accounted for 6% of all deaths between 2005-2010. During the last 22 years the share of these diseases in the structure of the causes of death showed only a slight change, from 4.6% in 1990 to 5.8% in 2011, while the death rate from them increased by almost half. Today, 20% more men die from diseases of the digestive system than women. The dynamics of the mortality rates from this disease group was uneven. Between 1990 and 1995 they were increasing simultaneously for both genders, even though for men the rates were 30% higher in comparison to women. During the next 2-3 years female mortality from this disease grew faster than male mortality, as a consequence, the difference between these mortality rates had reduced to 8% by 2003. However, in 2004, it increased to 15% and remained at approximately that level throughout 2010, despite the fact that male and female mortality simultaneously increased between 2001 and 2006 and then decreased by 2009. In 2010 and 2011 male mortality began to increase, while the female one continued to decrease, resulting in an increase in the difference between male and female mortality rates of 20%.

The fourth highest cause of death in Azerbaijan is death from injury, poisoning and certain other consequences of external causes and accounted for 4.6% of deaths during the last 4 years. The death rate from this group is about 28 per 100,000 people of both genders which is twice as low as in 1990-1991. In 1992-1994, during the escalation of the arm conflict in Nagorno Karabakh, mortality rates doubled and reach an average of 92 death per 100,000 per year. In 1995, the rates returned to the 1990 level, dropping to 30 per 100,000 and by the end of the decade and have changed little since.

Male mortality from injury, poisoning and consequences of external causes is approximately three times higher than female mortality. In fact, today injury and poisoning account for 7% in the structure of male mortality and represent the third biggest cause of death, after cardiovascular diseases and cancer, whereas in the early 1990s they were fourth. The level of male mortality from injuries, poisoning, etc., was 42 per 100,000, which is 1.7 times less than in 1990. Thus, the transition of this group of causes from fourth to third was due to a very significant decline in mortality from other causes, in particular respiratory diseases. In the structure of causes of female mortality, injury, poisoning and consequences of external causes were ranked sixth and accounted for 2-2.5% of deaths in 2000-2011. As almost 75% of deaths from these causes are reported as the deaths provoked by “unspecified events” an analysis of the social factors of violent mortality in Azerbaijan is very complicated.¹⁰

Respiratory diseases are the fifth biggest cause of death in Azerbaijan, and accounted for 4.3% of deaths between 2009 and 2011. From 1990 to 2011, the proportion of deaths caused by this group of diseases, which includes acute respiratory infections, flu, pneumonia, pleurisy and other lung and upper respiratory diseases usually

provoked by the microbial and viral infections, steadily decreased. In the first half of the 1990s, respiratory diseases were the second leading cause of death accounting for 14% of all deaths and, on average, a mortality rate of 83 people per 100,000 of both genders. After a short increase in 1994, mortality from these causes decreased rapidly. In 1999, their share in the structure of causes of death decreased to 9%, falling below that for cancer. By 2009, the proportion of deaths from respiratory diseases had fallen to 5% and by 2010-2011 the mortality rate from these diseases had fallen to 25 per 100,000. Between 1990-2003, male mortality from these diseases was 25% higher than female, but these gender rates then began to converge, becoming identical by the mid-2000s.

In the beginning of the 1990s, more than 1,000 people per year died from causes defined as “certain infectious and parasitic diseases”, including diseases such as cholera, typhus, tuberculosis, meningitis and other microbial and viral infections not included in other groups of causes of deaths from well localized diseases (respiratory, digestive or nervous systems etc.). The group “certain infectious and parasitic diseases” ranked sixth in the structure of causes of death and represented 4.4% of the annual number of deaths. The proportion declined by 2.7 times between 1990 to 2011, with the annual death rate amounting to less than 1,000 people in 2003, dropping to 700 between 2006-2011, which represented less than 2% of annual number of deaths (or 10 per 100,000 for both genders). In the beginning of the 1990s, male mortality from these causes was 1.5 times higher than female mortality. Additionally, as male mortality from infectious and parasitic diseases declined at a slower rate until 2009, in 2008 male mortality from these causes was 3 times higher than female mortality.

While mortality caused by respiratory, digestive and parasitic diseases began to decline, diseases of the genitourinary or nervous system began rise. Since 2005 genitourinary diseases have accounted for more than 1,000 deaths per year, while deaths related to diseases of the nervous system caused over 1,000 deaths in 2011. The level of mortality from these diseases, however, has not changed during the last 25 years, varying from 10 to 15 deaths per 100,000 people. This is very close to the levels of mortality caused by endocrine, nutritional and metabolic diseases, which increased between 1992 and 2006, from 11 to 18 per 100,000 people and, during the last seven years, have progressively declined, falling back to the levels occurring at the beginning of the 1990s.

During 1990-2011, the remaining causes of death represented 6-8% of deaths annually. Except for the years 1992-1996, these causes accounted for around 30 deaths per 100,000 people of both genders.

While mortality caused by respiratory, digestive and parasitic diseases began to decline, diseases of the genitourinary or nervous system began to rise. Since 2005 genitourinary diseases have accounted for more than 1,000 deaths per year, while deaths related to diseases

¹⁰ Crushing injury: 61 males + 26 females ; physical violence: 15 males + 4 females; unspecified cases: 1,449 males + 428 females; Suicides: 41 males +14 females; other : 177 males +48 females

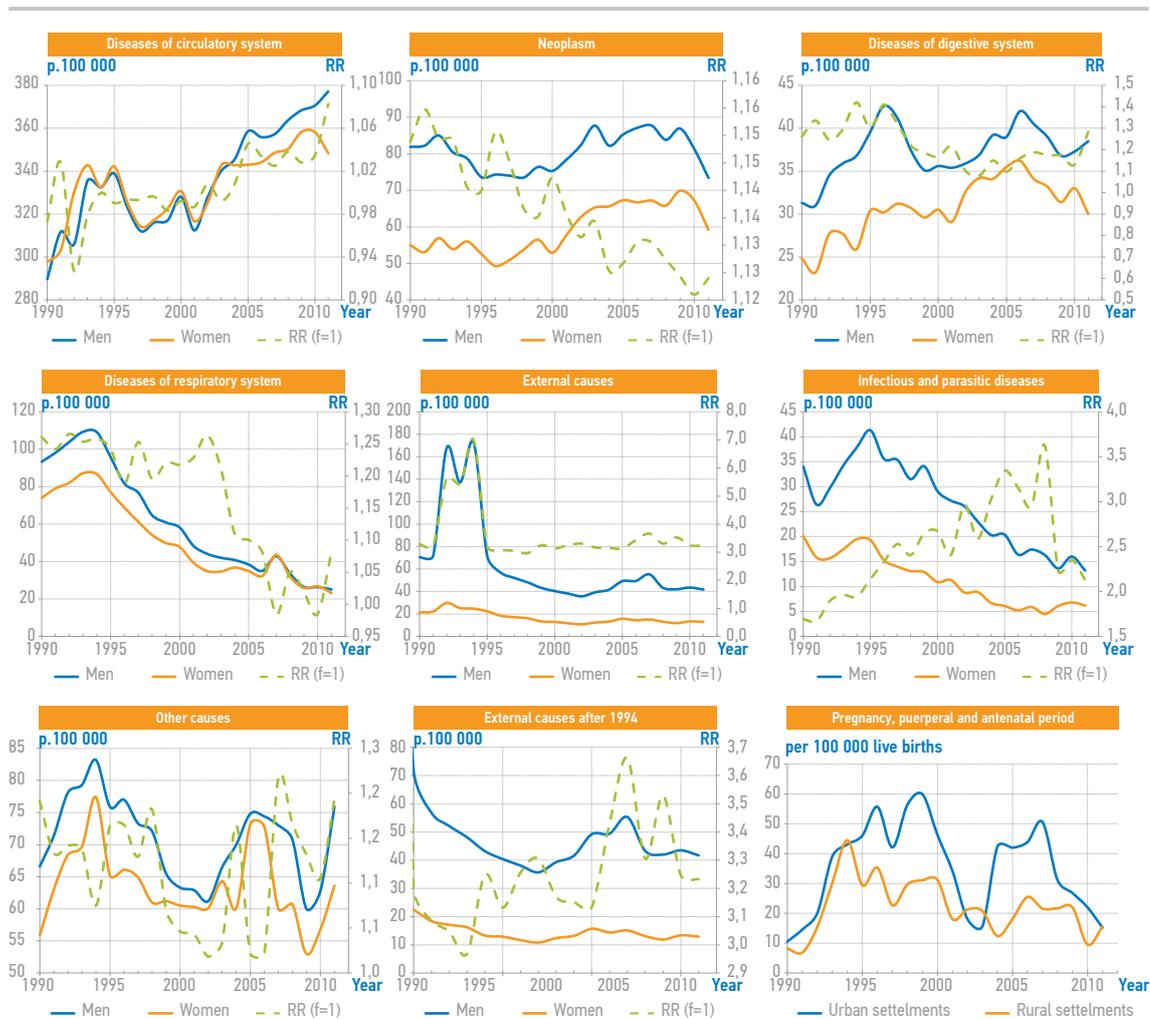


Figure. 3.7

of the nervous system caused over 1,000 deaths in 2011. The level of mortality from these diseases, however, has not changed during the last 25 years, varying from 10 to 15 deaths per 100,000 people. This is very close to the levels of mortality caused by endocrine, nutritional and metabolic diseases, which increased between 1992 and 2006, from 11 to 18 per 100,000 people and, during the last seven years, have progressively declined, falling back to the levels occurring at the beginning of the 1990s.

During 1990-2011, the remaining causes of death represented 6-8% of deaths annually. Except for the years 1992-1996, these causes accounted for around 30 deaths per 100,000 population (both males and females).

Complications of pregnancy, childbirth and the puerperium an important place among causes of deaths. As they only concern the female population, their levels are calculated in relation to the number of live births and not to the total population. In principle, in developed countries the mortality level for this group is so low that it is rarely considered as a subject of statistical analysis. In 1994, 70 women in Azerbaijan died from these causes, which was the highest number observed between 1990 and 2011. An average of 35 women died from complications related to childbirth or during the antenatal period every year during the 2000s, corresponding to the mortality rates of

25 per 100,000 live births. Although maternal mortality in Azerbaijan has experienced significant fluctuations, from 9.3 per 100,000 live births in 1990 to 44.1 in 1996, no significant increase or decrease has been observed. We observe approximately same levels of maternal mortality in post-soviet countries of Central and Eastern Europe (Albania, Russia, Ukraine, and Romania). In 2010, the lowest values of this indicator were fixed in such countries as Estonia (2 deaths per 100 000 livebirths), Greece and Italy (3 and 4 deaths per 100 000 livebirths respectively). In Azerbaijan maternal mortality increased between 1993 and 1996, and then decreased up until 2003 and 2005-2007 also saw an increase in maternal mortality, though to a lesser extent than the previous decade. Since 2008, maternal mortality has shown a decrease alongside the progressively growing number of births. Unfortunately, estimating the structure of maternal mortality is not possible, since details on mortality related to the antenatal and post-natal periods, including from deaths caused by legal or illegal abortions and their complications, is currently unavailable in Azerbaijan. As a rule, maternal mortality in cities is higher than in rural areas. In the beginning of the 1990s the difference in rates was minimal, however between 1995-1999 and 2004-2008, maternal mortality in cities was almost double that found in rural areas. During the last several years this difference has begun to decline again.

Figure. 3.7 Dynamics of male and female mortality and relative risk of death for men, by the groups of causes. Azerbaijan, 1990-2011

3.2.2. Age-standardised mortality by causes of death

As noted previously, the level, dynamics and the proportion of deaths from specific causes depend largely on the age structure of the population. To negate the effect of changes in the age structure on the dynamics of mortality from a given cause, age-standardised cause-specific mortality rates are applied, which are calculated as the sum of products of age-specific mortality from a certain cause and the share of each age group in the standard population. This method of calculation of demographic rates is called “direct standardisation”, because it provides us with ‘standardized mortality rate’, which has the same unit of measurement as crude death rate. Direct standardisation is used by the World Health Organization, Eurostat and the national statistical agencies for calculating comparable indicators of the dynamics of mortality by cause of death.

Since standardised mortality rates depend on the age structure of a standard population, in order to make the results of standardisation comparable the WHO proposed several standard populations representing an average age structure of either the world population (for developing countries) or the European population (for countries with high life expectancy and low fertility). Unfortunately, it is difficult to apply this common and relatively simple method to analyse individual risks of death from specific causes in Azerbaijan, since the official data on the distribution of deaths by sex, age and cause are unavailable.

Nevertheless, the individual risk of death from specific causes can be evaluated using available data from official sources on the total number of men and women who have died of the main groups of causes of death, using a method of “indirect standardization” well-known in demography and social statistics.

This method calculates the number of expected deaths from each cause, which could be the case if the age-specific mortality in the analysed population was the same as that of a standard population - hence this method is sometimes called the “method of standard age-specific rates.” The ratio of the actual and expected number of deaths shows the linear distance between mortality in the study population and the standard population, and the change in this distance is a measure of the dynamics of mortality, and is not distorted by changes in the age structure. This comparative mortality ratio is positive and assumes values between 0 and infinity. In order to obtain the crude death rate (number of deaths per 10ⁿ population) it is multiplied by the crude death rate in a standard population. This method is referred to as “indirect” standardisation, since the calculation of age-standardised rate is mediated by the preliminary calculation of the comparative mortality ratio.

Standardised rates calculated in this way are presumed to be comparable and their dynamics are unaffected by historical changes in the age structure of the population being studied.

Using indirect standardisation to analyse mortality by cause raises a number of, as yet unanswered, methodological questions concerning the choice of the standard used and the interpretation of the results. For example, if direct standardisation supposes the same standard for each cause of death, the indirect method will probably require the use of a specific standard for each specific cause. However, the answer to the question concerning the use of specific standards for the male and female population is less obvious. In fact, if the age-specific patterns of mortality from a given disease are caused by its etiology and pathogenesis, i.e. by the exogenous factors of a biological order, then the difference in male and female mortality may depend, to the same or the different extent, on social as well as biological factors. Given that the current levels and patterns of male and female mortality from certain causes are very different, it is probably advisable to use gender-specific standards, but it is not clear how the differences between the standardised male and female mortality rates should be interpreted. As comparative theoretical studies would need to be undertaken to obtain answers to these and other similar questions, a certain amount of prudence should be used when interpreting the results given below. However, in Azerbaijan, the use of age-standardized mortality by cause will need to continue, since distortions from changes in the age structure of the population are high.

In this report, the age-standardised rates of mortality by cause in Azerbaijan have been calculated using official statistics on the age structure of the population and the distribution of deaths by sex and principal cause groups for the period 1990-2012. Age- and cause-specific mortality rates for Russia in 2009 were used as the standard: the supposition being that the epidemiologic situation of the two countries was quite similar and that both were at the same stage of epidemiologic transition.

It is also advisable to ensure that the age-specific mortality patterns in both those populations being studied and the population being used as the standard are similar, otherwise the interference of age-specific mortality may be high.¹¹ As mentioned earlier, the International Mortality Database (IMD), of the Center for Population Studies, Moscow State University, contains information on population age structure and the number of deaths by cause in Azerbaijan in 2007. Sufficient data is available to enable estimations of age-specific mortality rates to be estimated. When these estimations are compared with the mortality rates by

¹¹ The interference is a result of reciprocal compensation of mortality levels in different age groups of compared populations when, for example in the real population youth death rates are higher and elderly death rates are lower than in the standard one. In principle, one could estimate the contribution of interference into the difference between mortality level of both populations; it may be both positive and negative but its interpretation is not clear. For more details see: Wunsch, Guillaume J. et Eveline Thiltgès (1995) – « Une confusion standardisée : variables confondantes et standardisation » Genus, vol.50, n°3-4, p.27-59

the main groups of causes (according to ICD-10) for Russia in 2009 a similarity in age patterns is apparent, even though the levels of mortality from such causes as certain infectious and parasitic diseases, cancer, injury and poisoning in Russia are noticeably higher in comparison with Azerbaijan. Equally, the gender difference in mortality in Russia is also larger than in Azerbaijan (Fig.1-1 in Annex I).

Although age-specific mortality rates in Azerbaijan in 2007 (taken from the IMD) could be used as the standard, the mortality rates by cause would not agree with those calculated from the official data of the Azerbaijan Statistical Committee. The difference would occur as the WHO data is extracted from a different source than that of the national statistical institutions, thus for some causes of death the data would coincide while for others it would differ significantly. As a result, for the year 2007 the age-specific standardised rates of mortality by cause would differ from the actual ones for that year. Mortality dynamics are therefore influenced by the activities of statistical institutions whose role in producing statistical information might change considerably over two decades. However, by using an “external” standard the idiosyncracies of the data source can be circumvented.

An analysis of age-standardised cause-specific mortality rates reveals four distinct periods in the level and pattern of mortality by cause (Figure 3.8). In

the first half of the 1990s, during the escalation of the armed conflict in Nagorno Karabakh and surrounding areas, there is a period of growing mortality. By 1993, female mortality from almost all causes had increased (by 20% approximately for each, except for cancer). As a result, the structure of female mortality by cause changed very little in this period. The decline in the proportion of deaths from cancer, from 9-7%, was the most remarkable change in the structure of causes of female mortality. The increase in male mortality up to 1994 occurred equally in all the principal groups of causes, except cancer, where a slight decline was found, and in deaths related to injury, poisoning and the consequences of external causes which increased by 2.4 times. As a result, between 1990 and 1994, the male mortality rate caused by injury, poisoning and the consequences of external causes increased from 8-15%, while death from circulatory system diseases and cancer reduced in frequency (51-47% and 13-10% respectively). But in general, the structure of male mortality by cause also changed very little during this period.

From the beginning of 1994, age-standardised male and female mortality was showing a steady decline, and by 1996 male mortality had returned to the levels observed in 1990 and female mortality reached the levels observed in 1990 and female mortality reached 1990 levels in 1998. During this period, mortality decline was accompanied by a decrease in the share of respiratory system diseases in the structure of causes

Figure 3.8 Age-standardised level (per 100,000) and structure (in %) of mortality by the principal groups of causes. Azerbaijan, 1990-2011

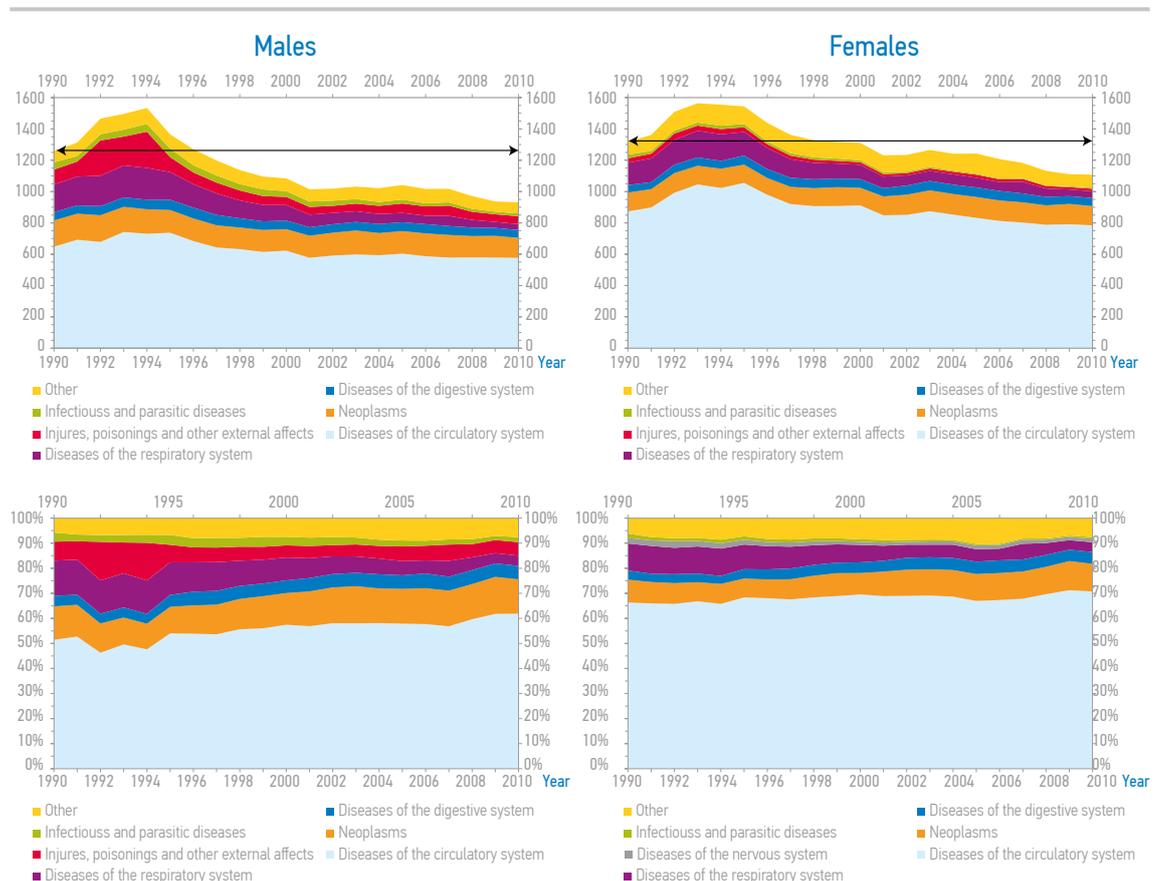


Figure 3.8

of death; having originally been the second highest cause of death in the beginning of the 1990s. In 1998, due to the rapid decrease in mortality from respiratory diseases, cancer-related deaths became the second highest group, even though the level of mortality from these causes slightly declined. The observed growth in the share of cardiovascular system diseases in this period was also caused by the fact that mortality from these diseases decreased slower than mortality from the respiratory system diseases.

Since the first half of the 2000s to the present, age-standardised crude birth rates have changed very little and the rapid decline in mortality from respiratory diseases has remained the main reason for growing

proportion of cardiovascular system diseases and cancer in the structure of causes of death.

By creating an index showing the distance between a particular reference point and the level of mortality during the period under study, it is possible to illustrate the dynamics and the trends of mortality from specific causes. A comparative mortality rate obtained from the indirect age-based standardization and normalized in relation to the beginning of the period (i.e. at starting point this index will be equal to 1) could represent such an index. If the index uses the value below or above 1 according to the mortality decrease or increase, the same index, when multiplied by 100, will show the change of mortality as a percentage. It

Figure 3.9
Indices of dynamics of age-standardized mortality by cause in Azerbaijan normalized to the year of 1990 (1990=1)

Note:
Since the standardized mortality rate by the certain reason describes the dynamics, not the real mortality level, we did modify in certain cases the dimensions of the ordinate in order to make the small changes more visible

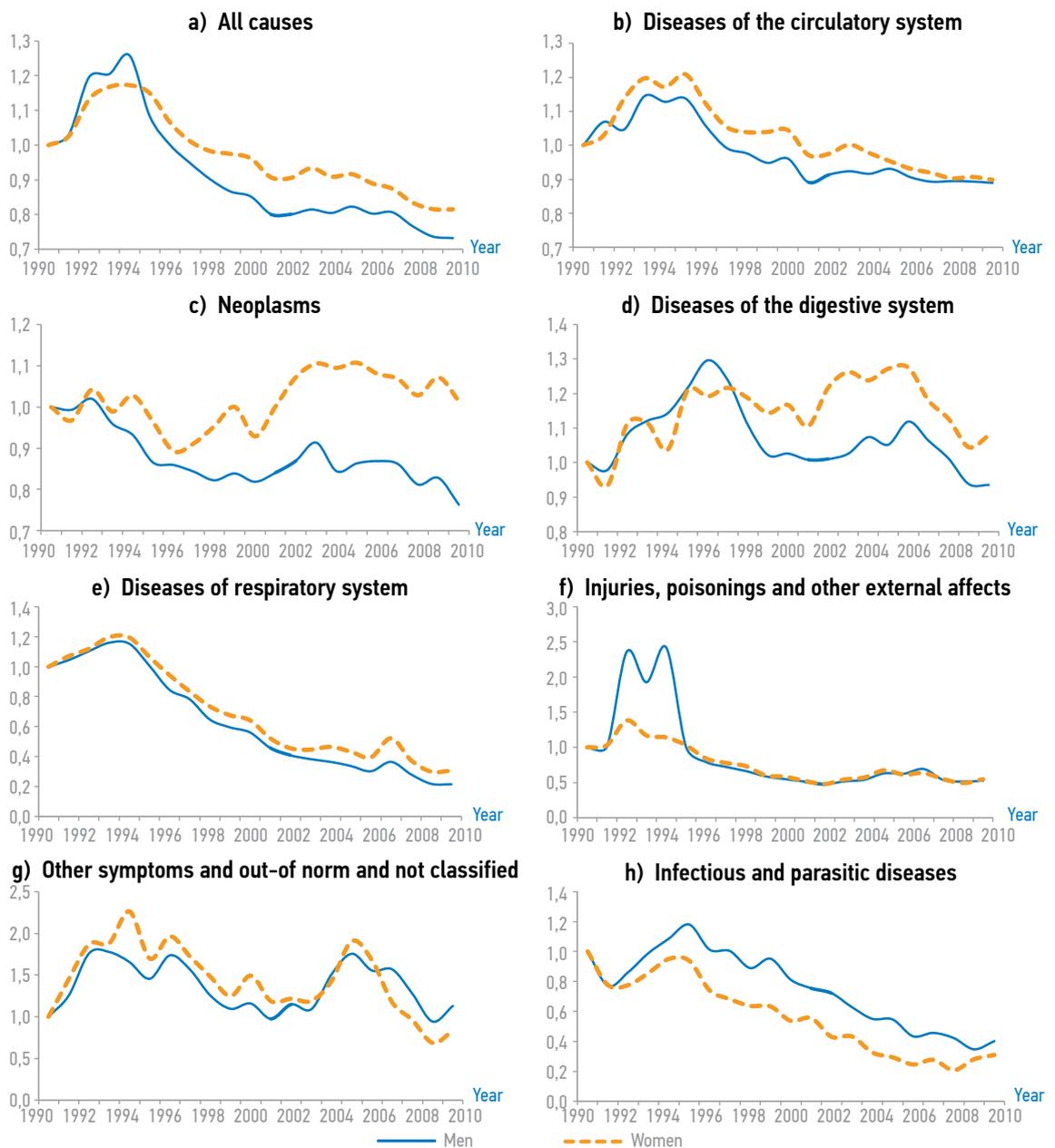


Figure 3.9

is important to note that the proposed index, like any other age-standardised mortality indicator, does not show the actual mortality level (probability) only the extent of its deviation from a particular standard.

The trends indicated by these indices show a very significant reduction in the risk of dying from the respiratory diseases and certain infectious and parasitic diseases, for which age-standardized mortality rates have decreased almost 5 times (Figure 3.9 e and Figure 3.9 h).

Mortality from cardiovascular disease, which causes most deaths, also showed a downward trend between 1990 and 2008, decreasing by 10%, although recent years have shown some stabilisation in mortality from this cause. Meanwhile, the average risk of male mortality from cardiovascular disease has remained relatively constant since the beginning of the 2000s, while for women this indicator has only stabilised in the last three years (Figure 3.9 b).

Similar dynamics are found with mortality from injury, poisoning and certain consequences of external causes. Although male mortality from this group rose rapidly during the first half of the 1990s, the average risk of death from external causes changed little between 2002 and 2010, whereas between 1990 and 2002 it almost halved (Figure 3.9 f).

The dynamics for both male and female mortality from cardiovascular and respiratory system diseases as well as from some infectious and parasitic diseases were similar, i.e. changing simultaneously and often to the same extent. This was also the case for mortality from injury, poisoning and certain consequences of external causes, except during 1991-1994, when the risk of male mortality from this group of causes increased by 2.5 times in comparison with 1.4 times for women.

With regard to cancer and diseases of the digestive system, the mortality rate from these groups changed only slightly, and the dynamics of the risk of death for men and women was different; Male mortality from cancer decreased by almost 20% between 1990 and 2000, and then remained roughly at this level, even increasing slightly. While female mortality during the first half of the 2000s was 10% higher than in 1990 and only approached 1990 levels in 2010 (Figure 3.9 c).

The risk of death from diseases of the digestive system increased for both genders between 1990 and 1996. However, male mortality quickly returned to its 1990 level, while female mortality continued to be 10-20% higher than in 1990. By the beginning of 2006, the risk of death from this type of disease had decreased for both genders, and in recent years male mortality has dropped below 1990 levels while female mortality has been about 5% higher than it was 20 years ago (Figure 3.9 d).

Interestingly, during periods of mortality growth, the risk of death from unspecified causes increased more than the risk of death from all other causes. Thus, in the first half of the 1990s, female mortality from unspecified causes increased by 2.3 times which was comparable to the increase in male mortality from injury, poisoning and some consequences of external causes; in the same period, male mortality from unspecified causes increased by 1.7 times. Similarly, during the mortality increase of the mid-2000s, the risk of female mortality from unspecified causes almost doubled while the risk of male mortality increased by 1.75 times (Figure 3.9 g).

An analysis of mortality by cause reveals that little has changed in Azerbaijan in the structure of causes of death in the last two decades. The only significant change was a marked decline in both mortality and the proportion of deaths caused by acute respiratory and other infectious and parasitic diseases, which had a certain influence on the increase in percentage of diseases of the circulatory system and oncological diseases in the structure of causes of death. For the remainder, the evolution of mortality from specific causes followed the common pattern of epidemiological transition, i.e. the growth of non-infectious diseases in the structure of causes of death was accompanied by an overall decrease in mortality from all causes.

3.3. Infant and child mortality

3.3.1. Methodological comments

3.3.1.1. Main concepts

Infant mortality is defined as the death of a child less than one year of age, while child mortality also known as under-5 mortality refers to the death of infants and children under the age of five. Since mortality during the first year of life is by far higher than during the next four years, the mortality rate for children aged 1 to 4 is sometimes used as a measure of child mortality. However, the input data as well as the methods used to calculate infant and child mortality rates differ considerably. The factors and dynamics of infant mortality are usually estimated for the period from conception until one year of age. This period is, in turn, subdivided into several stages and the specific mortality rates are calculated for each of them (Fig.3.10).

If the pregnancy ends naturally soon after conception, it is defined as a miscarriage or spontaneous abortion. The prevalence of spontaneous abortions is equal to the ratio between their number and the total number of pregnant women during the period of study. The viability of the foetus is determined by either legislation or respective healthcare regulations related to the terms of pregnancy. In the most cases induced abortion is prohibited once the pregnancy goes beyond a legally

established duration.¹² It is considered that the terms of pregnancies exceeding this conventional duration may end in live- or stillbirth. The stillbirth rate is calculated as a ratio between the number of children born dead (lifeless) and the total number of children born (both alive and dead).

The first four weeks of a child's life are known as the neonatal period and therefore neonatal mortality refers to the deaths of infants during this period. The level of neonatal mortality is the ratio of the number of deaths at age 0-27 days to the number of live births and is called the neonatal mortality rate. Neonatal mortality is further subdivided into early (the first 6 days of life) and late (7-28 days of life) mortality. Finally, the mortality of children aged 27+ days but under one year is called post-neonatal and is equal to the ratio between the number of children dying at this age and the total number of live births.

The overall infant mortality rate can thus be represented by the sum of three components: early neonatal, late neonatal and post-neonatal mortality, and is measured by the ratio of the number of children dying during the first year of life to the number of live births during the period for which the rate is being estimated.

Figure 3.10
Classification of pregnancy outcomes and infant mortality, by duration of pregnancy and child's life

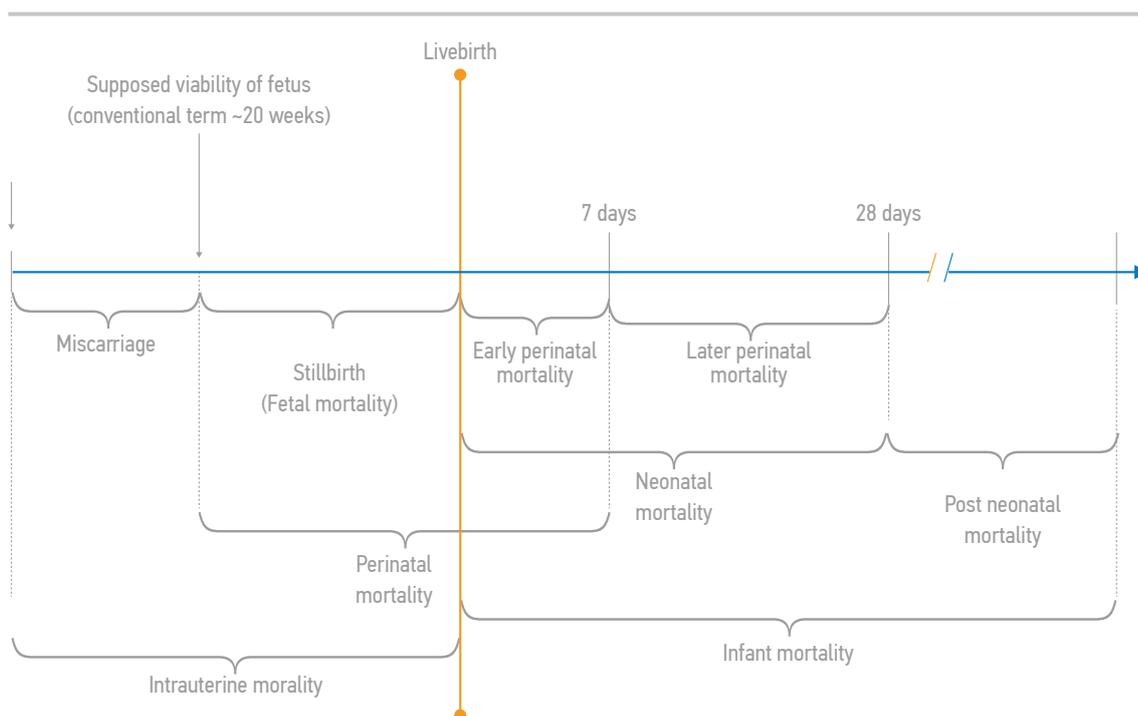


Figure 3.10

¹² If pregnancy poses a grave health problem it may be interrupted irrespective of its duration and the interruption is registered as induced delivery

In addition to the above-mentioned indicators, infant mortality can also be defined using the perinatal mortality rate which is equal to the ratio of the sum of numbers of stillbirths and live-births ended in death during the first week of life, to the total number of live and still births. The perinatal mortality rate measures the mortality of a viable foetus before (prenatal mortality), during (antenatal mortality) and immediately after delivery (early neonatal mortality). Perinatal mortality rates are commonly used to measure the effectiveness of the obstetrics, perinatology and neonatology care provided by public health authorities.

3.3.1.2. Indicators of infant and child mortality

Several different methods can be used to estimate the infant mortality rate. The simplest is to calculate it as a ratio of the number of infant (under the age of one) deaths to the number of births during the same time periods. This method is frequently used in sanitary-epidemiological studies because the infant mortality rate calculated in this way represents the exact sum of neonatal and post neonatal mortality rates. Because the number of babies who have died during a calendar year also includes those born in the previous year, this method may lead to the wrong interpretation of infant mortality dynamics, either because of fluctuations in the annual birth rate or changes in seasonal fluctuation of births. Demographers therefore prefer to use a different method for calculating infant mortality, by which the number of infant deaths in one calendar year is divided by the number of infant deaths that could theoretically occur in that year. The infant mortality ratios calculated using this methodology are similar to the concept of the probability of dying in the first year of life and the value differs from the sum of neonatal and post-neonatal mortality. Statisticians employ diverse methods to calculate infant mortality rate including the simplest and most widely used method – the Rahts' (Johannes Rahts, 1854-1933) formula that correlates the number of children that have died during the calendar year with the weighted number of births during the given and the previous year. In the formula, the number of births for two consecutive years have weights that correspond to the proportion of children born in the given and previous year among those that died in the given year before reaching the age of one. This proportion depends, in turn, on infant mortality; it increases if infant mortality decreases. The Rahts' formula can therefore only be used if data on birth and death numbers is available, which in most countries it is. More complicated formulas, based on information regarding the distribution of deaths by age and year of birth, also exist.¹³ As infant mortality declines, the mortality rates obtained using different methodologies become closer. This is because the lower the infant mortality, the more densely the infant deaths concentrate in the very beginning of a child's life, the first week or the first

month. Thus, the proportion of infants that were born the previous year and die before completing the first year of age decreases as compared to the overall infant mortality rates.

Most demographic indicators require data on population size and age structure obtained from population censuses or nationally representative sample surveys, however infant mortality rates can be calculated using annual data of vital statistics. Hence, one can even estimate the infant mortality for population whose size and age structure are unknown. Thus, it is possible to calculate the infant mortality rate, even if accurate data on the total population number and structure is unavailable.

However, the accuracy of the estimates of infant mortality is almost entirely dependent on the effectiveness of the system of civil registration and vital statistics. For this reason, infant mortality rates play a key role in demographic statistics and also represent the social indicators of the effective system of obstetric care, civil status registration and vital statistics.

Child mortality, whether that of children aged below 5 or aged 1-4, represents the ratio between the number of deaths at this age and exposed population or the number of years lived at this age. Hence, in order to calculate the child mortality rate, information on the population age structure must be obtained from census or from intercensal estimates and projections.

As a rule, infant and child mortality rates are calculated for a period of one calendar year, especially since available statistics tend to provide information on births and deaths during this timeframe. It is useful, however, to calculate these rates for a longer period, for example, if the annual number of events under study is insufficient. For instance, when estimating infant mortality using survey data, the rates are usually estimates covering the 3-5 year period prior to the survey year. This extended observation period increases the number of cases (births and deaths) and assures the statistical significance of the results. Nevertheless, the indicators of infant and child mortality are always provided on an annual basis irrespective of the period of calculation.

3.3.1.3. The procedure of registration and statistical accounting of infant mortality

Calculations of infant mortality in general, and early neonatal mortality in particular, largely depend on the legislative definition of a live birth, and the procedure and thoroughness of the civil registration system. Thus infant mortality dynamics may reflect both the actual changes in the risk of death during the first year of life (e.g. as a result of the improvement or deterioration of sanitary conditions) and changes in and the practical application of the procedure and classification of pregnancy outcomes, civil status, etc.

¹³ Cf. McGehee, Mary A., «Mortality» in J.S.Siegel and D.A.Swanson (ed) *The Methods and Materials of Demography*, 2d edition, 2008, p.285

The criteria used to categorise live births and the fetus viability tend to determine pregnancy outcome statistics, dividing them into live and stillbirths, and stillbirths and spontaneous abortions. Today, most countries use the 1950 WHO definition for registering live births. According to the 1977 revision, the WHO defines a livebirth as “the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any evidence of life such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut, or the placenta is attached”.

by the obstetric facilities as live births and should thus receive proper emergency care, if deemed necessary. The instruction specifically dictates the provision of tracheal intubation immediately after delivery in cases where the newborn has a very low weight (low = 1,500 to 2,444 grams, very low = 1,000 to 1499 grams, and extremely low = 500 and 999 grams. Despite the fact that the duration of pregnancy is not taken into consideration, the instructions define a ‘fetus’ as a newborn if the pregnancy has lasted 22-27 weeks, while pregnancies of 28-36, 37-41 and above 41 weeks are defined as premature, full term and overdue. These definitions are merely used for the mobilisation of medical staff and equipment in the obstetric facilities.

¹⁴ Velkoff, V. and J. Miller (1995), “Trends and Differentials in Infant Mortality in the Soviet Union 1970-90: How Much is Due to Misreporting?”, *Populations Studies*, Vol. 49, No. 2, pp. 241-58.

¹⁵ In this case, we can refer to the 2006 AzDHS Final Report (Azerbaijan Demographic and Health Survey 2006. Calverton, Maryland, USA: State Statistical Committee and Macro International Inc., 2008, p.110). In the same report it is also mentioned that if we used the Soviet-era definition of infant mortality, the rates calculated on the basis of survey data would be quite close to those reported in official statistics for the period. One can find more detailed discussion about the influence of registration rules on infant mortality rates in the Final report of the 2001 Azerbaijan Reproductive Health Survey which confirmed the coexistence of two systems collecting data on birth and infant deaths. One of them is based on data received by the department of medical statistics of the Azerbaijan Ministry of Health from the medical facilities; another one provides the information sent from the civil registration offices to the State Statistical Committee. The authors of the Report do not say which system works better, since there is no any comparative quantitative analysis of these two systems (Reproductive Health Survey. Azerbaijan 2001. Final report. Azerbaijan Ministry of Health, State Committee of Statistics, Centers for Disease Control and Prevention, USA, 2003, p.102). In general, in the publications of the international organisations working on population issues in Caucasus and Central Asia, not much attention is paid to the demographic situation and population problems in Azerbaijan.

¹⁶ We remind that, according to the Ministry of Health instruction of 3 October 2003, the normal pregnancy has to exceed 37 weeks of duration. So, if the pregnancy which lasted less than 9 months ends with a stillbirth, then birth and death registration is not presumed, even if the medical facility provides a stillbirth certificate. The estimation of pregnancy duration with the precision to one week represents, however, a very delicate problem.

Many countries have also introduced their own live birth definitions, such as duration of pregnancy (28 or 20 weeks), length (35 or 30 cm) and weight (1,000 or 400 g) of a newborn. For example, in the USSR children who died during the first week of their life were not considered as live births if the pregnancy lasted less than 28 weeks, or their length was less than 35 cm, or their weight was less than 1,000 g. In some countries, as was the case in France before March 1993, if a newborn child died before the birth was registered, this was not recorded in the civil register.

In the first half of the 1990s, many ex-Soviet countries began officially using the new definition of infant mortality, even though certain limitations and conditions were kept which were indispensable for the civil registration of births and infant deaths. Infant mortality rates will show an increase of approximately 20-25% as a result of the application of this new definition.¹⁴ In some countries (Armenia, Moldova, Lithuania) the application of the WHO definition produced a significant growth in infant mortality and its neonatal component. In the others, (Russia and Ukraine), the increase was less significant. It is difficult to determine whether the increase in recorded infant mortality in the ex-Soviet republics in 1990-1994 was related to the application of the WHO definition or the deterioration of living conditions caused by the political and economic crisis. That being said, the observed increases in infant mortality were short-term, and in the second half of the 1990s, infant mortality began to decline throughout the ex-Soviet republics returning to the general trend. Apparently, only in the settings of economic and political stability is it possible to estimate the effect of changed livebirth definition on the infant mortality rates.

All births are registered by the civil registration offices, using the “narrow” definition of live birth that was adopted in the USSR.¹⁵ The Decree of the Cabinet of Ministers of Azerbaijan Republics N° 145 “On the procedure of civil registration” of 31 October 2003, dictates that birth should be declared not later than three month after the event took place, and that stillbirths should be registered within three days. In both cases, the birth is registered in the act of civil status, in accordance with the documents provided by the maternity clinic or the doctor delivering the baby. In the case of stillbirths the note “Born dead” is added to the act. In the latter case the parents are not given a birth nor death certificate but only a confirmation of the registration of the event. If a child died “immediately after birth” (i.e. showed signs of life according to the WHO criteria and the Azerbaijan Ministry of Health instruction), both the birth and death are registered but the parents only receive the death certificate. Finally, if a child was born dead “before the term”, in conformity with paragraph 2.22 of the above-mentioned instruction, it is considered as a termination of the pregnancy and is not registered in the civil registration office.¹⁶

Thus, the formal procedure in Azerbaijan since 2007 is for medical facilities to use the WHO criteria for defining a live birth,

In Azerbaijan, instruction №124 dated October 3, 2007 regarding the provision of neonatal intensive care uses the WHO definition for live birth, and instructs doctors to take resuscitative measures and to use the Apgar score to determine the status of all newborns, who show signs of life, regardless of gestational age, height and weight. Hence, all newborn children who show any sign of life must be registered

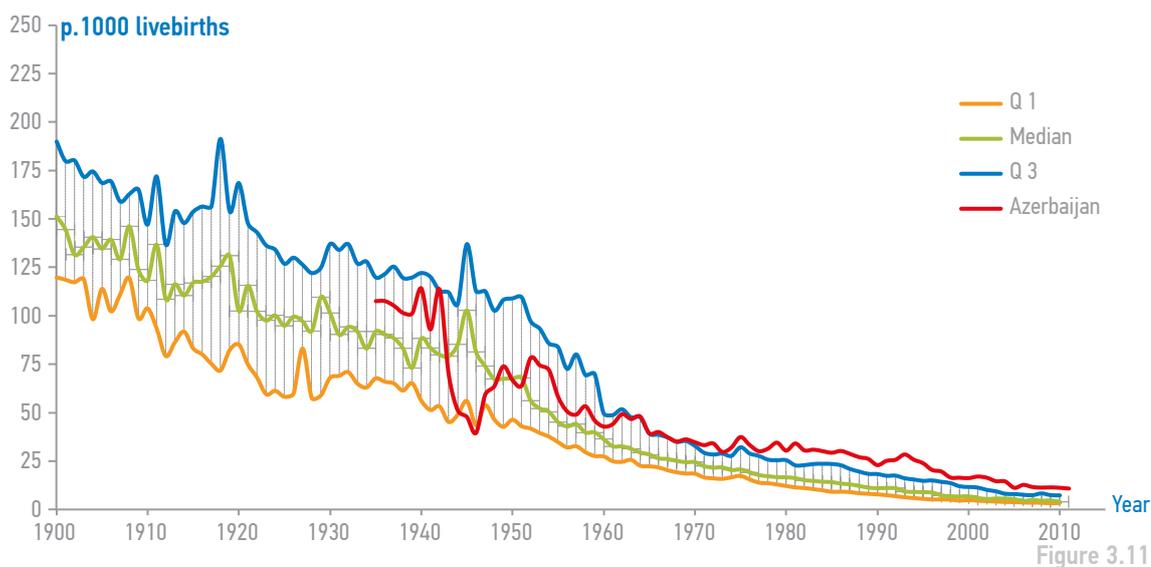


Figure 3.11
Evolution of infant mortality in Azerbaijan in a European context

Figure 3.12
Dynamics of urban and rural infant mortality in Azerbaijan, 1950-2011

3.3.2. Dynamics of infant and child mortality in Azerbaijan

The decline in the crude death rate that occurs during demographic transition is largely due to the decrease in infant mortality. In the beginning of the 20th century, in those European countries for which the data is available, 100 to 300 out of every 1,000 newborn children died during their first year of life; in half of these countries infant mortality exceeded 15%. By the middle of the 20th century, the level of infant mortality in these countries had decreased to approximately 75‰, and in the 1990s it dropped to 10 infant deaths per 1,000 live births. During the first decade of the 21st century, the average level of infant mortality in Europe had almost halved, and today in the wealthiest countries as few as 2-3 out of 1,000 newborn children die before their first birthday.

Until the middle of the 1960s, the level of infant mortality in Azerbaijan was commensurate with the infant mortality trends of European countries. In fact the infant mortality rate dropped quite quickly: before World War II equalling 120‰ and reducing to 50‰ by the end of the 1950s. However, in the 1960s, the decrease slowed and the indicators began to lag more and more behind the average European level, so that by the end of the 1960s, infant mortality in Azerbaijan was twice as high as the average European rate (Fig.3.11).

Infant mortality changed very little in the 1970s but began to decrease markedly from the beginning of the 1980s. The declining trend, interrupted in 1990-1994, continues today and is accelerating from decade to decade. Thus, during the 1980s, the infant mortality rate dropped by 15%, decreasing by almost 40% between 1990-2000, and dropping by another third during the last decade.¹⁷ In general, the historical dynamics of infant mortality in cities and in the rural settlements bear resemblance each other; however, some distortion of urban-to-rural infant mortality ratio during last decade challenges explanation, and will be specially considered here below. (Figure 3.12)

Despite this positive trend, by the end of the 20th century infant mortality in Azerbaijan exceeded the European average by 2.5-3 times. Today, together with Georgia, Armenia and Moldova, Azerbaijan belongs to a group of countries with the highest (around 12‰) infant mortality of the East European and Transcaucasian region.

According to official information, mortality in children aged 1-4 years declined eight times between 1990 and 2012, continuing the historic trend. Although the child mortality rate in Azerbaijan was approximately 12 times as high as in the developed European countries in the early 1990s, by 2010 the gap had reduced to 4.5 times.

The level and dynamics of Azerbaijan's child mortality levels over the last two decades appears to have followed the evolution of life expectancy. In 1990, the child mortality rate in Azerbaijan was close to that of France in the early 1950s, when France's life expectancy was

¹⁷ According to the official estimations, infant mortality in Azerbaijan decreased by 53% between 1990 and 2011. Note that the decline of infant and child mortality by two thirds during the period 1990-2015 is one of the goals mentioned in the UN Millennium Declaration (UNICEF, A World Fit for Children, New-York 2002). We have to mention a positive experience of such countries as Poland, Portugal, Serbia and Estonia where infant mortality reduced by more than two thirds between 1990 and 2010. However, in all these countries except Serbia, infant mortality rate was lower in comparison with Azerbaijan, and in Serbia its level was exactly the same – 23‰.

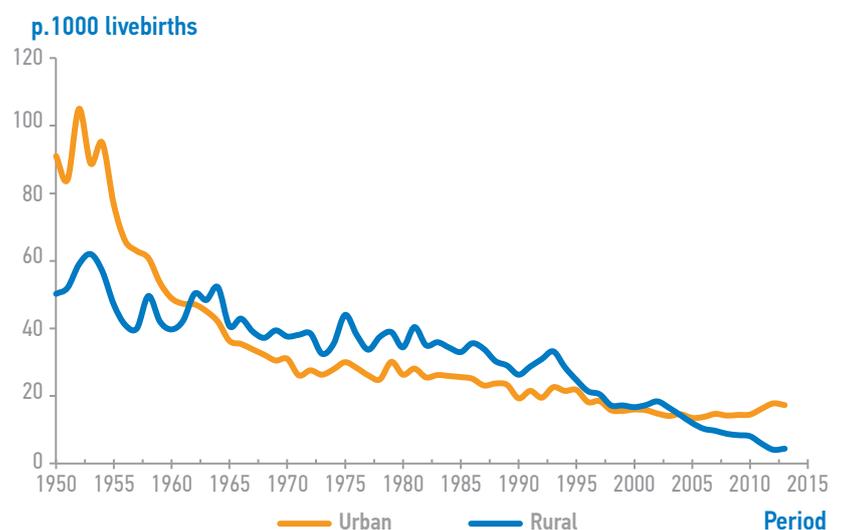


Figure 3.12

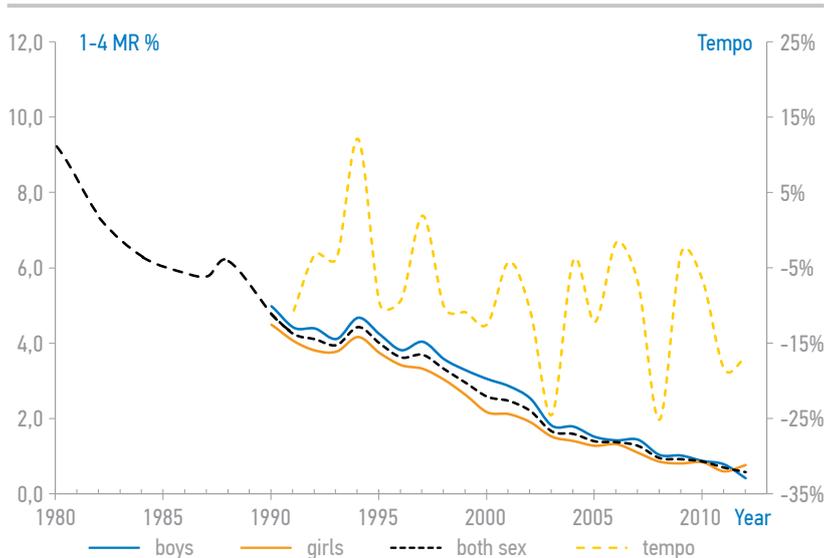


Figure 3.13

Figure 3.13
Mortality at ages 1-4 (left scale) and its annual growth rate (right scale). Azerbaijan, 1990-2012

¹⁸ I.E.M. Andreev, N.Yu. Ksenofontova (1991). Otsenka dostovernosti dannyykh o mladentcheskoi smertnosti [Reliability estimation of infant mortality data], Vestnik statistiki [Statistical Review], no.8, p.21-28

¹⁹ Anderson, Barbara A. and Brian D. Silver (1986) "Infant Mortality in the Soviet Union: Regional Differences and Measurement Issues," Population and Development Review, Vol. 12, No. 4: 705-737; Velkoff, V. and J. Miller (1995), op. cit., etc..

²⁰ Cf. Serbanescu, Florina, Leo Morris, Shafag Rahimova and Lisa Flowers (2002), Reproductive Health Survey: Azerbaijan, 2001, Center for Disease Control and Prevention and al., Atlanta, Table 6.8.1, p.101. The given estimation must be treated carefully because their adequacy depends on survey representativeness, interview ambience and respondent's personal characteristics.

²¹ State Statistical Committee (SSC) [Azerbaijan] and Macro International Inc. 2008. Azerbaijan Demographic and Health Survey 2006. Calverton, Maryland, USA: State Statistical Committee and Macro International Inc. p.109-110

²² It is easy to estimate since these unregistered infant deaths should be added to both numerator and denominator (number of livebirths) of formula for infant mortality rate.

²³ UNICEF (2003), Social Monitor 2003, Innocenti Social Monitor, UNICEF Innocenti Research Centre: Florence, page 40 (<http://www.unicef-irc.org/publications/351>). Unfortunately, we could not find more recent information concerning birth underregistration in urban and rural Azerbaijan.

²⁴ Ibid, p.110

about the same as that of Azerbaijan in the early 1990s. At present in Azerbaijan, the mortality rate for children aged 1-4 is similar to that of France in the early 1980s, and once again life expectancy in France at that time was close to that of modern-day Azerbaijan. (Figure 3.13) Apart from 1994 and 1997, when child mortality showed an increase (12% and 2% respectively) child mortality in Azerbaijan has shown a progressive decrease during the last 20 years. From 1998, the annual decline in mortality for children aged 1-4 averaged 11%, decreasing by 25% in 2003 and 2008 and by 18% and 17% in 2011 and 2012. Thus, between 2010-2012, an average of 72 out of 100,000 children aged 1-4 died every year.

In the last two decades, mortality amongst boys aged 1-4 years was on average 20% higher than amongst girls, the only exception occurring in 2012, when mortality amongst girls became almost twice that of boys. This may have been caused by rates being calculated using preliminary data, and thus the "normal" sex ratio of child mortality will be restored. Alternatively, it is possible that not all deaths during this year were registered, thus the problem of incomplete registering of deaths also occurs in the youngest population.

3.3.3. Problems of data quality and alternative estimations of infant mortality in Azerbaijan

Demographic experts have expressed their concern about the quality of statistics on infant mortality, and the registration process of births and deaths, in Central Asia and the Caucasus since Soviet times.¹⁸ A number of scientific publications from the 1980s and early 1990s, actively discussed the question of the extent to which official statistics on infant mortality reflected the real situation in the republics of the USSR and later in the newly independent states.¹⁹ Representative sample

surveys undertaken in the 1990-2000s through the "Reproductive Health Survey" (CDC, Atlanta, USA) and "Demographic and Health Survey" (DHS Measure International) provided estimates on infant mortality rates based on anamnestic data. These estimates revealed that at the end of the 1990s the infant mortality rate, calculated on a sample survey, differed from same indicator calculated according to official statistics by 1.1 times in the Ukraine and 4.3 times in Azerbaijan.²⁰ According to the surveys, in 1996-2000 Azerbaijan had the highest infant mortality rate of the Eastern European and Central Asian countries (74.4±12.8‰) as well as the largest difference between survey and official data (more than 4 times).

Estimates of infant mortality for the same period, but based on the 2006 Demographic and Health Survey (the 2006 AzDHS) proved to be more moderate: 55±8‰ in 1996-2000 and 43±11‰ in 2006-2011, though these figures were still three times higher than official statistics.²¹ If a child died before its first birthday and the death was not registered, it is also very likely that its birth was not registered; thus in Azerbaijan, in the mid-2000s, two thirds of infant deaths and at least 3% of births were not registered and were therefore not captured in the official statistics.²² According to experts, and supported by international infant and child mortality databases (UNICEF and WHO), Azerbaijan's current infant mortality is close to 40‰ – almost four time higher than official estimates. This means that statistical bodies do not register at least 4% of births and 75% of deaths of children aged below one. (Figure 3.14)

The number of unregistered births should be higher because a surviving child's birth must be registered within the legal deadline. Indeed, according to UNICEF (2003) in Azerbaijan at the end of the 1990s – early 2000s, 13.6% of children aged 6 months and younger and 6% of those aged 6-12 months were not registered; representing approximately 10% of children aged less than one.²³ At the beginning of the 2000s, late birth registration was a widespread phenomenon in Central Asia and the Caucasus. The distance from the residence to the civil registration office, plus the danger of travelling during armed conflict is the most likely reason for this delay. It is also likely that, in the absence of any significant benefits or allowances related to childbirth and motherhood, and faced with negotiating the quagmire of bureaucratic administration to register their child, parents simply chose not to bother. Equally, since many infants died soon after birth, neither their births nor deaths were registered, especially in rural areas where burial procedures are much less formal than in cities, and thus neither event was captured by official statistics.

It is difficult to ascertain whether or not maternity hospitals classify a birth as 'live' if the newborn child dies within the first few minutes of its life. The 2006 AzDHS Final Report notes that if a birth is classified

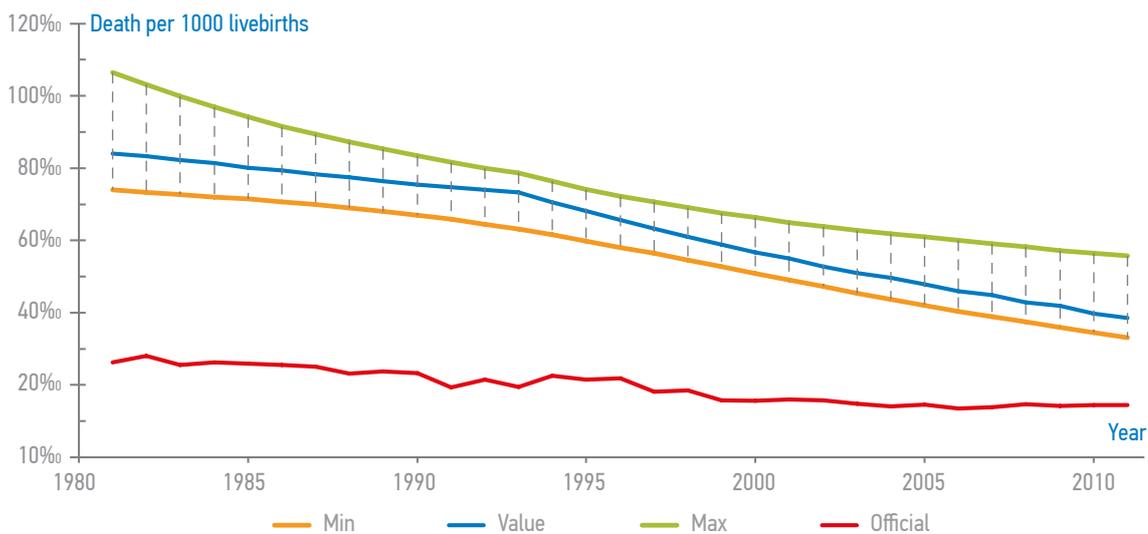


Figure 3.14

as 'live' according to the Soviet definition (i.e. excludes all neonatal deaths from the total number of infant deaths), infant mortality in Azerbaijan during the 5-year period prior to survey would drop to 21‰ (with a 95% confidence interval from 13 to 28‰), a figure quite close to official data.²⁴

Hence, although all experts agree that there has been a rapid decrease in infant mortality in Azerbaijan, the question on the extent and the reasons for the significant difference in the infant mortality rates calculated on the basis of different data sources remains unanswered. The results of the DHS survey held in Azerbaijan in 2011 may well shed light on the issue; but until these results are available, infant mortality can only be estimated using data from the 2009 census.

The following algorithm should be used. First, calculate the number of surviving children for different groups of women, according to the responses regarding the number of children born and still living. Having calculated the mean age at maternity and using the life tables for the period 1990-2009, it is possible to estimate the expected proportion of surviving children for various levels of infant mortality. In order to simplify the task only four grades of infant mortality rate should be taken into account: the first one corresponds to the official data, and the next three grades will exceed two, three and four times the first one. If women truthfully answered the question about the number of children born and still living, and if the life table is realistic one, then the estimated (expected) proportion of surviving children will be equal or very close to the same indicator obtained from the respondents' answers, and their ratio will be close to 1.

If the infant mortality rate corresponding to the life table used is higher than the actual mortality rate, the ratio between the expected and observed proportion of surviving children will be below one. Conversely, if the life table infant mortality rate is lower than the real

one, the ratio will be above one. Since we use in our estimations the official infant mortality rate with the multipliers equal to 1, 2, 3 and 4, then the real infant mortality that, other things being equal, determines the proportion of survived children, should fall within one of the intervals [1, 2] [2, 3] or [3, 4], namely that one whose lower and upper bounds give the ratios between expected and observed proportion of survived children above and below 1, respectively. After the interval is found, we divide it in proportion to the distance between 1 (real infant mortality) and the boundary values of ratio between expected and observed proportion of survived children, as we do it, for example, calculating the median.

Using the above technique confirms the progressively declining underestimation of infant mortality in Azerbaijan. Thus, actual infant mortality in the 1970s was more than three times higher than official estimates, reducing to two times higher in the 1980s and then to 1.5 times in the 1990s. During the first half of the 2000s the actual infant mortality level was 48% higher than the official level, dropping to 35% higher in the second half of the decade, which meant that around half of the

Figure 3.14

Infant mortality rates calculated on the basis of official statistics, and the interval estimation of infant mortality in Azerbaijan made by the international experts See: <http://www.childmortality.org/> (last consultation 04/09/2013)

Figure 3.15

Infant mortality rate observed and estimated on the basis of the 2009 census (left scale) and the extent of underestimation of infant mortality (in %, right scale)

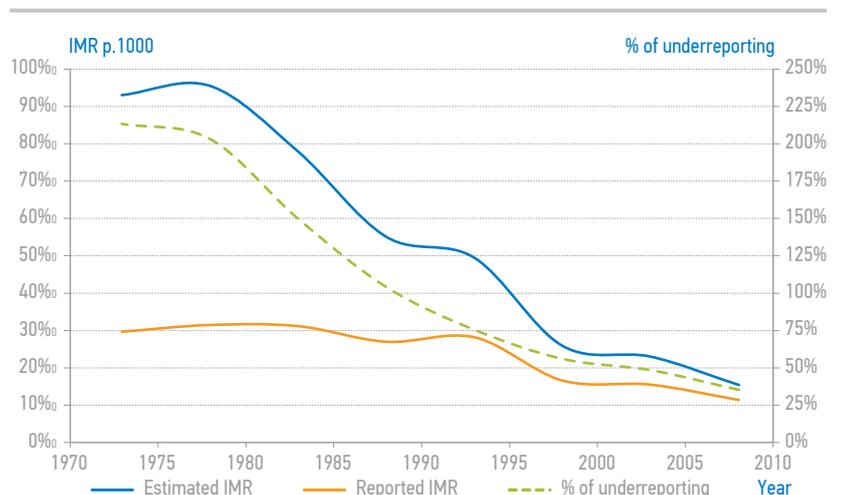


Figure 3.15

infant deaths and 1% of live births were not registered. (Figure 3.15)

This is somewhat lower than the estimates made using sample surveys; however, their results noted that in the beginning of the 1990s, life expectancy was 1.6 years lower than official statistics and in the beginning of the 2000s, the gap still existed, though it had reduced to 0.25 years. These results clearly indicated the need to reassess the human development index, a critical social indicator. In addition, the magnitude of the probable underreporting of infant mortality should be taken into account in the analysis and interpretation of territorial and social differentiation.

Thus the answer to the question of the extent to which the actual infant mortality rate differs from the statutory assessment depends on both the overall picture of the evolution of mortality and an evaluation of the effectiveness of the health care system and health development.

3.3.4. Infant mortality difference between urban and rural areas

In the early 1950s the infant mortality rate in the cities of Azerbaijan's cities was almost two times higher than in rural areas. By the early 1960's the gap had begun to narrow, and since 1962 the infant mortality rate in rural areas was consistently higher than in urban areas. Until 1993, the infant mortality dynamics of urban and rural populations remained almost identical, but from 1994, the infant mortality rate in rural areas began to decline much faster than in urban areas. In 2005, the level of the level of urban and rural areas became equal, and by 2012 the infant mortality rate of the urban population was already 80% higher than in rural areas, thus returning to approximately the same levels observed 60 years ago.

The fact that current official statistics indicate that infant mortality in rural areas is much less than in urban areas, requires further attention, as infant mortality is normally

higher in rural areas, because of the higher birth rate, the below average level of education of women and a less effective health care system.

Of course, the higher infant mortality in the cities could be explained by several factors, such as a worsening of living conditions due to rapid growth and the impoverishment of the urban population, the increased number of slums, the general degradation of the health care system and changes in the culture of motherhood. The last factor, in particular, played an important role in the growth of infant mortality in Europe in the second half of the 19th century, when an increase in women's employment outside the family changed the practice of care and feeding of newborns. However, today in Azerbaijan there are no noticeable signs of worsening living conditions or changes in the culture of motherhood in the urban environment, and over the last decade mortality rates have been equal to 13-16 deaths per 1,000 live births. At the same time, no specific evidence exists to suggest that in rural areas, during the same period, life conditions changed so radically that infant mortality decreased by 3 times – from 18‰ in 2002 to 5.6‰ in 2011, (i.e., the level observed in Slovakia). It should be noted that such countries as Norway, Denmark and Sweden managed to achieve the drop in the indicator of infant deaths (from 18 to 6 per 1000 livebirths) in 30 years, France and Great Britain in 25 years, Estonia in 23, Hungary and Czech Republic in 20 and Germany in 17 years.

The simpler and more plausible explanation for the very low infant mortality rate in rural areas of Azerbaijan may be the incomplete registration of births and deaths.

Despite the fact that the discussions on the problem of under-registration and the outdated statistical reporting methods for infant mortality began in the Soviet era, and particularly in the 1990s, concrete answers as to how and why this occurs has not been found. The dilemma will only be resolved once qualitative local surveys have been undertaken; more is required than mere criticism of data quality based on international comparisons and mortality models.

Figure 3.16
Ratio between rural and urban infant mortality rates in Azerbaijan in 1950-2011

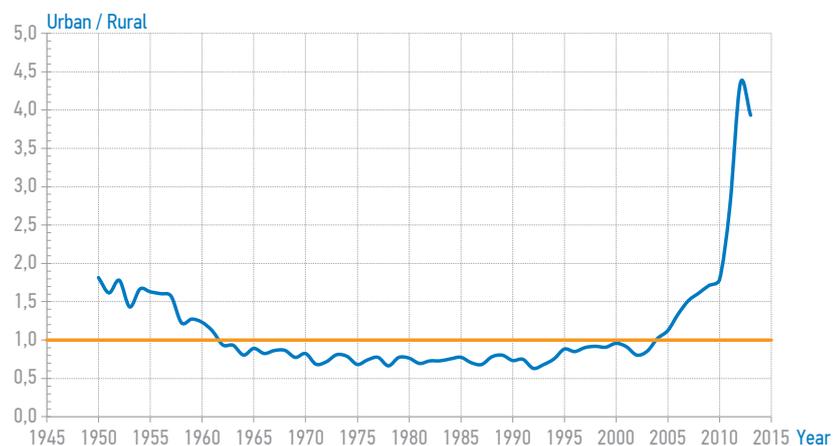


Figure 3.16

3.3.5. Territorial differences in infant mortality

Territorial differences in infant mortality in Azerbaijan seem very significant. But as the number of infant births and deaths in many administrative districts is very small, the differences between infant mortality rates and their deviation from the national level are statistically insignificant. In 2011, in Azerbaijan, 30 districts recorded less than 1,500 births, and the difference between the infant mortality rates of 20‰ and 13‰ should not be considered statistically significant, and should be regarded aleatory. (Figure 3.17)

The highest infant mortality, 28‰, was observed in Khodzaven district where the annual numbers of births and infant deaths were 143 and 4 respectively. In this particular case, it is easy to estimate that just one random event would provides the variation of the formal rate from 32‰ to 21‰, i.e. by 1.5 times. In 2011, in 22 administrative districts less than 10 children died before their first birthday, 27 districts recorded between 10 and 20 deaths in this age group; while 7 districts had more than 30 infant deaths. Therefore, the interpretation of territorial differences in infant mortality in Azerbaijan should be treated with caution.

Of those administrative districts where the number of live births recorded is such that the statistical indicators seem reliable, the highest infant mortality rate in 2011 was in the city of Sumgait, where 23 out of 1,000 newborns died in the first year. In eight administrative districts of Azerbaijan, including Baku, where 25% of live births were registered, the infant mortality rate exceeded 18‰.

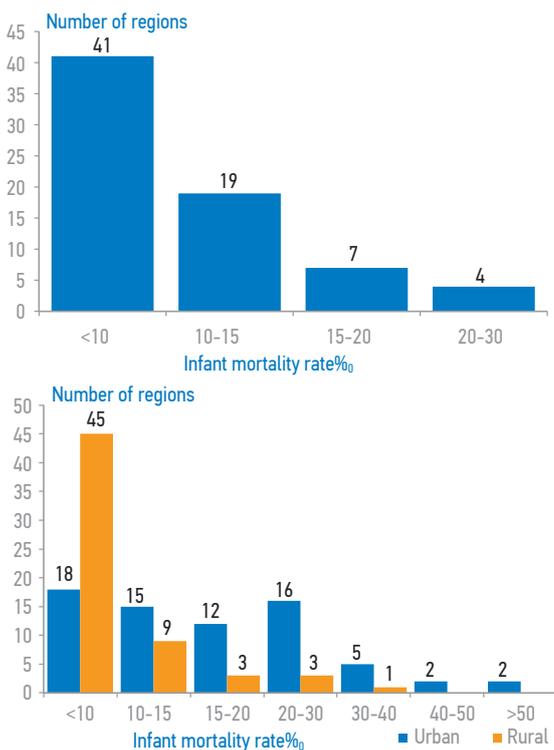


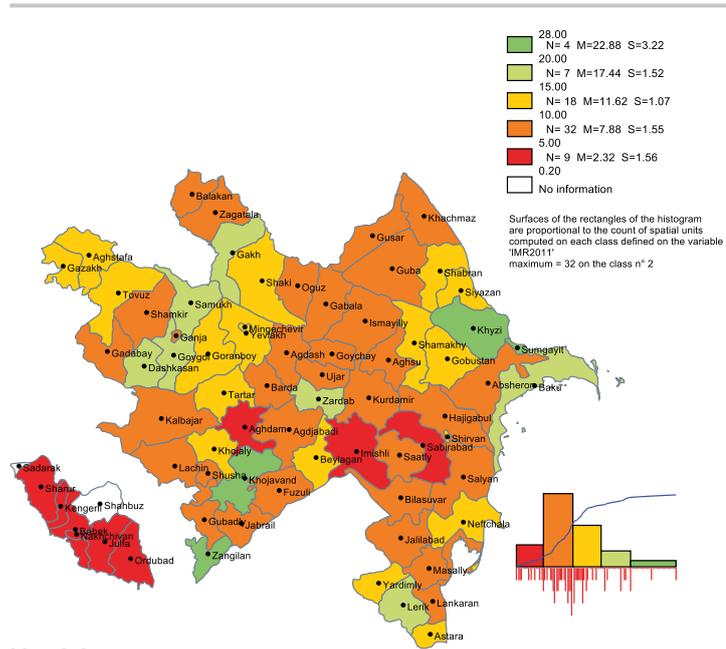
Figure 3.17

The low infant mortality rate observed in Nakhichevan is implausible, where in 2011 there were more than 10,404 births and only 10 deaths under the age of 10 years.

Such considerable differences in regional infant mortality again raise the question of the accuracy of infant mortality registration in Azerbaijan. Even if the Nakhichevan data is excluded, it is hard to believe that infant mortality is below 10‰ in 35 somewhat undeveloped and less urbanised administrative districts out of the 65 for which official data is available. It is also hard to explain why in the city of Gandzha (6,839 registered births) the infant mortality rate is half that of Baku (37,130 births) and 2.5 times lower than that of Sumgait (5,015 births).

Overall, the picture of territorial variations in infant mortality between administrative districts looks quite chaotic, and no geographical patterns emerge from its visual analysis. Even among the districts of the same economic region, infant mortality rates vary by 2-4 times. Such a significant difference may be due to a random factor since the annual number of births in some districts is small. (Map 3.1)

Because of the small numbers of births, it is even more difficult to paint an accurate picture of territorial differences in urban and rural infant mortality. The only fact that seems indisputable is that infant mortality as well as its territorial variation is higher in cities than in rural areas. The national average for infant mortality in the urban population is largely dependent on the situation in three cities – Baku, Sumgait and Ganja - where 44%, 6% and 8% of all urban births in Azerbaijan are registered.



Map 3.1

Figure 3.17 Distribution of administrative districts according to infant mortality levels. Azerbaijan, 2011

Map 3.1 Regional differences in infant mortality. Azerbaijan, 2011

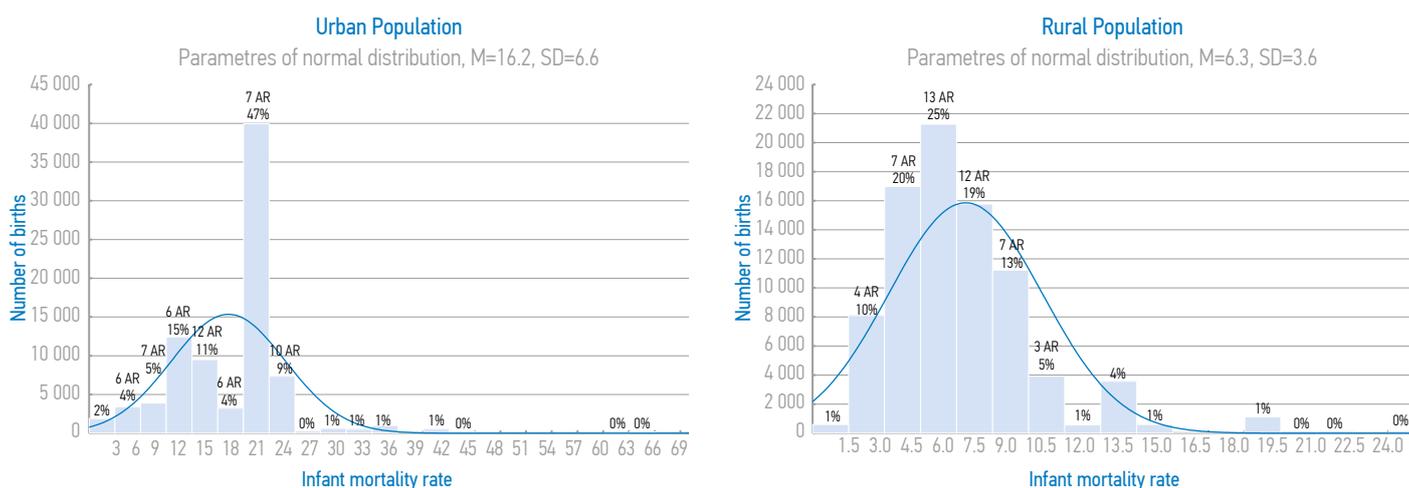


Figure 3.18

Figure 3.18
Distribution of administrative districts according to urban and rural infant mortality weighted by the number of births. Azerbaijan, 2011

With regard to urban infant mortality, Azerbaijan's administrative districts can be divided into two groups, in each of which approximately half the annual births are registered. In the first group (17 districts) the infant mortality rate is in the range of 18-24%, i.e., between the rates observed in Baku and Sumgait, two cities in which birth and death registration is relatively good. In the second group (33 districts) the infant mortality rate is below 18% and normally in the range of 10-11%; this is mostly determined by infant mortality in the city of Ganja. One could suppose a certain underestimation of infant mortality in this group of urban settlements even though the assumption requires an additional verification. In 2011, in 25% of urban territories where data was available, infant mortality was extremely low, less than 10%. (Figure 3.18)

In 2011 the highest statistically significant infant mortality rate in an urban population (42%) was registered in the Lerick district of the Lenkoran economic region. While Yardymly and Khodjaven districts also had extremely high urban infant mortality rates, their statistical significance is minimal because of the small number of births in these areas.

75% of urban births are concentrated in 15 administrative districts, while rural births tend to be distributed quite evenly across the country. Roughly a quarter of all rural births are registered in 13 administrative districts and the infant mortality rate is very low, from 4.5-6%. In total, 50% of children born in rural areas are registered in the districts where official infant mortality rates do not exceed 6.1%, and three quarters – in the districts in which this indicator is below 10.2%.

The highest statistically significant infant mortality rates (around 18%) were registered in the rural population of Apsheron (497 births in 2011, $p < 0.1$) and Samukh (407 births, $p = 0.1$) districts. In the remaining districts with rural infant mortality rates above 19%, the annual numbers of births did not exceed 200. With regard to infant deaths in rural

areas, in 2011 none of the districts recorded more than 15 deaths, and 54 out of 60 districts recorded less than 10 deaths. It is therefore difficult to make conclusions about the statistical significance of territorial differences and the statistical stability of infant mortality rates.

The absence of any correlation between the level of infant mortality in urban and rural areas increases the overall confusion with regard to territorial variations, and deserves particular consideration. If the urban infant mortality rate in a certain district has is high compared to the national average this does not mean that infant mortality in the rural areas of the same district will also be higher.

If the low annual number of births causes, in the most of cases, the statistical insignificance of territorial differences in infant mortality calculated for urban and rural districts separately, The difference in infant mortality between rural and urban areas of the same district and, more importantly, the same economic region is so important that it is always statistically significant, even where low birth rates render territorial differences insignificant.

Virtually everywhere, urban infant mortality is considerably higher than that of rural areas. In 2011, 10 out of 60 administrative districts, where comparisons were possible, urban infant mortality was 5.5 times (ranked from 4 to 8.3 times) higher on average than rural mortality; in 18 districts the level was 3-4 times higher and in nine districts it was 2-3 times higher. In only six districts was the urban infant mortality rate lower than the rural one.

A comparison of urban and rural infant mortality in the larger economic regions slightly ameliorates these irregularities, albeit artificially, revealing that in 2011 only the Apsheron economic region showed higher rural infant mortality than urban. The biggest difference in urban and rural infant mortality rates was observed

in the Nakhichevan and Keljubar-Lachi regions. In the Sheki-Zakatal, Aran and Lenkoran economic regions (a total of 30 administrative districts), infant mortality in urban areas was 2.5-3 times higher, while in the Dagly-Shirvan and Southern Karabakh regions the urban infant mortality was 2 to 2.5 times higher and in the Gandzha-Kazakh and Kuba-Khachmaz regions it was twice as high as rural areas. (Map 3.2)

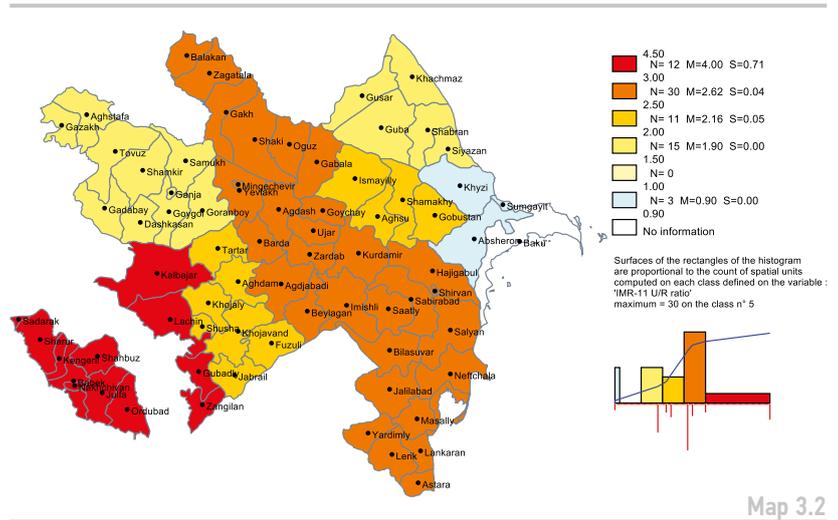
The hypothesis that birth and death underregistration is the reason for the extremely low official rates of infant mortality in most administrative districts, although plausible, will need to be substantiated by additional evidence. If this is indeed proven to be the case, then the problem of under-registration of these events will be one of the most relevant for almost all rural and many urban areas in the majority of administrative districts in Azerbaijan.

3.3.6. Causes of infant deaths

A clear understanding of the causes of infant mortality in any country can only be obtained if the registration process is complete, and correct diagnoses and encoding made, in accordance with the international classification of diseases. Until 2000, causes of deaths in Azerbaijan were recorded according to the WHO ICD-9 list used exclusively in the USSR, which was later replaced by the modified ICD-10 version. Despite these changes, infant mortality rates by cause before and after 2000 are comparable if they are divided into a few main groups: 1) infectious and parasitic diseases; 2) respiratory diseases, congenital malformations and chromosomal abnormalities; 3) certain conditions originating in the perinatal period; 4) external causes (injury, poisoning, etc.) and 5) all other causes (including diseases of the digestive and nervous system).

Estimates based on official data on the numbers of deaths for children under one, by cause of death, show that between 1970-1981, the infant mortality rate in Azerbaijan decreased by 7%, primarily due to a 50% decline in mortality from external causes and chromosomal abnormalities. During the same period, infant mortality from infectious and parasitic diseases increased 3.5 times; though this increase was compensated by a parallel decline in mortality from "other" causes (3.6 times).

From 1981, infant mortality declined as a result of a decrease in mortality from infectious and parasitic diseases and diseases of the respiratory system. Between 1981 and 1990, mortality from each of these groups decreased approximately 1.5 times, and during the period 1990-2012 infant mortality from



Map 3.2
Ratio between infant mortality rates in urban and rural population, by economic regions (rural population = 1). Azerbaijan, 2011

infectious and parasitic diseases dropped by 8.7 times and mortality from diseases of respiratory system by 5.6 times. (Figure 3.19, upper chart)

Mortality from external causes (injury, poisoning, etc.) also showed a progressive decline of 1.5-2 per

Figure 3.19
Dynamics and structure of infant mortality from principal groups of causes. Azerbaijan, 1990-2011

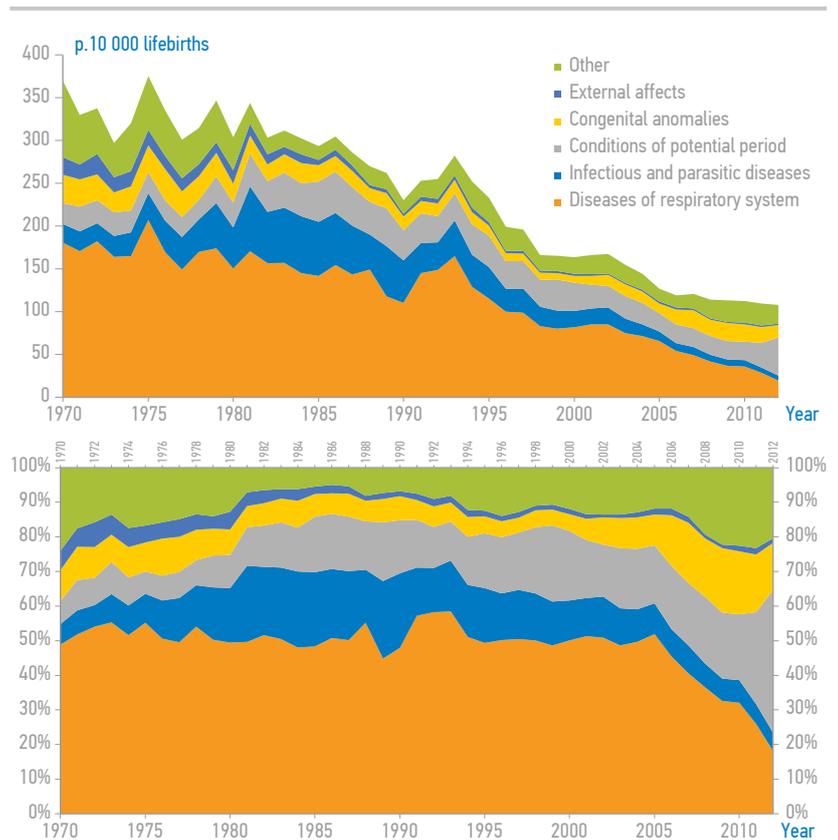


Figure 3.19

10,000 livebirths, and during the last decade as few as 26-27 children below the age of one died from these causes each year.

Infant mortality from chromosomal abnormalities continued to decrease and by 2000, had reached 7.8 deaths per 10,000 live births (7.8 o/ooo). The rate then increased to 21 o/ooo in 2009, the same level observed in 1980-1983, but has decreased during the last three years, reaching 14.6 o/ooo in 2012.

Infant mortality occurring for various reasons during the perinatal period has shown the least change during the last 40 years. In the 1970s, an average of 26 o/ooo newborn children died from these causes every year; in the 1980s, the rate increased to 42 o/ooo and then decreased to 33 o/ooo in the 1990s. Between 2000 and 2012 the level returned to that of the 1970s (25 o/ooo), showing a sudden increase of deaths during 2012 (45 o/ooo, or by 1.5 times).

All in all, decreases in infant mortality by cause in Azerbaijan relate to improvements in sanitary conditions, personal hygiene and health care. As is the norm, mortality from diseases caused by external factors that are treatable or preventable without incurring considerable expense, declines first (also known as exogenous). Endogenous mortality is related to such causes as congenital and chromosomal abnormalities and other factors which seldom relate to parents' behaviour or sanitary and hygienic conditions. Decreases in endogenous infant mortality are usually due to the introduction of new technologies in prenatal, obstetric and neonatal care and always follow the decline in exogenous mortality.

The structure of causes of infant mortality in Azerbaijan scaled to 100% shows very little change between 1970 and 2005, except during 1970-1990 when infant deaths increased 3.7 times, from 6 to 22% as a result of infectious and parasitic diseases. At the same time the proportion of "other" causes decreased to the same extent, thus, the total share of both groups remained virtually unchanged at $26 \pm 4\%$ of the total number of deaths. This eventuality would suggest that the phenomenon was due to changes in the diagnosis and classification of the causes of death. Between 1993 and 2000, infant mortality caused by diseases of the nervous system increased from 2-8%. In all other disease groups, the structure of infant mortality remains constant during this time. More than 50% of children die from the diseases of respiratory system before their first birthday, around 13% from infectious and parasitic diseases, 16% from conditions originating during the perinatal period and 6% from congenital and chromosomal abnormalities. The percentage of deaths caused by external causes is 1-2% and from "other" causes 5%. (Figure 3.19, lower chart)

However, since 2005, the structure of causes of infant mortality causes in Azerbaijan has seen significant changes. Firstly, between 2005 and 2012, mortality from respiratory disease halved (52-26%), while mortality from congenital and chromosomal abnormalities almost doubled (8-15%). Infant death related to conditions originating in the perinatal period, which had shown a minimal but steady growth since 2005, suddenly increased from 19-27% in 2012.

Most of these changes fit the normal pattern associated with improved sanitary conditions and follow the global trend of infant mortality decline (endogenous causes of death increase while exogenous causes of death decrease). However, the fact that both the mortality rate and the proportion of children dying before the age of one from "other" causes doubled is a matter for concern as it does not fit the norm.

It is possible that such a radical change in the structure of causes of infant mortality in such a short timeframe could be due to the incomplete registration of birth and infant deaths. In other words, registration offices record infant deaths more accurately than maternity clinics where the deaths occur during or soon after delivery, mainly from endogenous causes such as congenital and chromosomal abnormalities.

If the death of an infant occurs a week or more after birth, in the family home rather than the hospital and the birth has not yet been registered, the parents often do not register the death, thus neither event is included in official records.

Another reason for the sharp growth in deaths from "other" causes between 2005 and 2011 may be due to the low level of registration of late neonatal and post neonatal deaths. The "other" causes category excludes diseases of the nervous and digestive systems and often refers to an unknown or ill-defined cause. The hypothesis about the correlation between the quality of the registration process and changes in the structure of infant mortality by cause will need further examination, for example an analysis of causes of infant mortality by life duration.

3.3.7. Age-specific infant mortality

As published official statistics contain no comprehensive data, it is not possible to estimate age-specific infant mortality in Azerbaijan over the last two decades. Data published at the end of the 1980s in the USSR Demographic Yearbooks noted that, in 1987 and 1988, Azerbaijan's data related to early and late neonatal mortality and neonatal and post neonatal mortality, differed significantly from other Soviet republics with similar infant mortality levels. Thus, in Georgia, Moldova and Kazakhstan, 30-35% of all infant deaths occurred during the first week of life (early neonatal mortality), while 9-14% of newborn children died aged 2-4 weeks (late neonatal mortality) and 54-60% of all deaths occurred during the post neonatal period (at age 1-11 months). Hence, in these countries infant mortality was 25-30%, and almost equally divided between the neonatal and post neonatal periods of life. Azerbaijan's infant mortality was 27 per 1000 in the same years, all the infant deaths were distributed between 17% of early neonatal, 4% of late neonatal and 79% of post-neonatal periods respectively. The same age structure of infant mortality was observed in Kyrgyzstan, Uzbekistan and Turkmenistan), with the only difference being a higher share of late neonatal mortality (8-9%). Only Tajikistan's late neonatal component of infant mortality equalled Azerbaijan's, though the overall level of infant mortality was twice as high in Tajikistan.

The unusual age structure of infant mortality in Azerbaijan in the late 1980s could either be related to the underreporting of infant mortality and consequent low official estimates, or it could be related to the fact that neonatal mortality decreased following the development of obstetrics, whereas post-neonatal mortality remained high due to poor childcare in the home.²⁵

The Final Report of the 2001 Azerbaijan Reproductive Health Survey (the 2001 AzRHS) contained official

information on age-specific infant mortality in 1990-2000 and cited data from WHO and the Azerbaijan Ministry of Health's Department of Health Statistics for the periods 1991-1996 and 1997-2000 respectively. The data confirmed that age-specific infant mortality was the same in the 1980s and the 1990s, with 20% of infant deaths occurring during the neonatal period and 80% in the post neonatal period. According to the same sources, infant mortality decreased from 25‰ in 1991 to 13‰ in 2000.

However, the sample survey results give a different picture of age-specific infant mortality: according to the 2001 Azerbaijan Reproductive Health Survey data, in 1991-2000, infant mortality was almost four times higher than officially published rates, and the odds between neonatal and post-neonatal deaths was 45% to 55%.

The 2006 Azerbaijan Demographic and Health Survey (the 2006 AzDHS) which provided lower estimates of infant mortality than the 2001 AzRHS, showed that, in the first half of the 1990s, neonatal mortality represented around 45% of the total number of infant deaths. In the second half of the 1990s, this increased to 55% and during five-year period preceding the 2006 survey, accounted for 65% of infant mortality. Hence, the 2006 AzDHS results suggest that, if 16% of neonatal and 55% of post neonatal deaths were recorded by official statistics in the 1990s, and 13% of neonatal and 50% of post-neonatal deaths were recorded in the first half of the 2000s, then the registration process is getting worse. (Figure 3.20)

Data is currently unavailable for age-specific infant mortality in the second half of the 2000s, a period marked by remarkable changes in mortality levels and causes of death among children under one; the 2011 AzDHS should shed some light on this problem.

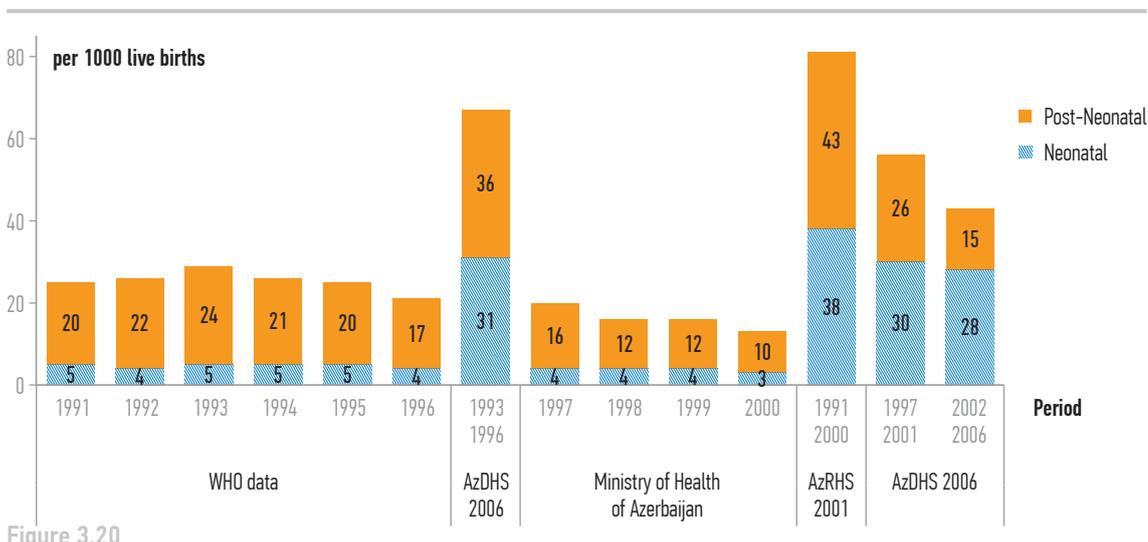


Figure 3.20

Figure 3.20 Infant, neonatal and post-neonatal mortality estimated on the basis of official statistics in comparison with sample survey results. Azerbaijan, 1990-2006

Data from: Reproductive Health Survey: Azerbaijan, 2001, Final Report, Center for Disease Control and Prevention and al., Atlanta, p.102, Fig.6.8, Table 6.8.2. Azerbaijan Demographic and Health Survey 2006. Final report, Calverton, Maryland, USA: State Statistical Committee and Macro International Inc., 2008, p.109, Table 9.1

²⁵ The problems of evolution of age-specific infant mortality are discussed in detail in: Guillot M, Gerland P, Pelletier F, Saabneh A (2012) "Child Mortality Estimation: A Global Overview of Infant and Child Mortality Age Patterns in Light of New Empirical Data". PLoS Med 9(8): e1001299. doi:10.1371/journal.pmed.1001299 <http://www.ploscollections.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001299;jsessionid=BE-2A879B5F513399A768B-B94AB59273>

3.4. Evolution of life expectancy

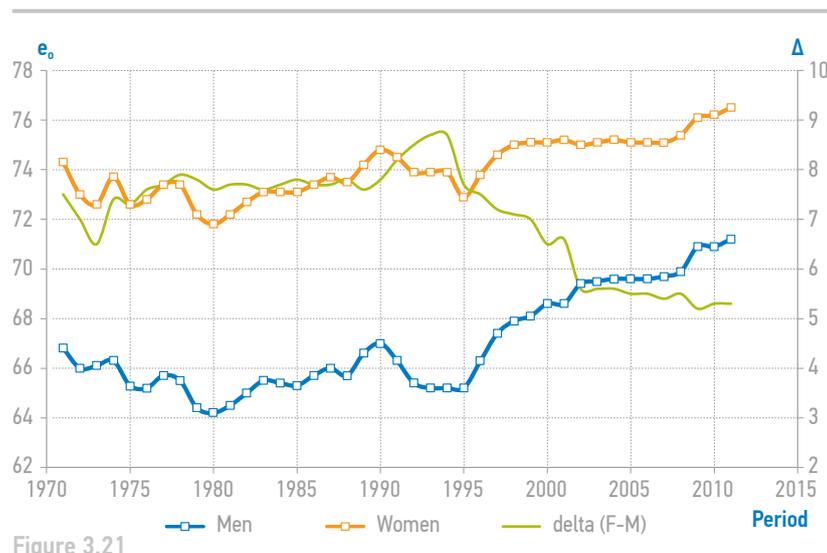


Figure 3.21

Figure 3.21
Dynamics of male and female life expectancy. Azerbaijan, 1970-2011

3.4.1. Life expectancy dynamics and main trends

Estimates of the actual mortality level independent of the population age structure can be obtained using life expectancy dynamics. Life expectancy at birth represents an integral indicator in a mortality table that describes the lifespan of a synthetic cohort for whom the hazard of death at each age is equal to age-specific mortality rate. Usually life tables consider male and female mortality separately, since age-specific mortality for each vary greatly. Unlike the crude death rate, life expectancy at birth is unrelated to a prior demographic situation and, therefore, may serve as a true indicator of the sanitary situation during the period being studied.

In the USSR, estimates of life expectancy at each year of life were only possible since 1970, when the data became available. Life expectancy in Azerbaijan at that time was 66.8 years for men and 74.3 for women; almost four years higher than in the European part of the USSR. During the decade, life expectancy dropped in Azerbaijan, and throughout the USSR, and by the end of the 1970s had dropped to 64.3 years for men and 74 for women. (Figure 3.21) The reasons why the sanitary situation deteriorated in the USSR in the 1970s are still unclear, though two scenarios are possible.²⁶ First, the health care system did not react adequately to the changes in the epidemiologic situation, especially in regard to the prevention and diagnosis of cardiovascular diseases. Second, the growing consumption of alcohol provoked an increase, direct or indirectly, of alcohol-related mortality.

The deficiencies of the health system affected all the countries of the USSR, however the growth in alcohol related mortality did not affect the Muslim Soviet republics.²⁷ It can therefore be surmised that

the 1970s decline in life expectancy in these republics was mainly resulted from deterioration of health of Slavic population constituting almost 50% of the total population in Kazakhstan, 25% in Kyrgyzstan and approximately 10% in the other Muslim republics, including Azerbaijan.

From the beginning of the 1980s, a growth in life expectancy, mainly resulting from anti-alcohol campaigns, emerged in Azerbaijan as well as in the other Soviet republics. From 1991 to 1995, during the armed conflict with Armenia, life expectancy declined again, though still remained higher than in 1980. After the external political situation stabilised, life expectancy started increasing and had reached pre-conflict levels by 1997-1998. From 1998 to 2007, female life expectancy remained stable at 75 years while male life expectancy grew relatively fast until 2002, stabilising at 70 years of age, where it remained until 2009. Between 1993 and 2002 the gender gap in life expectancy decreased from 8.7 to 5.6 years dropping to 5.3 years in 2011.

In 2009, life expectancy in Azerbaijan increased sharply, exceeding 70 years for men and 76 for women. Although these figures may be related to the verification of the population size and structure after the 2009 census, the overall trend of a growth in life expectancy in Azerbaijan is incontestable.

No significant difference has been observed in the life expectancy of the urban and rural population in Azerbaijan. (Figure 3.22) Rural life expectancy was 3.6 years higher for men and 4.8 years higher for women in 1970 and by 1980 this difference disappeared when rural life expectancy declined. Since 1980 the levels and trends of urban and rural life expectancy have remained identical for both genders. This phenomenon should be investigated further since there is a difference in the standards of sanitary conditions and access to public health facilities in urban and rural areas. Statistical explanations such as the incomplete registration of deaths or overestimates of population size in rural areas must also be taken into consideration.

During the last few years, both male and female life expectancy in Azerbaijan has continued to grow, though it slowed somewhat towards the end of the 1990s. From the demographic point of view this process is natural and is mainly linked to progressive exhaustion of mortality decline potential in the age groups that were responsible for the growth of average life expectancy during the demographic transition.

²⁶ Shkolnikov Vladimir, France Meslé, Jacques Vallin, 1995 "Health Crisis in Russia I. Recent Trends in Life Expectancy and Causes of Death from 1970 to 1993" Population: An English Selection, Vol. 8 (1995), pp. 123-154; Avdeev Alexandre, Alain Blum, Serge Zakharov and Evgeny Andreev, 1998 "The Reactions of a Heterogeneous Population to Perturbation. An Interpretative Model of Mortality Trends in Russia" in Population: An English Selection, Vol. 10, No. 2 (1998), p. 267-302

²⁷ Tolts, Mark, 1995 "Modernization of Demographic Behaviour in the Muslim Republics of the Former USSR," in Muslim Eurasia: Conflicting Legacies, ed. Yaacov Ro'i, Cummings Center Series, London: Frank Cass, pp. 231-53

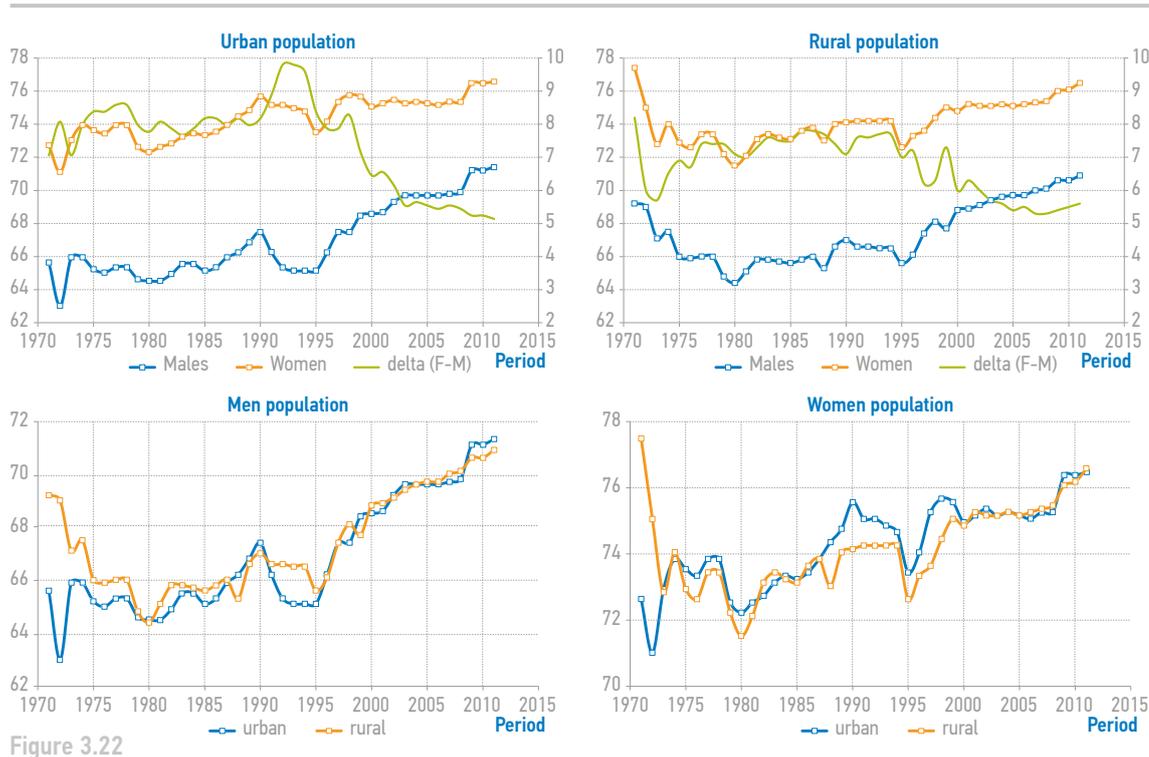


Figure 3.22

Figure 3.22
Dynamics of male and female life expectancy in urban and rural areas. Azerbaijan, 1970-2011

3.4.2. Influence of mortality decline at specific ages on life expectancy dynamics

Until the end of the 20th century, the growth in life expectancy in Azerbaijan was mainly, if not entirely, resulted from the reduction in infant and child mortality. For example, from 1990 to 2010, male life expectancy increased by 3.7 years, of which 2.05 years (55%) of the increase related to infant and child mortality declined 3.3 times, from 37 to 11 per 1000 livebirths. If infant mortality were to decline further, by 3 more times and reached the level observed in most developed countries, life expectancy would have increased by 0.6 years. If, alongside this, mortality at ages 1-4 dropped to 6 per 1000, i.e. to the minimum level observed nowadays in the developed world, the average life expectancy would have gained 0.1 year only. (Figure 3.23)

During the last 20 years, the decrease in male mortality from 6 to 4 per 1,000 in age group 20-60 has played an important role in the increase in overall life expectancy, producing a 44% (1.6 years) increase in male life expectancy at birth.

Male mortality for this age group in European countries is close to 3 per 1,000. If this group's mortality rate decreased to that of, for example France, male life expectancy would increase by 0.5 years. Hence, the potential of life expectancy growth for men aged less than 60 years is 1.2 years (0.6+0.1+0.5). For women, potential of life expectancy growth resulting from mortality decline in infant, child and

economically active ages would be about the same (0.59+0.07+0.56).

Between 1990 and 2000, an unexplained mortality increase was observed in male and female populations of older age groups and in both the urban and rural areas of Azerbaijan. The highest increase was observed among urban women, where an increase in mortality of those aged 50 and above resulted in an overall loss of more than 3.5 years of life expectancy. Urban male mortality for those above 55 also increased, resulting in a loss of 1.8 years of life expectancy. In rural areas, female life expectancy decreased by 2.2 years due to the mortality increase of those aged 50 years and older, and by 1.4 years for men as a result of the mortality increase for those aged above 60. (Figure 3.24)

Meanwhile, the mortality decline for children and economically active ages, during the same period, compensated for the mortality increase of the older age groups. At the same time, because of mortality increase of the older age groups, life expectancy of both urban and rural women declined by 3.2 and 0.4 years respectively, while for urban men life expectancy decreased, for the same reason, by 1 year.

After 2000, mortality in the older age groups started to decrease and by 2010, male mortality had returned to levels similar to those found in 1990, with the situation

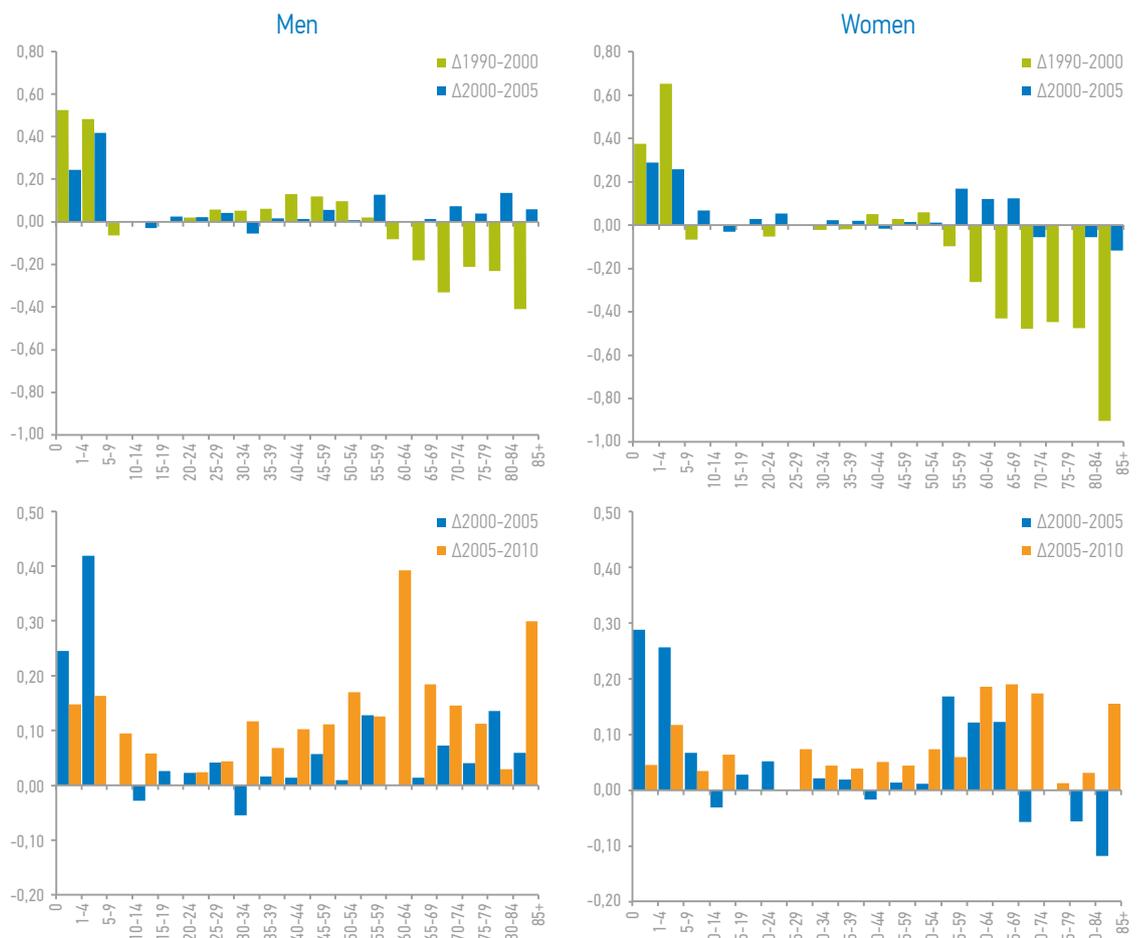


Figure 3.23

Figure 3.23
Decomposition of gender difference in life expectancy in Azerbaijan in 1990-2000 due to changes in age-specific mortality

being somewhat better in urban areas than in rural. In 2010, life expectancy at age 55 for urban women was 23.8 years against 25.4 years in 1990, however in rural areas female mortality at older ages continued growing until 2005, when it began to decrease, and in 2010 life expectancy for rural women aged 55 was 2.6 years lower than in 1990, 24.3 and 26.9 years, respectively.

In 2010 infant and child mortality in urban populations was higher in comparison to 2005. Normally, this increase would result in a decline of 0.11 in male life expectancy and of 0.19 in female life expectancy. Between 2005 and 2010, when male life expectancy increased by 2.4 years and female by 1.4 years, the significant mortality decrease at ages 60 years and older increase male and female life expectancy by 1.3 and 1.1 years, respectively. Therefore, by the end of the 21st century in Azerbaijan, the decrease in mortality in older age groups became the principal reason for the increase in life expectancy in the urban population, with infant mortality decrease becoming the secondary reason for the life expectancy increase.

However, the decline in infant and child mortality remained the main reason for the growth in life expectancy in rural areas. Thus, male life expectancy increased by 1.16 years between 2000 and 2005 and by 0.8 years between 2005 and 2010 as a result of mortality decline in those aged below five, while the

life expectancy of rural women increased by 0.75 and 0.5 years for the same period. Meanwhile, the effect on life expectancy of the mortality decline in older age groups was significantly lower in rural areas. For rural women, the increase in mortality for those aged above 55, observed between 1990 and 2000, began to decrease resulting in an increase in life expectancy of 0.83 and 0.97 during the periods 2000-2005 and 2005-2010. Male mortality at ages 60 and older demonstrated relapses till the year 2010.

The increase in male mortality in rural areas for those aged 60 and above was especially remarkable in the 1990s when male life expectancy dropped by 2.65 years between 1990 and 2000. However, due to an increase in mortality of rural males aged 60 and older between 2000 and 2005, this indicator decreased by 0.6 years. Between 2005-2010 mortality among rural men only showed an increase in those aged above 70 (and thus a life expectancy decrease of 0.36 years), while those aged 60-69 showed a declining rate (a life expectancy increase of 0.48). These patterns resulted in an increase of 0.12 years in the overall life expectancy of the rural male population.

Thus, at the turn of the 20th century, Azerbaijan's overall positive trend of male and female life expectancy masked quite contradictory trends and fluctuations that either reinforced or compensated for each other. Nevertheless, from the first decade of the 21st century, the evolution of

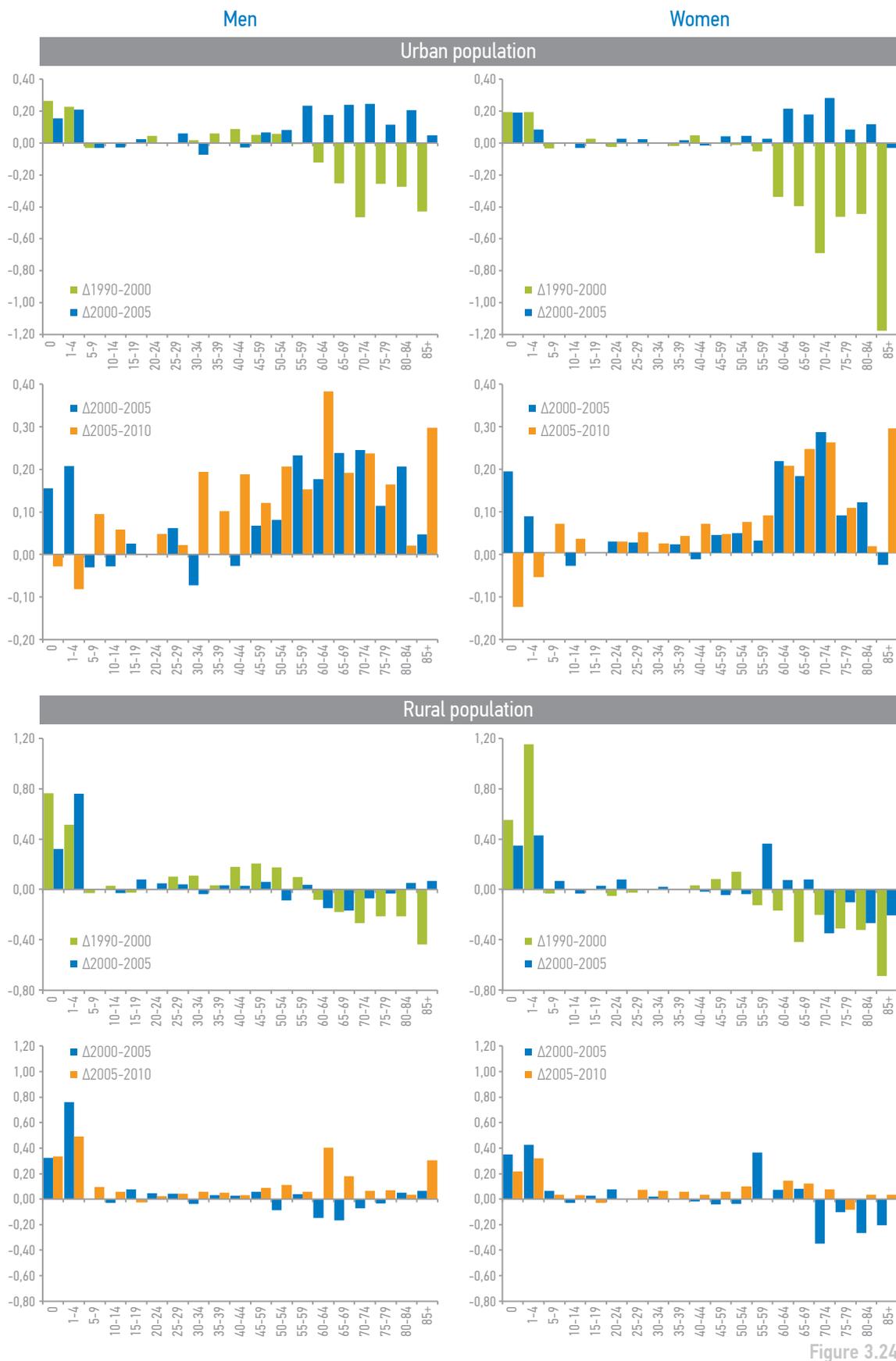


Figure 3.24
Decomposition of changes in male and female life expectancy in urban and rural Azerbaijan between 1990, 2000, 2005 and 2010

life expectancy of the urban population entered a new phase characterised by a decline in mortality in older age groups. Ten years later the rural population showed a similar trend. During the next decade, this decrease in

mortality in older age groups will play an increasingly important role in the ageing of the population and on the demands placed on health care and social security systems.

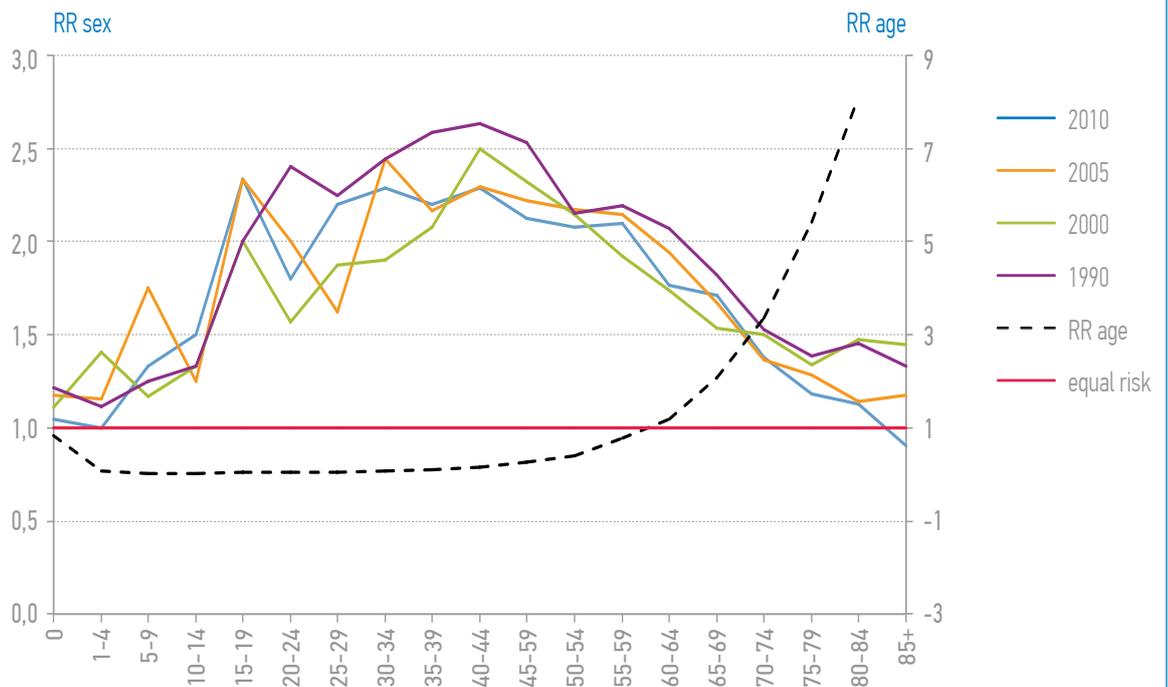


Figure 3.25

Figure 3.25
Age-specific excess male mortality (relative risk of death) in Azerbaijan in 1990, 2000, 2005 and 2010.

3.4.3. Gender inequality toward death

While mortality decrease at older ages may be considered as an “evolutionary” reserve of increase in life expectancy, decline in male (over-)mortality at economically active ages represents “situational” or short-term reserve of increase in average life expectancy. According to official statistics, Azeri men currently live an average of 5.5 years less than women and are more likely to die in middle age than women. Current mortality levels show that only 8% of 20 year-old women are likely to die before the age 60, while for men the figure is double - 16.5%. Of course, mortality levels in the age groups 20-60 are significantly lower than the average, and age-specific mortality rates (for both genders together) become higher than the crude death rate from 60 years of age onwards, but the lower the age at death, the higher the number of person-years lost due to “premature” deaths.

Adolescent males are 1.5 times more likely to die than girls, no matter what the cause of death, and in the economically active age group male mortality doubles that of female mortality. Male mortality remains higher than female mortality until the age of 85, with the 40-45 age group showing the widest gender gap. The situation remained unchanged during the last decade, though a slight improvement was observed between 1990-2000. This was probably due to changes in the ethnic structure of the population, in particular the decrease, by 10 times, in the Slavic population that had a higher risk of alcohol-related mortality, especially at ages 20-25. (Figure 3.25)

Recent studies on differences in mortality by ethnicity in Kyrgyzstan revealed that, despite higher levels of education and well-being, the mortality rates of the Slavic population at economically active ages were higher than those of the indigenous Middle Asian ethnic groups. This is often referred to as the ‘Russian paradox’. The risk of alcohol-related death for the active aged Slavic population is 14 times higher among men and 27 times higher among women compared to the indigenous population of Kyrgyzstan.²⁸ Although a similar study has not been carried out in Azerbaijan, it is quite probably that the situation was found in the 1990s and thus influenced the overall mortality dynamics as well as the differences in mortality by gender. Of course, any ethnicity-related influence on mortality data would be less evident than that of Kyrgyzstan or Kazakhstan, as in the end of the 1980s/early 1990s, the Slavic population was considerably higher.

A comparison of gender life tables for 2010, based on age-specific mortality rates from Azerbaijan official statistics, reveal that as little as 0.22 out of 4.8 years of gender gap in life expectancy is lost in the child and adolescent age groups (below 20). The increase in male mortality at ages 20-40 and 40-50 widens the gender gap in life expectancy by 0.68 and 0.9 years respectively; however, the 50-70 age group mortality rates have the biggest impact on male life expectancy, due to the combined effects of relative risk of death among men and the growing risk of death among elderly. Above 70 years old the gender differences

²⁸ Michel Guillot, Natalia Gavrilova and Tetyana Pudrovska, 2011, “Understanding the “Russian Mortality Paradox” in Central Asia: Evidence from Kyrgyzstan” in *Demography*, vol.43, no. 3, pp. 1081-1104

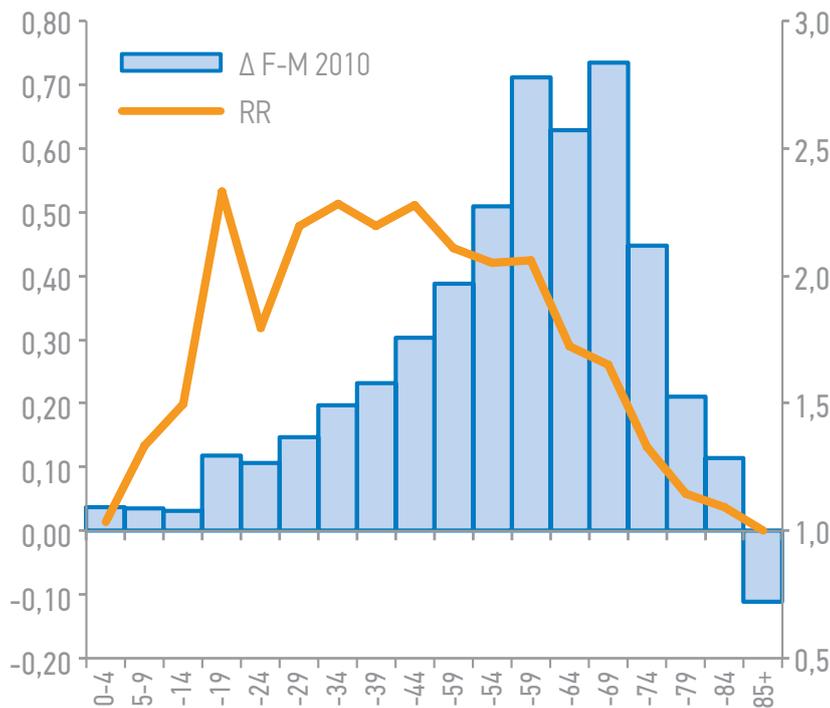


Figure 3.26

in mortality reduce and after the age of 85, female mortality is higher than male. (Figure 3.26)

Thus, the current decline in male mortality at ages 50 and older represents the main reserve of the decrease in the gender difference in life expectancy.

Unfortunately, no data is available regarding mortality for the 85+ age group, although today up to 26% women and 17% men live to these ages. In developed countries the proportion is higher, around 60% women and 40% men and, for better understanding of the whole process it is necessary to dispose of detailed information on mortality up to, at least, 100 years of age.

Figure 3.26
Age-specific decomposition of gender gap in life expectancy and relative risk of death for men. Azerbaijan, 2010

Figure 3.27
Age decomposition of gender difference in life expectancy of urban and rural population. Azerbaijan, 2010

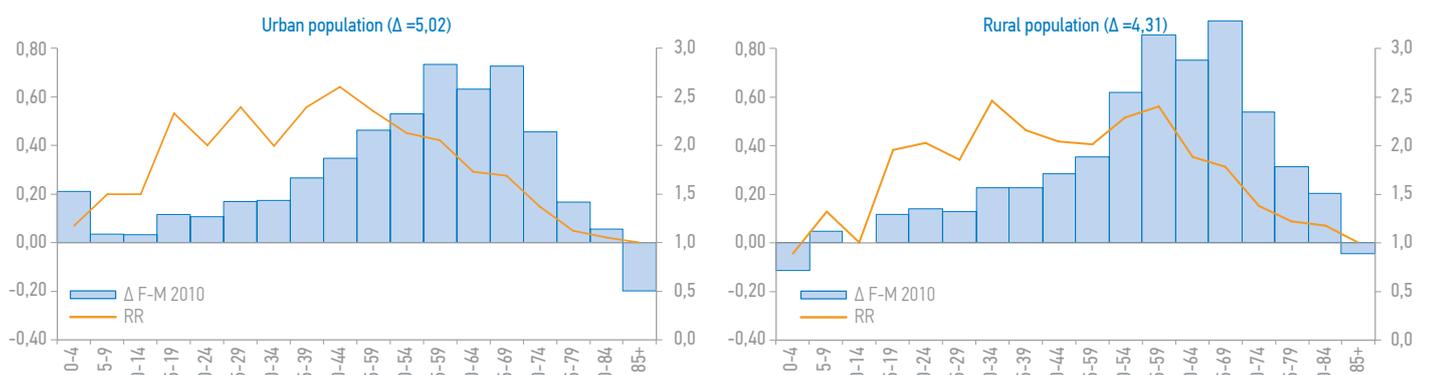


Figure 3.27

Conclusions

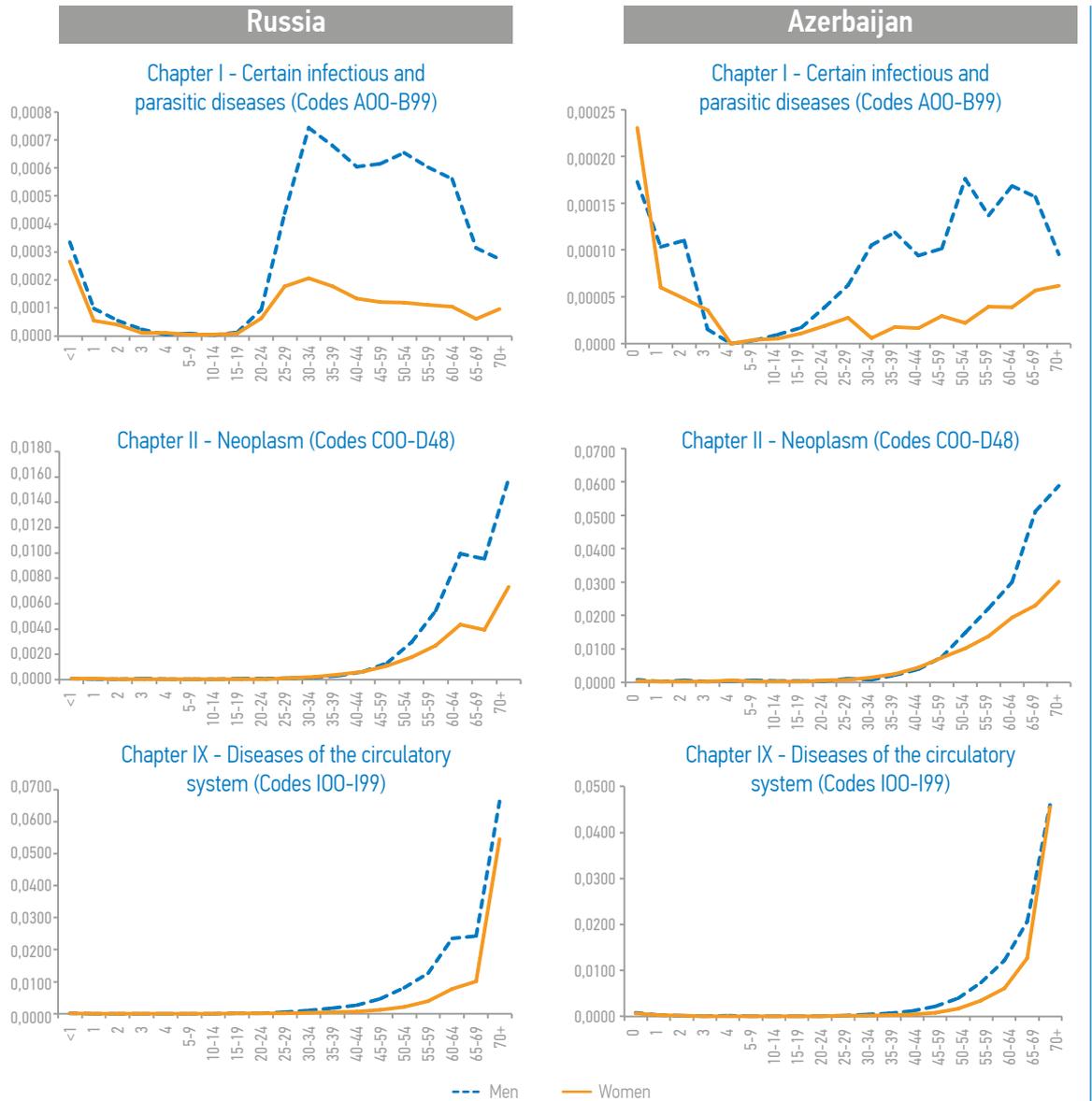
- From 2000, the evolution of mortality and life expectancy in Azerbaijan entered the modern phase of so-called “sanitary transition” which was characterised by fundamental changes in the epidemiologic situation and the life style of the population. In the developed European and Northern American countries this stage of sanitary (called before “epidemiological”) transition started in the 1980s, when mortality decline in the older age groups became the main reason for the increase in life expectancy.
- In Azerbaijan, the decrease in infant and child mortality was the biggest contributor to the increase in life expectancy until 2000, while elderly mortality increased, for unclear reasons, reducing the increase in life expectancy.
- Since the beginning of the 21st century, the contribution of specific age groups to life expectancy growth has begun to change. Between 2000 and 2005, the decline in infant and child mortality was still the biggest contributor to the life expectancy increase; the decrease in elderly mortality also had a positive, although modest effect on life expectancy accounting for 10% of its growth during this period. Between 2005 and 2010, the decline in mortality in the 60-79 year old age group accounted for more than a third of the increase in male life expectancy and 40% of the female one, and thus had a greater impact on the growth in life expectancy than the decline in infant and child mortality.
- From 1960 to 2010, the level of infant mortality in Azerbaijan decreased five times. Nevertheless, today, in spite of the positive trend confirmed by official statistics, infant mortality is still a cause for concern and needs a special attention of public health, official statistics and justice administration. A comparative analysis of state statistics and survey data has shown that a significant number of infant deaths are not registered and therefore not captured by official statistics. Additionally, data on the distribution of infant (< one year) deaths by gender and age in days, weeks or months, is not available in publicly available statistics of natural population movement in Azerbaijan.
- The lack or inaccessibility of this information complicates and makes it impossible to estimate the effectiveness of maternal and paediatric health care, and the factors of determination and differentiation of infant mortality levels. This raises doubt about the successful decline in infant mortality in Azerbaijan, and also the accuracy of the overall picture of mortality evolution, estimates for which are based on official statistics. Specific surveys will therefore need to be undertaken to ensure the high quality and thoroughness of infant mortality registration.
- The decline in the mortality rate of the 60+ age group has presented a new set of problems for society in regard to sanitary transition and population ageing. Firstly, how active will this group’s participation be in social and economic life as well as how effectively will the consequences of the gender imbalance be addressed in a growing elderly population. Secondly, how will society cope, faced with having to provide support to those old people unable to live alone, to adapt the health care system and daily living conditions to meet the particular needs of old people and, to ensure the elderly are adequately and professionally cared for at the very end of their lives. Besides, in order to provide for statistical observation of mortality evolution at old ages it is necessary to introduce a very detailed elaboration and reporting of 1-year data on deaths of people aged 85 and older, at least up to the age 100. A detailed analysis will also be necessary,
- The evolution of mortality by cause in Azerbaijan also follows the standard pattern of sanitary transition, with non-infectious diseases replacing infectious ones in the structure of causes of death.
- Diseases of the circulatory system are today’s principal cause of death in Azerbaijan. During the last decade, the proportion of deaths from these causes increased slightly whereas the level of mortality from heart disease decreased. This trend demonstrates the evidence of sanitary progress that may be caused by several factors: the improvement in medical care related to timely diagnostics and successful conservative and surgical treatment of heart and blood vessels; positive changes in life style (diet, physical activity, abstinence from tobacco and alcohol consumption); and finally, a decrease in mortality from infectious diseases.
- Change in mortality from oncological diseases during the last decade could be explained by the lack of effective and timely diagnostics of such types of neoplasms as breast cancer (representing around 10% of female mortality from cancer in 2007) or

rectum and stomach cancer (15% of deaths from cancer in 2007). It is important to mention that in Azerbaijan the analysis of cause-specific mortality is difficult because of the lack of publicly available information on gender-, age- and cause-specific distribution of deaths.

- In Azerbaijan, positive dynamics in the gender differences in mortality and life expectancy can be observed. The male population, however, has a higher risk of mortality from cancer, infectious and parasitic diseases, as well as injury, poisoning and certain consequences of external causes. Hence, a decrease in male mortality from these diseases within the next few years may become an important implement of growth, not only of life expectancy, but also of the number of years spent at the economically active age, where male mortality is particularly high.

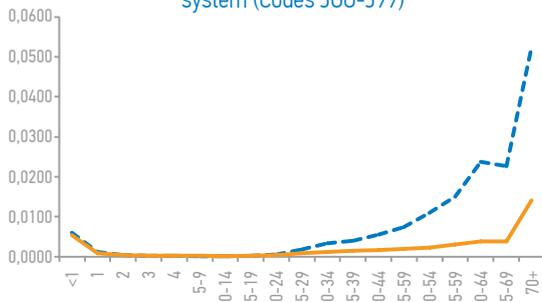
Annex I

Figure A-1.1
Age-specific profiles of mortality by cause in Russia in 2009 (standard) and Azerbaijan in 2007 (IMDB)

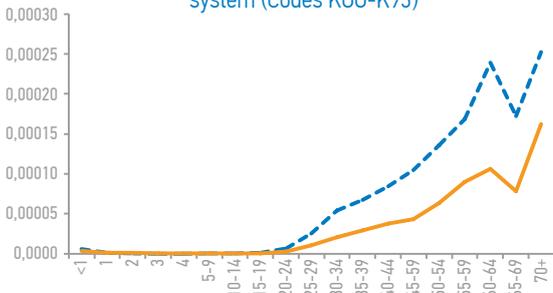


Russia

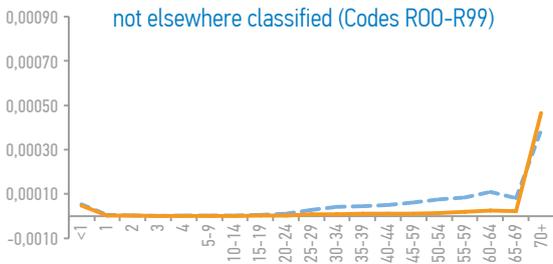
Chapter X - Diseases of the respiratory system (Codes J00-J99)



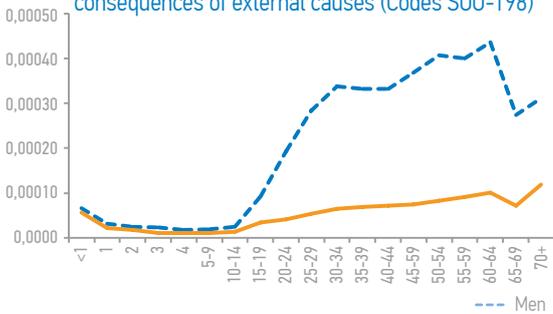
Chapter XI - Diseases of the digestive system (Codes K00-K93)



Chapter XVIII - Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (Codes R00-R99)

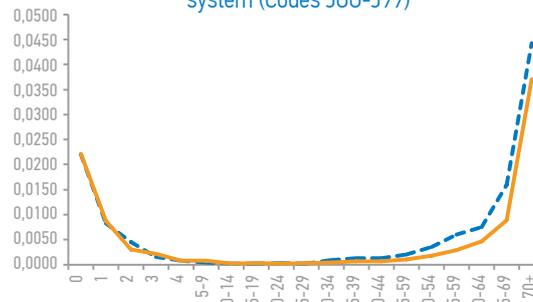


Chapter XIX - Injury, poisoning and certain other consequences of external causes (Codes S00-T98)

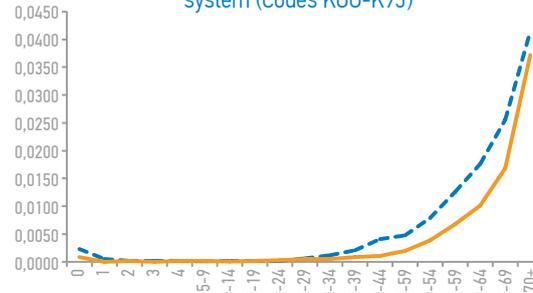


Azerbaijan

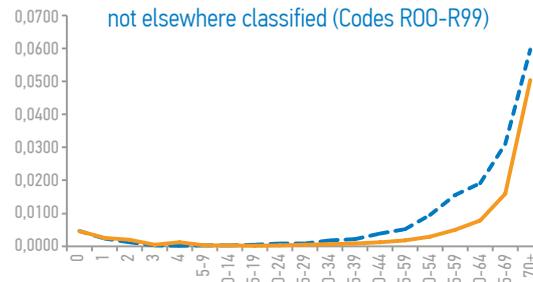
Chapter X - Diseases of the respiratory system (Codes J00-J99)



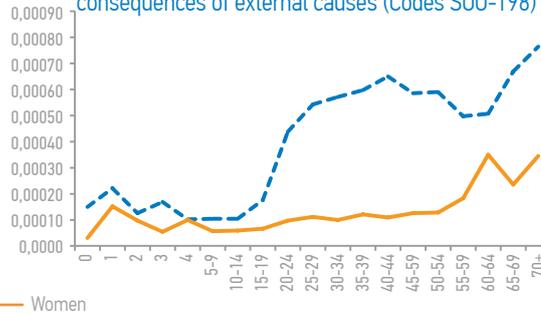
Chapter XI - Diseases of the digestive system (Codes K00-K93)



Chapter XVIII - Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (Codes R00-R99)



Chapter XIX - Injury, poisoning and certain other consequences of external causes (Codes S00-T98)



--- Men
— Women

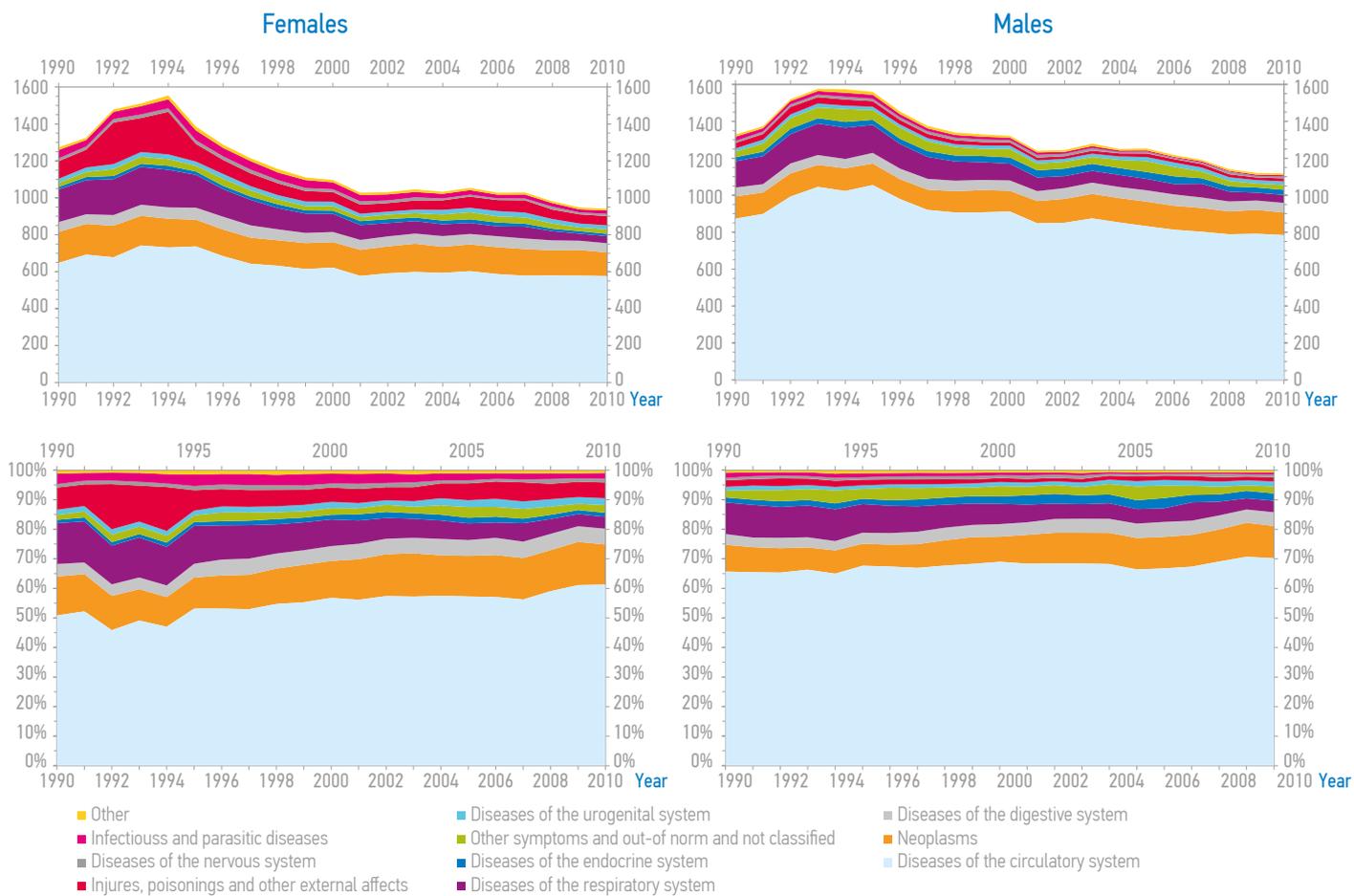
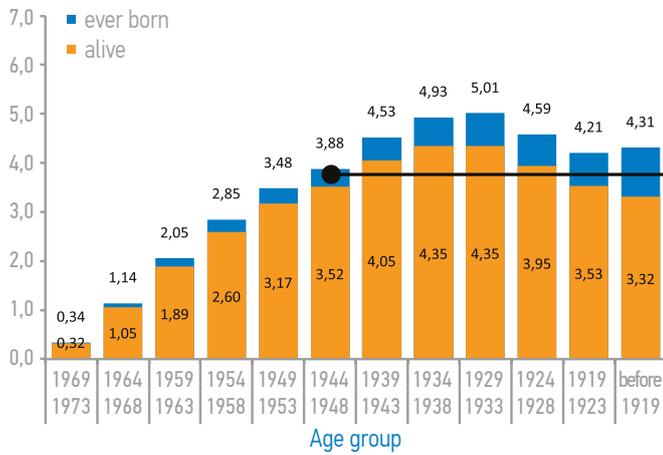


Figure A-1.2
 Age-standardized levels
 (per 100 000 population)
 and structure (in %) of
 mortality by principal
 cause-of-death groups
 (detailed presentation).
 Azerbaijan, 1990-2011

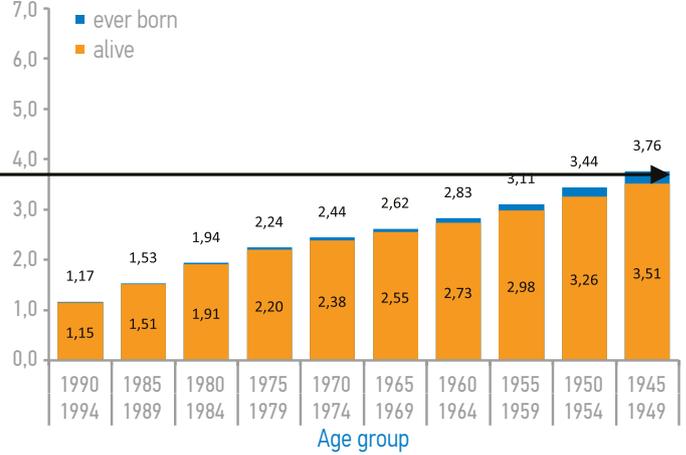
Annex II

Urban and rural population

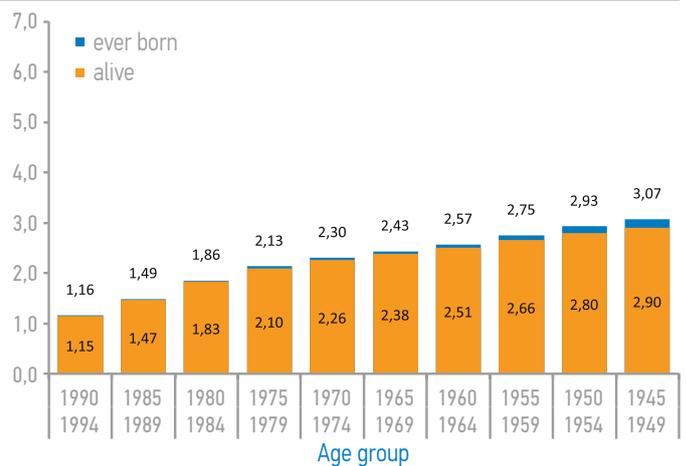
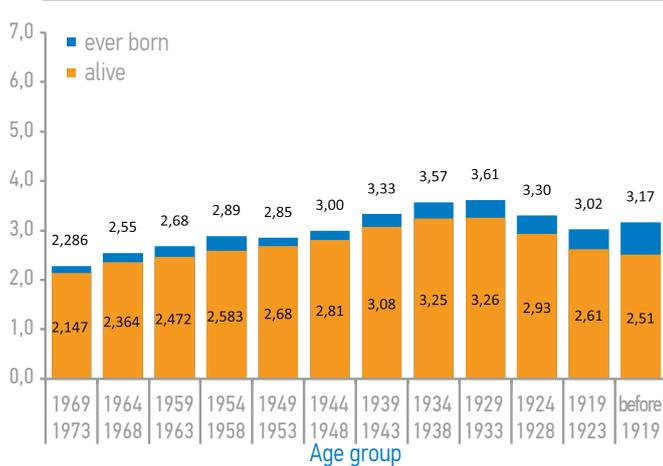
1989 Census (married women)



2009 Census (all marital states)



Urban population



Rural population

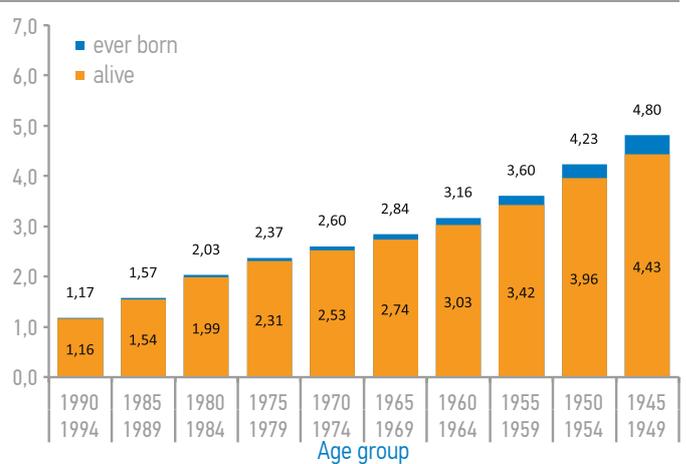
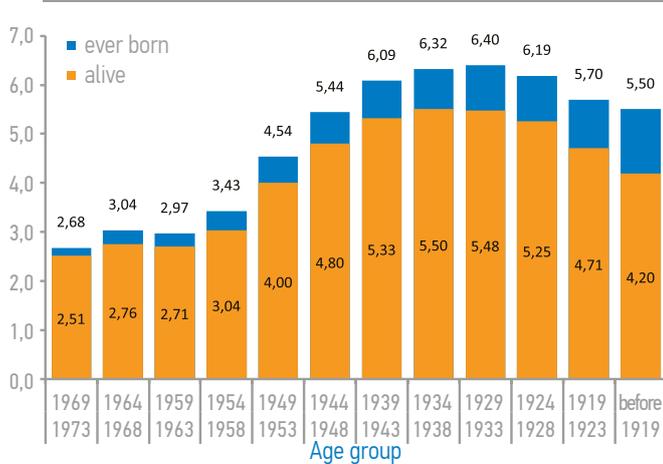
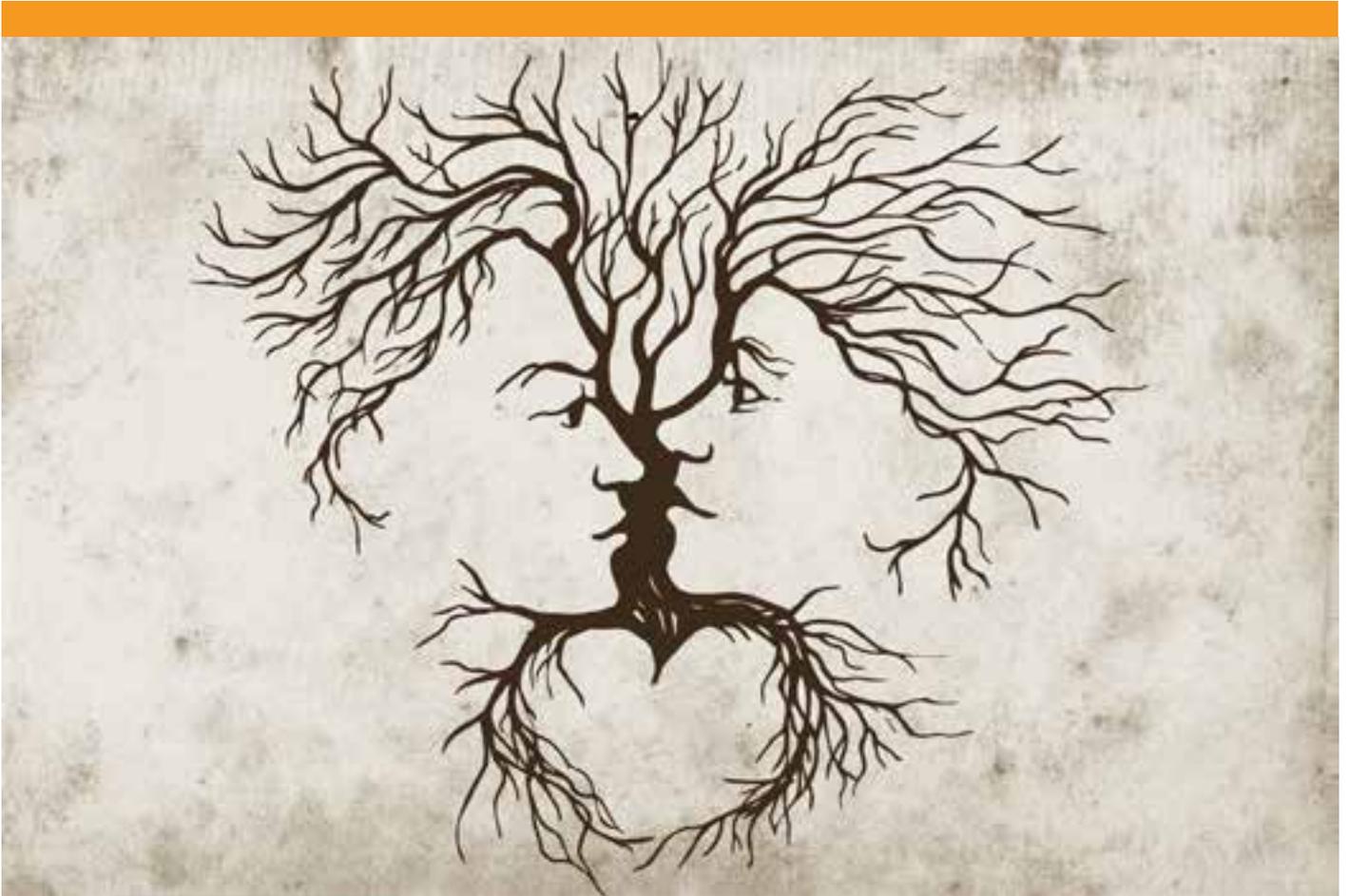


Figure A-2.1
Average number of children ever born and alive, according to the 1989 and 2009 censuses



4

GENDER

4.1. Gender inequality in the demographic context

The decline in the fertility during demographic transition is one of the main reasons behind the transformation of gender relations in modern society. The change in the social position of women as a result of improvements in education, growing professional activity and empowerment, is one of the crucial factors influencing the family cycle, marriage, reproductive behaviour and demographic dynamics in general. As such, an overview of the gender situation should also be considered when analysing the population situation of Azerbaijan.

Historically, gender relations in Azerbaijan, like in many other countries, were often seen through the prism of equality between men and women because the hierarchy of relationships between people of different ages, sex, income level, origins and place of residence often put women in a subordinate position or even oppressed them. Women have been restricted or deprived of political rights, have only been permitted limited education and professional development opportunities, experience a lack of social security and have limited freedom in making family choices. Gender equality can only be ensured through a three-pronged approach: first, enacting legislation protecting individuals from gender-based discrimination; second, ensuring material conditions, access to education, health care and professional activity, and, third and most challenging, changing people's mind-sets to end gender-based discriminatory attitudes and stereotypes in public and private life.

The legal framework for gender equality in Azerbaijan was formulated a century ago when the equality of political rights of men and women was proclaimed in the Act of Independence of Azerbaijan passed on 28 May 1918. Social and political equality between men and women was further reiterated in the Constitutions of Azerbaijan SSR in 1921, 1927, 1937 and 1978 and through other legal acts of the Soviet era. After the collapse of the USSR, the Republic of Azerbaijan, as a newly independent state, embarked on the development of its own gender policy that inherited some elements of the Soviet policy (for example, paying special attention to the protection of motherhood and the involvement of women in general and mothers in particular in economic activity). However, as Azerbaijan charted out its national development priorities and became a member of the international community its national gender policy also evolved, though not always in a coherent way. On one hand, the gender policy emphasises 'women's issues' as a stand-alone area requiring concerted government efforts to preserve family values, thereby highlighting the important role women play in reproduction. On the other hand, Azerbaijan is slowly shifting towards a new approach - gender mainstreaming - making gender equality an integral part of national development policies across all sectors.

The Constitution, as the supreme law of the state, guarantees equal rights to all citizens of Azerbaijan regardless of sex. This general principle is reflected to a certain degree in other legal acts. In 2006 Azerbaijan passed the Law on Gender Equality that for the first time in the country's history provided a definition of gender equality and gender-based discrimination. In the same year, the State Committee for Women Affairs was reformed into the State Committee for Family, Women and Children Affairs, the principal executive authority responsible for the implementation of policies protecting women rights. In 2010, Parliament passed the Law on Domestic Violence paying special attention to protecting the rights of victims of family violence. From the mid-90s the Republic of Azerbaijan undertook a number of important international commitments promoting gender equality. The country ratified the Convention on Elimination of All Forms of Discrimination against Women (1995), supported the Beijing Platform of Action (1995), ICPD Programme of Action (1994) and Millennium Development Goals.

An overview of the historic changes that occurred over the past hundred years reveals some impressive accomplishments. Gender equality is embedded in the Constitution of Azerbaijan and reinforced by a well-developed legislative basis protecting women's rights in family and public life. Compared to the early 20th century, Azerbaijani men and women have longer life expectancy, are literate, have at least nine years of schooling, marry at an older age, have less children, are part of a nuclear as opposed to an extended patriarchal family, and have nearly equal chances of living in urban or rural areas. A significant proportion of Azerbaijani women has earned income provided by an outside of household economic activity.

However, research has found that gender inequality remains an important determinant influencing the organisation and functioning of both family and society. In reality, the access women have to resources (economic, cultural, information and social) is significantly restricted compared to that of men. The level of female participation in decision-making processes in personal, public and political life is also lower than that of men. A commonly accepted division of family responsibilities confines the women to the private realm by emphasising the women's value primarily for their reproductive function. As described elsewhere in this chapter, this dynamics of gender relations leads to multiple burdens that seriously impede personal growth of the women despite the opportunities presented by the period of 'demographic dividend'.

4.2. Measuring gender inequality

Since the 1990s the UN and other international organisations have been developing and applying various instruments to measure the degree of gender

inequality at the country level. These instruments monitor trends in certain indicators and compare gender inequality across countries and regions. The 2010 UNDP Human Development Report introduced a new measurement of gender disparity – the Gender Inequality Index (GII). The index captures the human development costs of gender inequality. The GII measures gender inequalities in three important areas of human development – reproductive health, measured by maternal mortality ratio and adolescent birth rates; empowerment, measured by the proportion of parliamentary seats occupied by women and the proportion of adult females and males aged 25 years and older with at least some secondary education; and economic status, expressed as labour market participation and measured by the labour force participation rate of female and male populations aged 15 years and older. The GII scale ranges from zero to one, with 0 being 0% inequality, indicating women fare equally in comparison to men, and 1 being 100% inequality, indicating women fare poorly in comparison to men.

According to the 2014 Human Development Report, Azerbaijan ranks high in the human development category. With its GII value of 0.340 Azerbaijan ranked 62 among 152 countries in 2013. Azerbaijan's GII is higher than the average value for the Europe and Central Asia region.¹ Several indicators of gender inequality that are part of the GII as well as those outside the GII will be discussed later in this chapter.

4.3. Gender routes in education

In the first half of the 21st century Azerbaijan anticipates an intensive influx of young people into the labour market. The education level and specialisation of this human resource will play a crucial role for the country's development. As the figures show, there are gender disparities in educational opportunities and career choices and, therefore, the gender aspect has serious implications on the quality of the future workforce.

Equal rights and opportunities in education is one of the major components of gender equality. Wider education opportunities help eliminate poverty, reduce inequalities, and fight open and hidden discrimination against women. Educated women have more opportunities for individual development and stand better chances of becoming economically independent. Educating women also helps improve the reproductive health of women and their children.

Ensuring the equal rights of men and women in education is embedded in the national legislation. The Constitution of the Republic of Azerbaijan (Article 42) guarantees all citizens, regardless of gender, the right to free universal mandatory secondary education. This right is also reflected in the Law on Education (2009).

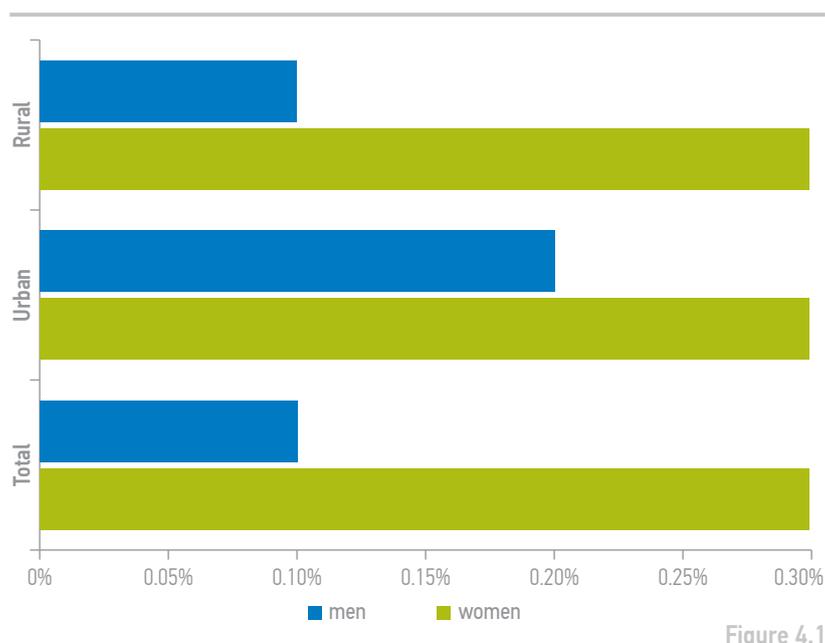


Figure 4.1

4.3.1. Literacy

Azerbaijan belongs to a group of countries with a very high literacy level among both men and women. This indicator has remained stable for decades despite the social and economic hardships of the 1990s, the war and the displacement of large groups of the population (about 130,000 students and 20,000 education workers became refugees).

There are minimal disparities between men and women in this area (Figure 4.1). Notwithstanding the shocks experienced by the country, the state structure and society as a whole managed to secure a high value for this indicator that is fundamental for human development.

The elimination of gender disparity in education is one of the indicators measuring progress towards gender equality in the Millennium Development Goals. The Gender Inequality Index also includes an education-related indicator: gender gap in attainment of 'secondary and higher education'.

The education system in Azerbaijan has the following levels: pre-school education (up to 6 years), primary education (1-4 grades), general secondary (5-9 grades), complete secondary (10-11 grades, upon completion students receive a certificate on completion of secondary education), primary vocational education (starts upon completion of the general secondary education, graduates receive a diploma on completion of secondary education), secondary vocational education and higher education. Higher education has three stages: bachelor, master and doctorate. Over the past few years the quality of education at all levels has been heavily criticised, which is justified by the increasing number of failures on entry tests for higher education schools.²

Figure 4.1
Literacy of the population aged 15 and above

¹ Human Development Report, United Nation Development Program Table 4: Gender Inequality Index, <http://hdr.undp.org/en/content/table-4-gender-inequality-index>

² State Commission on Admission of Students, Abiturient, (Baku, 2011, 2012)

Figure 4.2
Distribution of students that graduated from general education schools and received a school leaving certificate and admitted to higher educational institutions in 2013 by gender (selected data)

4.3.1.1. Primary and secondary education

A large number of both boys and girls enrol in primary school across the country. Over the past 10 years this indicator has never been lower than 99%. However, there are significant regional disparities in gender parity. For example, in the Sheki-Zagatala economic zone and Nakhchivan Autonomous Republic the ratio of girls to boys in primary school is higher than the national average, whereas in the Absheron and Daglyg-Shirvan region it is significantly lower.

The generally high index of gender equality in secondary education has shown a decline since 2008 and the proportion of enrolled girls is now lower than the proportion of boys.

Regional data shows significant disparities across the country. A comparison of results of the final exams after the 9th and 11th grades reveals worrisome trends of gender imbalance. In the southern regions (Lenkoran, Astara, Lerik, Yardimli, Jalilabad and Masally) the proportion of girls in the total number of students noticeably declines after the 9th grade (from 46% to 38%). In the northern regions (Sheki, Balakan, Gakh, Oguz), on the contrary, it is the proportion of boys that falls from 52 to 48%.³

The falling proportion of boys can be explained by the fact that some boys migrate to neighbouring countries in search of better livelihoods.⁴ The decrease in the proportion of girls at the secondary education level could possibly be caused by girls dropping out after completing primary school but before finishing secondary education, and this problem has not been well studied. Research conducted in certain regions of Azerbaijan confirms the seriousness of the problem and indicates that early marriage could be the cause. However, this issue should be studied throughout the country before a determination of cause is made.⁵

In addition to early marriage and school drop-out, the situation might be aggravated by the continuing masculinisation of the rural population. As there are fewer girls in rural areas, their reproductive value goes up, thereby breaking the balance between the productive and reproductive function of women established in the Soviet period and early years of independence.

Additionally, a certain number of girls choose vocational education after completing the 9th grade of secondary education, which could be another factor explaining the drop in enrolment. The proportion of students in the total number of female students following this route increased from 0.9% in 2008 to 12% in 2012, with many girls showing particular interest in healthcare and education. However, this factor alone is not sufficient to explain the regional disparities.

4.3.1.2. Higher Education

At the national level the proportion of young women and men, both among those who applied and who entered into higher education institutions, is nearly equal (49% boys and 51% girls in 2012)⁶. Indeed in 2011, 2012 and 2013 the share of girls (56%/2013) admitted for a Masters course was higher than for boys (44%/2013).⁷

The indicators segregated by regions again reveal the degree of gender divide between various parts of the country. In large cities such as Baku and Mingechevir the situation is close to gender parity. In Ganja, the second largest city, and some regions in the north-western part of the country (Sheki, Zagatala, Gazakh, Akstafa and Beylagan) the admission rate for higher educational institutions was higher for girls than for boys. However in the southern part of the country, the gender gap in accessing higher education is significant

³ Statistical analysis of the results of students admission for 2012-2013 academic year, Abiturient N12, (Baku, 2013)

⁴ *ibid.*, p. 300

⁵ UNICEF, Study on Child Marriages in Azerbaijan, (2010); UNDP, The Assessment of needs and concerns of rural women in the pilot area. Community and Economic Participation (2011).

⁶ Statistical analysis of the results of students admission for 2012-2013 academic year, Abiturient N12, (Baku, 2013), p. 322.

⁷ Abiturient, (Baku, 2011), pp. 206-207, Abuturient, (Baku, 2012), pp. 214-215.

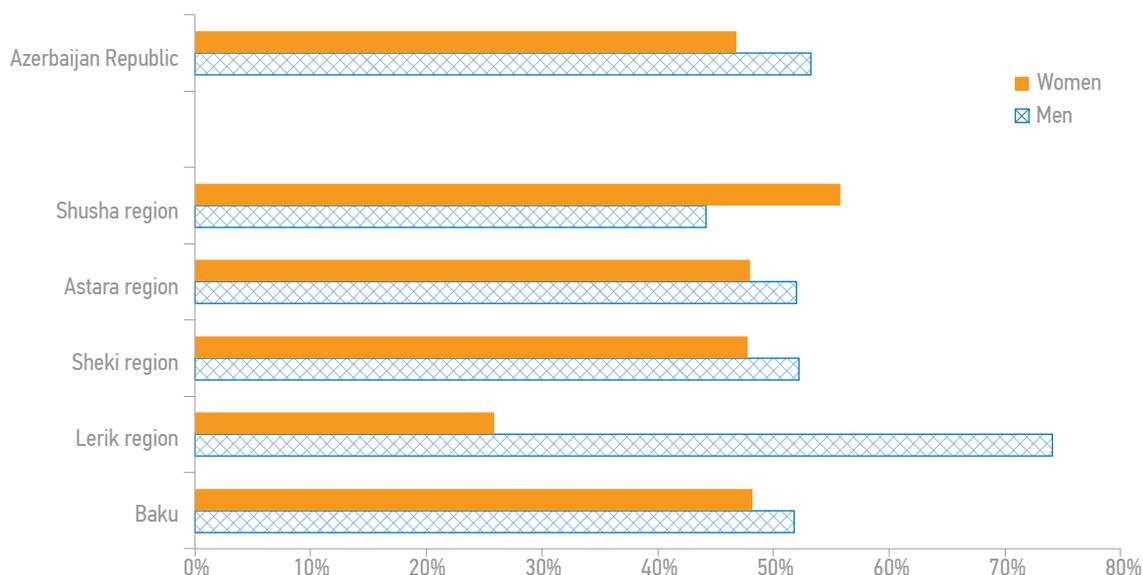


Figure 4.2

and in some regions even dramatic. In Lerik, Astara, Yardimli the proportion of girls admitted into higher educational institutions was 11-21%.

The proportion of girls accessing higher education among refugees and the internally displaced population remains low. For example, in the Susha region the number of admitted girls is 1.5 times lower than the number of boys.

4.3.2. Educational choices and gender segregation

Indicators on access of men and women to various levels of education present only one part of the picture of the gender gap in education. Another dimension of the problem is the prevalence of gender stereotypes in educational choices and high gender segregation (over-representation of young men or women in certain higher educational institutions or faculties of certain specialisations). According to the 2007 National Human Development Report the majority of respondents participating in the Gender Attitudes Survey (57.7%) fully or partially agree with the viewpoint that few prospects exist for girls to acquire traditionally male 'technical' professions⁸. Careers in healthcare and teaching are regarded as more suitable for girls.

The data reflecting educational choices indicates that perceptions have changed little over the past five years. Male applicants consistently⁹ prefer careers working in the exact sciences, management, economics and, traditionally for Azerbaijan, the oil industry. It should be noted that occupational choices of boys are quite diversified and they are represented in the entire spectrum of specialisations. Girls are more limited in their choices - in 2012, 55.3% of all female students studied specialisations in the areas of education and the humanitarian and social sciences, while 80-99% of male students in higher educational institutions received training for the rapidly developing sectors of the economy, such as the oil industry, marine technology, construction, and transport.

Such gender segregation is the result of many factors, the most influential of which is the pattern of distribution of family responsibilities. Men prefer occupations that provide opportunities for higher income jobs whereas girls commonly need to take into account having to reconcile work-related responsibilities with domestic labour and raising children. Girls, especially from rural areas, have to opt for higher education institutions which have predominantly female personnel and students, as frequent contact with men is discouraged. This factor plays an important role in determining the place of work.¹⁰

The largest share of employment is provided by the agricultural sector – 37.9% of the total employed

population (of which half are women) is engaged in this sector.¹¹ Despite incentive measures for entrepreneurship in agriculture, girls have very low interest in studying agricultural specialisations: constituting only 0.2% of students in vocational education schools and 1% of students in state-owned higher educational institutions in 2012.¹² Hence, the overwhelming majority of women engaged in the agricultural sector do not have an educational background in the respective field. Both male and female applicants rarely choose agricultural specialisations, believing that investment in specialised education in this field is not beneficial and therefore pointless.

Therefore, the situation with gender segregation in educational institutions and the labour market continuously repeats itself. For years girls have been concentrated in a limited range of specialisations provided by higher and vocational educational schools, thus significantly restricting women's access to the rapidly developing sectors of the economy. If the current gender segregation trends in education persist, with an influx of young specialists into the labour market in the coming decades, the country is likely to face a situation of an over-supply of women specialists in a very narrow range of occupations.

4.4. Gender inequality in economy

The government of Azerbaijan considers the reduction of gender inequality as an important pre-condition in the eradication of poverty. The State Programme on Poverty Reduction and Sustainable Development for 2008-2015 defines progress towards gender equality as one of the success criteria in fighting poverty.¹³ This approach recognises gender inequality as a human rights issue and a serious impediment to achieving sustainable development. Over the past few years Azerbaijan has made remarkable progress in reducing poverty. However, in order to understand the impact of poverty alleviation on men and women it is necessary to look at the various dimensions of their situation in the economy.

The demographic and socio-political processes that occurred in the country in the second half of the 20th century, including the drastic change in the reproductive behavioural patterns of both urban and rural populations, resulted in the nuclear family, with 1-2 children, becoming the most common. In theory, this situation is favourable as both spouses are active in economic life and generate individual and family income, and women have an increased chance of equal opportunities regarding improved livelihoods, education, professional and career growth, and active participation in public life. During 1970—2015 the able-bodied family members have had a relatively low workload to support children and the elderly and

⁸ Gender Attitudes in Azerbaijan: trends and challenges, Azerbaijan Human Development Report, UNDP, 2007, p. 40

⁹ According to the data of 2007-2008, 2008-2009, 2009-2010 and 2011-2012 academic years, official site of the State Commission on Admission of Students, <http://tqdk.gov.az/activities/statistics/> (last time accessed on 11.04.2014)

¹⁰ United Nations Development Programme, A. Vezirova, The Assessment of needs and concerns of rural women in the pilot area. Community and Economic Participation, (2011)

¹¹ State Statistics Committee, Demography and social statistics database. Labour market. Table: S.5. Distribution of employed population by economic activity and sex <http://www.stat.gov.az/source/labour>

¹² It is worth noting that the interest of young men is only slightly higher (0.8% and 1.6% respectively)

¹³ State Programme on Poverty Reduction and Sustainable Development in the Republic of Azerbaijan in 2008-2015

could benefit from the opportunities provided by the demographic dividend period.

In practice, however, gender inequality, along with other factors, creates barriers which can slash this positive effect. These barriers include vertical and horizontal gender segregation, a weak infrastructure for family support, women's engagement in the informal sector, labour migration among men, and all forms of hidden gender discrimination and violence.

The proportion of men and women in the total employed population of Azerbaijan is nearly equal.¹⁴ In 2012 women constituted 48.4%, and men 51.6%.¹⁵ Over the past five years this indicator has not changed significantly.

The participation of women in the labour market used to be considered as a sign of progress towards overall gender equality and particularly equality in the economic independence of women. However, a growing body of research in developing countries indicates that an increase in the number of employed women can mask a high level of gender discrimination and deepening inequalities.

To assess the extent of gender inequalities in the economic sphere, a series of indicators should be considered – a legislative framework protecting the economic rights of various gender groups, institutional mechanisms, gender segregation (over/under representation of men and women in different sectors of the economy and different levels of career hierarchies), gender pay gap, access to and opportunity to freely use economic resources, for example, land, real estate, bank deposits and credits.

The legislation of Azerbaijan appears to guarantee men and women equal rights to work, equal pay for equal work, equal rights to entrepreneurial activity, conduct of bank operations, acquisition and possession of land

and other types of property. The equal rights of men and women to inherit property is also embedded in the law. The Law on Gender Equality bans gender-based discrimination in recruitment. However, several provisions of labour legislation also reflect the state's vision of a normative family based on a neo-patriarchal model and support the gender-based distribution of responsibilities, assigning the responsibility for child rearing primarily to women. Labour legislation contains special provisions supporting working pregnant women, breastfeeding women and mothers with under-age children and single fathers raising children aged below 3.¹⁶ The practice shows that these cases of 'positive' discrimination in reality lead to hidden forms of structural discrimination against women, as employers prefer not to hire women. It should be noted that men are now formally entitled to some benefits previously available only to women. However, similar to the situation in the educational sphere, equal rights do not guarantee equal opportunities. For example, the 14-day paternity leave envisaged by the law is unpaid and therefore does not encourage the active participation of fathers in caring for their new-born babies.

4.4.1. Gender inequality and income distribution

Growing household income does not necessarily translate into an improved situation for women. Income distribution, access to resources and having the opportunities to use them often depend on the balance of gender relations in a family. This factor can influence the situation of women who, although they have their own income, are unable to participate when deciding how to spend money due to intra-family rules and bans. Gender inequality in accessing resources and decision-making significantly affects women without regular independent income, for example, housewives. In Azerbaijan, these women constitute a significant part of the unemployed female population - 36.9%.¹⁷

Nation-wide research indicates that income-related decisions are often taken jointly by both spouses.¹⁸ However, regional data on the participation of married women in decision-making related to their own and family well-being (for example, health care, routine shopping and large purchases, visiting relatives) reveals a different picture: in rural areas, 25% of respondents did not participate in any decision of this sort, while in Lenkoran region this indicator was 33.4% and in Daglyg-Shirvan region, 37.3%.¹⁹

Attention should also be paid to the fact that, whereas de jure men and women have equal rights to possess property, the proportion of men receiving income from property is much higher than the proportion of women. The legally binding right to possess property does not necessarily translate into the opportunity to use this right.

Figure 4.3
Employment and Unemployment in 2012 (gender distribution, %)

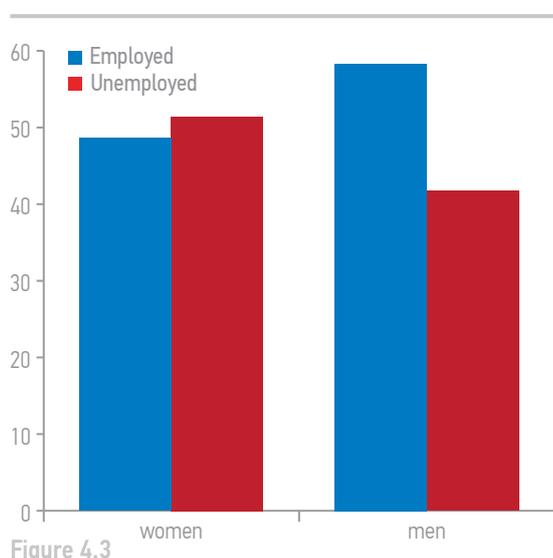


Figure 4.3

¹⁴ This category ("employed persons") includes people engaged in paid labour, entrepreneurs, those engaged in individual labour activity, and those engaged in unpaid labour in family enterprises. State Statistics Committee of the Republic of Azerbaijan, Women and Men in Azerbaijan, Baku, 2012, p. 85.

¹⁵ The State Statistics Committee, Women and Men in Azerbaijan. Table: 4.1. Employment and Unemployment in 2012, <http://www.stat.gov.az/source/gender>

¹⁶ Article 79.1 of the Labour Code defines a group of persons with whom labour contracts cannot be terminated. These are pregnant women, women with children aged below 3 and single fathers raising children below the age of 3. Hence, the responsibility of men for parenting is recognized only in absence of a mother. Labour Code of the Republic of Azerbaijan, edition including additions and amendments made before 1 August 2011. www.genprosecutor.gov.az/files/uploader/AR-in_emek_mecellesi.doc

¹⁷ State Statistics Committee, Women and Men, Baku, 2012, p. 115

¹⁸ State Statistics Committee and Macro International Inc. 2008. Azerbaijan Demographic and Health Survey 2006, (Calverton, Maryland, USA: State Statistical Committee and Macro International Inc), pp. 194-195

¹⁹ Ibid., ctp 197

4.4.1.1. Horizontal and vertical gender segregation

The real situation of working women is often directly linked to certain dimensions of gender inequality, such as horizontal and vertical segregation that are masked by the aggregate figures of women's participation in the labour force and average pay increases across the country. For Azerbaijan it is typical to have an unequal distribution of men and women between various occupations and economic sectors (horizontal gender segregation) and between the top and bottom of occupational hierarchies (vertical gender segregation).

Similar to educational choices, choice of sector and place of work in Azerbaijan is often gender-specific. Some economic sectors experience both over-representation of male and female personnel. As with educational choices, the data shows that the labour market is not just divided into two equal parts reflecting a neutral preference for men and women, but has a pronounced asymmetrical nature: women are more limited in their choice whereas men are broadly represented across many sectors.

Women engaged in paid labour are concentrated in three sectors: education (38.7%), healthcare and the social sphere (16.4%), and commerce (14.7%).²⁰ The majority of the female labour force is engaged in education, healthcare and social services, and recreation and entertainment. These sectors have one of the lowest monthly average pay rates. Income earned by women and their financial contribution to the family budget could be much higher if they were widely represented in such rapidly developing sectors of the national economy as construction, oil production, information and communication, finance and insurance. However, a comparison with 2006-2010 data shows that over a five-year period the situation has not seen a significant change: working women remain secluded in the few traditionally 'female' sectors, despite the intensive growth in the oil and supporting industries which remain dominated by the male workforce.

It is also noteworthy that few women participate in entrepreneurial activities – as of March 2013, women constituted only 17% of the total number of entrepreneurs.²¹

4.4.2. Women in agriculture

Nearly 40% of the population of Azerbaijan are employed in agriculture, and the majority are women (56.5% in 2011).

Figure 4.6 presents the dynamics of the changing proportions of women and men employed in agriculture as a percentage of the total number of employed women

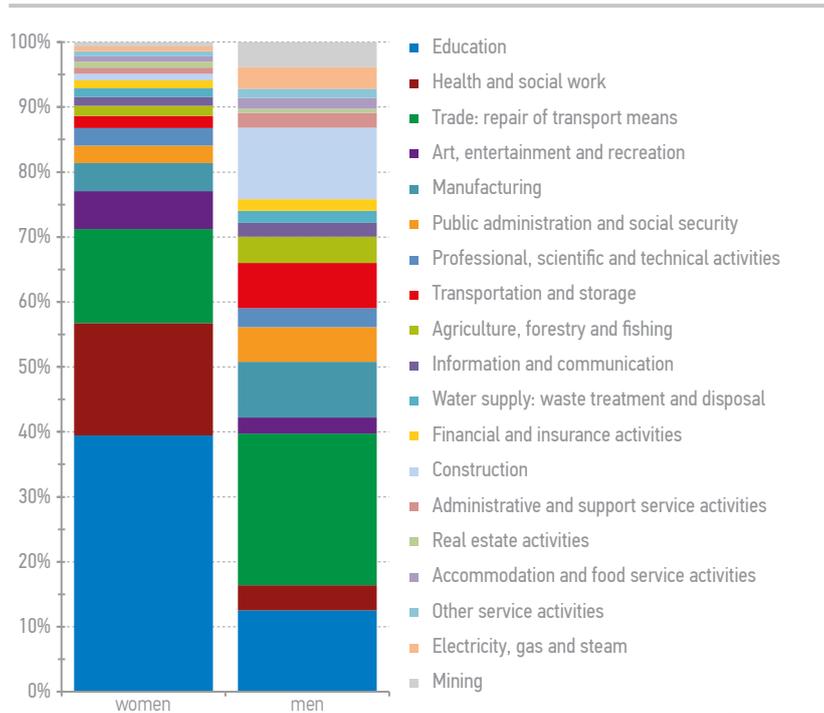


Figure 4.4

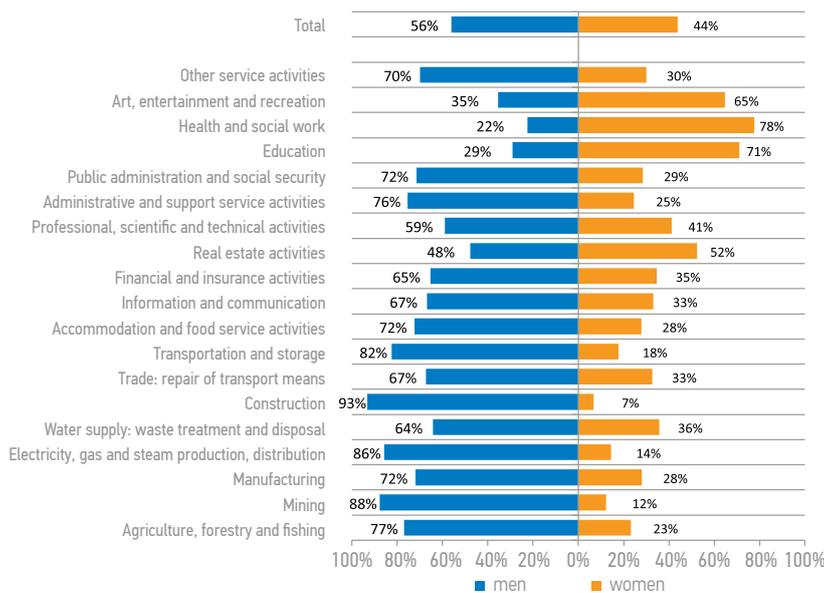


Figure 4.5

and men. Although the share of women employed in agriculture was slowly declining, from 2009 onward it started to increase. The trend is opposite for men. One can conclude that from 2009 men started to leave the low-income agricultural sector and were replaced by women.

These figures are particularly interesting in the context of the demographic trend towards the masculinisation of the population in rural areas where men outnumber women in all age groups below the age of 40. While the proportion of men in rural areas is growing, their participation in the agricultural sector is shrinking. This can potentially be explained by seasonal or long-

Figure 4.4
Sectors of paid labour involving men and women

Figure 4.5
Distribution of men and women in diverse sectors of national economy

²⁰ State Statistics Committee, Women and Men in Azerbaijan. Table: 4.2. Number of persons involved in paid labour in 2012, by types of economic activity. <http://www.stat.gov.az/source/gender/>

²¹ Data of the State Statistics Committee, <http://az.trend.az/news/society/2126268.html>

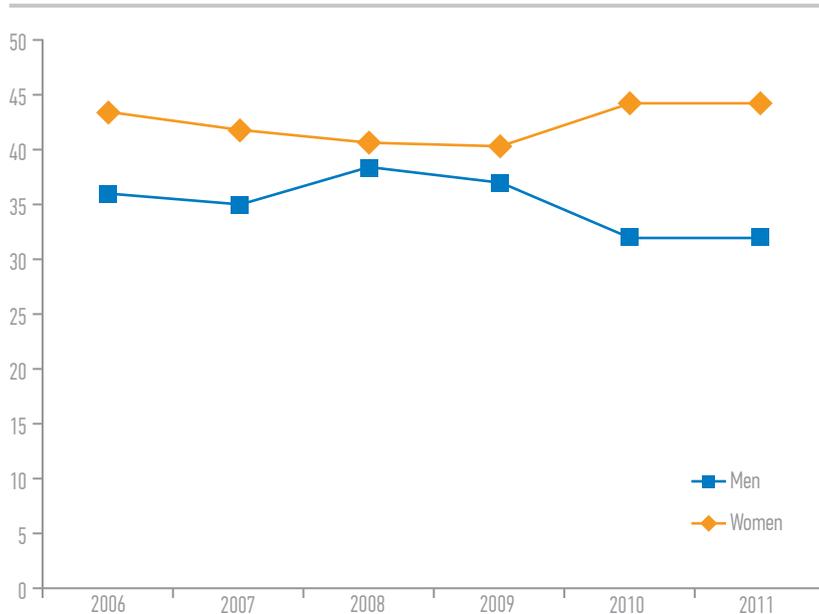


Figure 4.6

Figure 4.6
Employed population by sex and type of economic activity at the main workplace, % to total (agricultural sector)

Figure 4.7
Time allocation on weekdays

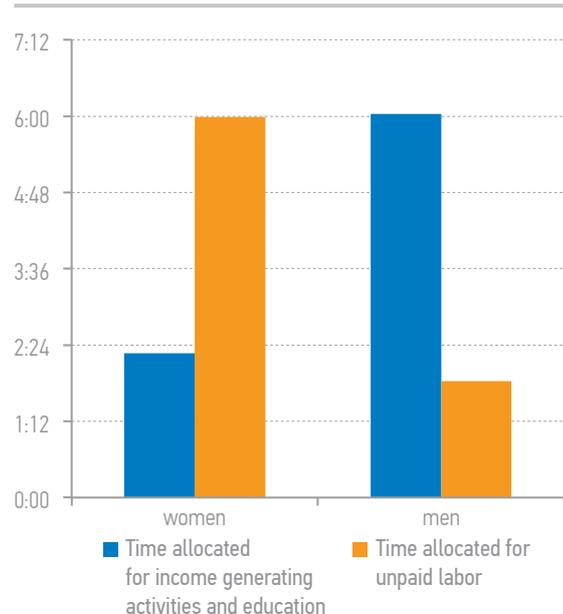


Figure 4.7

performed by women; statistics suggest that the average woman allocates six hours per day to unpaid labour while men allocate only two. At the same time, men spend more time in paid labour and education.

The sectors offering shorter working days (education, healthcare) allow working women to reconcile their professional activity and their family responsibilities. Another factor that influences the choice of traditionally 'female' sectors is the family ban or unwillingness of women themselves to be part of a predominantly male team. This factor helps to continuously reproduce gender homogenous teams. At the same time, more men than women tend to have jobs that pose occupational hazards.²⁶

However, caution is advised when interpreting time-use estimates. An important factor to be considered is the amount of involvement women have in the informal economy. According to International Labour Organization estimates, 12.8% of women are engaged in the informal sector which has seen growth over the past few years.²⁷ The involvement of women in the informal sector blurs the distinction between paid and unpaid labour. For example, in rural areas, crops grown by women on a family-owned plot of land are often used for internal family consumption but can also be sold at markets or to neighbours. In some cases, women carry a 'triple workload' combining a formal job in the service sector, involvement in the informal agricultural sector and family responsibilities, and it is next to impossible to estimate time-use on paid and unpaid labour with any degree of analytical accuracy.

Men and women who are engaged in the informal economy are more socially vulnerable. Moreover, women working in the informal economy face a higher risk of physical and sexual gender-based violence,

term (but unaccounted) male labour migration.²² Male migration from rural areas is also an indication of the importance of remittances in the structure of women's income – as men seek jobs outside the agricultural sector and work far from home in order to support the families they have left behind.

Thus, the increase in the employment rate of women is partly due to their growing involvement in agriculture, which offers low-income and physically hard jobs.

4.5. Time allocation and 'triple workload'

In Azerbaijan gender segregation by sector is influenced by a number of cultural, social and economic factors. A poor infrastructure, which does not support working family members, is one reason why people have to allocate time between paid work outside the home and housework. Many families have no choice other than to free-up one parent's time for domestic work. Azerbaijan does not have an expanded network of pre-school facilities (1677)²³, those that exist are mainly state-owned and cover only 20% of the children of pre-school age.²⁴ The conditions in many state-owned facilities are sub-standard, while this kind of service in the private sector is expensive and limited (as of early 2013 there were only 40 private pre-school facilities in Azerbaijan).²⁵ The country has limited facilities for after-schools activities for school-age children (crafts, sports, etc.), and an inadequate infrastructure for easing daily chores (inexpensive ready-to-eat food, laundry services, etc.).

As a result, a significant amount of time and effort has to be devoted to domestic labour and childcare. In an overwhelming majority of cases, these functions are

²² Cheianu-Andrei, Diana, International Migration Organization, Migrant spouses and family members staying behind in Azerbaijan, (2013)

²³ It should be noted that in some regions, the population displaced as a result of the occupation of the part of Azerbaijan's territory were accommodated in the pre-schools facilities

²⁴ State Statistics Committee, Demography and Social Statistics. Education, science and culture. Table 1.2.4: Pre-school facilities. <http://www.stat.gov.az/source/gender/>

²⁵ State Statistics Committee, Women and Men in Azerbaijan. Table 4.1.: Employment and Unemployment in 2012 <http://www.stat.gov.az/source/gender/>

²⁶ This imbalance is furthered by legal bans and limitations to use women labour in hazardous and harmful working conditions. (Article 241, Labour Code of the Republic of Azerbaijan)

²⁷ International Labour Organization, Decent Work Country Profile. Azerbaijan, (2012), p.9

and exposure to HIV/AIDS and sexually transmitted diseases.²⁸

4.6. Gender pay gap

Due to the gender stereotypes on the division of family labour, the majority of women have to look for a job that allows them to spend part of their time in unpaid labour. In Azerbaijan men hold the higher level and higher paid jobs across all sectors of the economy. Although formally men and women receive equal pay for equal jobs, the existing gender gap in the average monthly salary is typical for nearly all sectors.²⁹ In the rapidly growing sectors of the economy such as construction, management, commerce, and the extractive industries, the average pay for women is 60% less than it is for men. This gap even exists in female-dominated sectors. For example, in education, where women represent over 70% of the workforce, 82.7% of secondary school directors (general secondary education), 90.9% of higher educational institution rector and 83.9% of faculty deans are men. Women's earnings in education, health and social sphere make 68.8% and 41.1% of men's earnings respectively.³⁰

4.7. Gender aspects of the ageing population

From 2016 onwards the percentage of older people in the total population will rapidly increase. It is important to understand the gender impact of this demographic trend in order to address the socio-economic inequality that may further deepen as the pressure on the able-bodied population and the pension system grows.

During 2007-2011 the majority of pensioners in Azerbaijan were women (60-62%), a natural situation given that women live longer and retire at an earlier age than men. As women are concentrated in the lower-paid sectors and in lower hierarchical level jobs, they tend to receive minimal pension benefits. The same applies to women who spend their time in unpaid domestic labour. Although pension legislation envisages social benefits for individuals without work experience and for families who have lost the breadwinner, its size is quite small.

Hence, in the near future female pensioners in Azerbaijan will continue to outnumber male pensioners and will face greater pension poverty. Against the background of rapid population ageing, low pensions for women are likely to reduce pressure on the pension system. Consequently, the burden on the working population of children will grow and given the gender pay gap, men will be expected to provide the additional intra-family financial support.

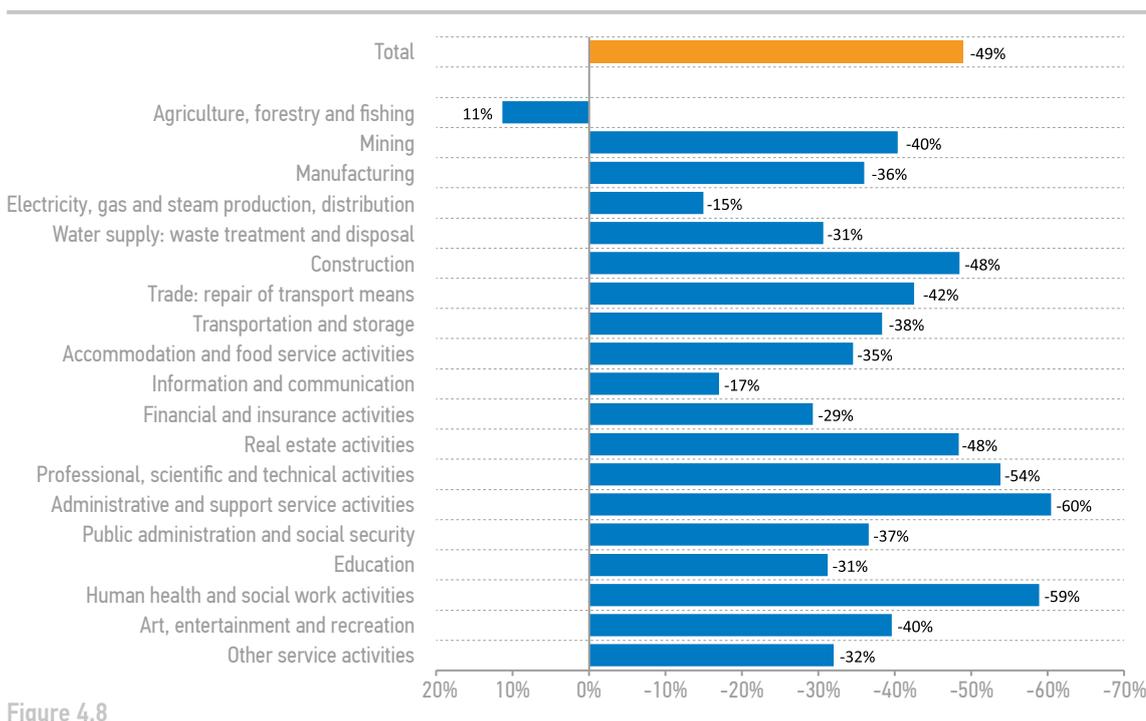


Figure 4.8
Gender pay gap by sectors of economy (as % of average men's pay)

²⁸ International Labour Organization, Sylvia Chant, Carolyn Pedwel Women, gender and the informal economy: An assessment of ILO research and suggested ways forward / (Geneva, 2008), p.1

²⁹ Agriculture is the only economic sector where the average nominal wage of women is higher than that of men..

³⁰ State Statistics Committee, Women and Men in Azerbaijan, Baku 2012, p. 90

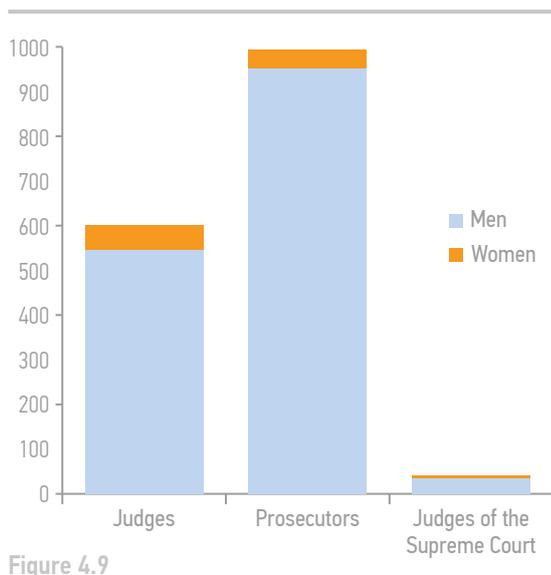


Figure 4.9

Figure 4.9
Women and men in the judiciary

4.8. Gender equality in decision making

The equal participation of women in decision-making in all three branches of power and local self-governance is an important dimension of gender equality. In Azerbaijan women's participation in decision-making does not correspond to the level of their educational attainment and economic activity.

In 2015, 16.8% of the members of the Milli Mejlis, the supreme national legislative body, were women. However, a comparison to previous parliamentary assemblies indicates that the number of women parliamentarians has been growing steadily. Even so, of the 15 parliamentary committees, only two – on human rights and on family, women and children affairs – are chaired by women. Representation in parliament is only one of the indicators used to assess gender equality in decision-making.

Men also dominate the higher echelons of executive power. Women tend to take high-level leadership positions only in those sectors which are traditionally associated with 'female activity', due to gender stereotypes. Only two positions, out of all the ministerial and heads of state committees are occupied by women - the Chair of the State Committee for Family, Women and Children Affairs and the Chair of the State Commission on the Admissions of Students. Men also hold key powerful positions in the Presidential Administration (chief of administration, the deputy chiefs, heads of departments) while women are in charge of the President's secretariat and the departments of humanitarian policy and political analysis and information provision. There is only one woman at the head of Azerbaijan's diplomatic mission abroad.

By January 2012, the proportion of women in the civil service had reached 30%. Although a higher figure than in previous years, the gender ratio in this domain is far from balanced. The civil service, like other sectors, is marked by vertical gender segregation. Men are over-represented at the high and middle level of the occupational hierarchy, whereas nearly every third woman holds a support position. According to the survey carried out among the personnel of the Civil Service Commission in 2010, 74% of female respondents believe that men have more opportunities for career promotion than women, whereas the majority of their male colleagues think that men and women have equal opportunities.³¹

Women are also marginally represented in the judiciary – only 63 of 600 judges, 47 of 1,069 prosecutors and 6 of 41 judges of the Supreme Court are women.³²

During the 2014 municipal elections, the number of women elected in local self-governance elections increased more than 6 times (from 4% to 26%). Research on municipal activities in Azerbaijan points to a duplication of functions between municipalities and local executive authorities, and the latter are more powerful and have greater financial and administrative resources³³. With the exception of Absheron region, the heads of all regional executive authorities are men.

The present pattern of neo-patriarchal relations is not a remnant of traditional models or an accidental anachronism. This new definition of gender roles combines elements of a patriarchal system with certain divisions of labour within the nuclear family that correspond to the current economic and social conditions. This modernised form of patriarchy is part of the existing social order. It integrates a reinterpretation of certain cultural traditions and behavioural patterns with the opportunities and limitations existing in the country's economic, social and demographic context.

In Azerbaijan gender relations within and outside the family operate in a society characterised by a completed demographic transition, a slow pace of urbanisation, still insignificant demographic burden on the able-bodied population, and high level of education that enables people to actively participate in the economic, political and public life. Our analysis attempts to show how gender inequality in the current demographic and socio-economic context results in opportunities offered by the period of the demographic dividend being missed.

³¹ United Nations Development Programme, A. Vazirova, The Assessment Report: Gender Equality in the Civil Service, 2010

³² European Commission for the Efficiency of Justice (CEPEJ), Scheme for Evaluating Judicial Systems, 2013, <http://www.coe.int/t/dghl/cooperation/cepej/evaluation/2014/Azerbaijan%2014.pdf>

³³ Council of Europe, Local and Regional Democracy in Azerbaijan, Report of the Monitoring Committee, The Congress of Local and Regional Authorities, (2012)

Conclusions

- Development benefits offered by the demographic window in Azerbaijan are constrained by a number of factors including gender inequality. Gender inequality in all its manifestations is one of the major barriers slowing the country's progress towards higher standards of human development.
- From the mid-2010s, the ageing population will become one of the dominant demographic trends, and will steadily put pressure on the able-bodied population. Against this background, addressing gender disparities will be essential to enable women, who constitute half of the country's population, to fully develop their capabilities.
- In 20 years the country will face the challenge of a skewed sex ratio among new-borns. The negative implications of deliberate sex selection require an in-depth study. Should the current sex ratio at birth be maintained, the expected consequences will include a wider gender gap in education, a reduction in the proportion of women in the labour market, less gender diversity (masculinisation) in all spheres of public life that will impede the promotion of women, and increased levels of crime, including human trafficking. The shortage of women may also result in an increase in the pressure placed on women to perform the traditional reproductive duties that will conflict with their prospects for individual development and their productive role in society.
- There are substantial differences in gender inequality between the regions of the country. Aggregate figures often mask considerable regional disparities in women's status, such as between Sheki and Lenkoran regions, and between Zagatala and Daglyshirvan regions. The magnitude of the gender gap tends to be greater in the southern regions of the country than in the northern.
- The sizeable numbers of young workers expected to enter the labour market from 2015 onwards will further emphasise the urgent need to tackle gender-based disparities in education. The shrinking gender gap in education is a positive trend being observed in the country, especially at the level of tertiary education. However, policy-makers should focus their attention on regions where the extent of gender inequality is below the national average.
- The increasing rate of school drop-out by girls is a problem that requires a solid and in-depth analysis to investigate the local context of certain regions and to identify specific risk zones. The same applies to the rate of school drop-out by boys, observed in the northern parts of the country.
- Gender segregation in education limits the occupational choices available for girls due to the wide-spread traditional division of labour in the family and limitations imposed by gender stereotypes and perceptions. This, in turn, leads to gender segregation in the various spheres of economic activity. If, in the coming decades, the current gender segregation trends in education persist, the country is likely to face a situation of an over-supply of women specialists in a very narrow range of occupations.
- The number of women in the labour market has increased but this has not translated into better career opportunities and higher incomes for women, nor resulted in de-segregation. Women continue to join the ranks of the low-paid workforce with little prospect for professional growth.
- Horizontal and vertical de-segregation and the promotion of women into the better-paid sectors of the economy will not only help to reduce gender inequality in opportunities, it will also relieve the pressure placed on men, who provide the main source of income in many families, and raise the living standards of female-headed households.
- The human capital of women can be only fully realised if the country builds an effective family support infrastructure, which gives both men and women a choice of working outside the home, if so desired.
- Another important factor is the introduction of flexible working hours and other innovative measures, which help employees to reconcile work and family duties, as opposed to the traditional eight-hour working day and fixed work place. This tradition, combined with the neo-patriarchal division of responsibilities in a family, imposes rigid gender roles for all family members thereby continuing the cycle of gender inequality.
- Gender disparities are more pronounced in decision-making and governance than in education and economic activity but follow the same pattern of vertical and horizontal gender segregation that secludes women in the traditional 'female' sectors and in the lower ranks of the occupational hierarchy.



5

ANNEX

5.1 Population development policies in Azerbaijan

Following the adoption of the Cairo Programme of Action in 1994, Azerbaijan began implementing a number of comprehensive population development measures. The Cairo Conference provided a new impetus to policy-makers to seek solutions to the population and development challenges in the country. By adopting the Programme of Action the national government recognized that investing into human capital, broadening people's choices and creating opportunities to realize their capabilities were fundamental for sustained economic growth and sustainable development. Since the Cairo Conference Azerbaijan has continued to pursue a comprehensive approach to mainstreaming population issues into national development policies and strategies.

The national policy on demography and population development is outlined in the 1999 "Concept of Demographic Development of the Republic of Azerbaijan", in line with the Presidential Decree, in order to improve the demographic situation and shape modern policy. The Concept is based on national priorities and reflects the principles of the Cairo Programme of Action and key documents adopted at both the 1995 World Summit for Social Development in Copenhagen and World Conference on Women in Beijing.

The principal objective of the national policy for demographic development is to ensure quantitative and qualitative population growth by curbing negative demographic trends, consistent with the long-term national development strategy.¹

The top national priorities identified by the Concept are the following:

- Increasing life expectancy by consistently decreasing the mortality rate, in particular maternal and child mortality as well as the death rate among the working age population;
- providing targeted social assistance to low-income families with children, people with disabilities, refugees and the internally displaced population;
- promoting a healthy lifestyle for all socio-demographic groups and across all population strata;
- strengthening social security and protection of mothers and children;
- improving the living standards and health of the population (improving the quality of food products, water, prevention of air pollution, improvement of environmental health, prevention and reduced incidence of infectious diseases, sexually transmitted infections and other diseases);
- implementing measures to improve the reproductive health of the population, development of family

planning services and awareness-raising among the population;

- developing education and employment systems to enable people to live productive and fulfilling lives;
- ensuring free medical care for low-income families including families with many children, people with disabilities, refugees, IDPs and others;
- raising people's knowledge on population issues, teaching demography at schools and encouraging scientific research in the field of demography;
- managing migration processes.

In accordance with the Concept of Demographic Development, the "State Programme on Population Development and Demography of the Republic of Azerbaijan" was developed and enacted by Presidential Decree in November 2004. The Programme aims to achieve an optimal level of population reproduction, to ensure a decline in the mortality rate and a rise in life expectancy, to improve maternal and child health, to create a favourable socio-economic environment for families and to identify ways of managing migration processes. It is important to note that as a mid-term development strategy in the field of demography and population, the State Programme is being implemented in close co-ordination with other socio-economic development programmes in Azerbaijan.

The State Programme is supported by a Plan of Actions that outlines major directions for future development and identifies specific measures based on the analysis of existing demographic trends. The Plan of Actions reflects issues such as reducing child and maternal mortality rates, protecting motherhood, ensuring reproductive health, family planning, increasing marriage stability, promoting and protecting family values and ethics, supporting young families and improving their housing conditions and opportunities for recreation, improving the health of the nation, increasing life expectancy and labour activity, enabling women to combine family and professional responsibilities, caring for the elderly, efficiently managing migration processes, training specialists in the field of demography and supporting population research, environmental issues, providing targeted social assistance, etc.

As mentioned above, the State Programme on Population Development and Demography of the Republic of Azerbaijan pays special attention to reproductive health, family planning and family stability. All these issues reflect the recommendations suggested at the Cairo Conference. To ensure the protection of reproductive health, to enable people to plan for and give birth

¹ The principal objective of the national policy is formulated in the "Concept of Demographic Development of the Republic of Azerbaijan" (1999)

to healthy infants, and to reduce maternal and child morbidity and mortality, the Programme of Actions on Protection of Maternal and Child Health was adopted by the decision of the Cabinet of Ministers in 2006. A draft of a new State Programme on Population Development and Demography of the Republic of Azerbaijan until 2025 was prepared and aligned with the long-term national development strategy, to ensure quantitative and qualitative population growth. The final draft Programme is currently under review by the Cabinet of Ministers of the Republic of Azerbaijan.

The State Programme on Improving Maternal and Child Health for 2014-2020 was approved in 2014.

One of the priorities of Azerbaijan's population development policies is to ensure a healthier and longer life for Azerbaijani citizens. With an increase in life expectancy and anticipated population ageing, special attention is given to the problems of elderly people, in particular social security, improvement of the people's well-being, and the provision of social and other vital needs in old age.

The fundamental rights and freedoms of elderly people are embedded in the Constitution of the Republic of Azerbaijan. The country joined a number of international agreements including the 2002 Madrid International Plan of Action on Ageing. To follow-up on the recommendations of the Plan of Actions, with a view to improving the social status of elderly people and to strengthening the social support by the state, the State Programme on Strengthening Social Protection of Elderly People was adopted by Presidential Decree No 1413 on 17 April 2006. The Programme focusses on the following priorities in order to fulfil the rights of older people:

- reform of the pension system and establishment of a mechanism of targeted social assistance for older people;
- reduction of the poverty rate among older people;
- creation of an enabling environment and promotion of initiatives providing opportunities for the employment and self-employment of older people;
- development and accessibility of the social infrastructure for older people in rural areas of the country;
- development of social safety nets in regions of the country and the empowerment of older people to participate in the life of the society.

Actions aimed at improving social security for older people are also implemented in the framework of the State Programme on Demography and Population Development of the Republic of Azerbaijan, State Programme on Poverty Reduction and Sustainable Development for 2008-2015, adopted by the Presidential decree No 3043 dated 15 September 2008 and other national programmes. These measures are highly relevant as, like many other countries, Azerbaijan is experiencing population ageing.

The policy for youth pursues a holistic approach for implementing measures in such areas as legislation, governance, the economy, finance, science, information,

and human resource development, to enable young people to make well-informed choices and empower youth to actively contribute to the development of the country.

The main objectives, principles, directions and legal basis of the policy are embedded in the Law of the Republic of Azerbaijan on Youth Policy, adopted in 2002.

In addition, over the past few years two State programmes were approved to address youth issues – the State Programme on Azerbaijani Youth (2005-2009) and the State Programme on Azerbaijan Youth (2011 – 2015) that assigns specific tasks and functions to the respective executive authorities. The State Programme aims to further develop youth policies in Azerbaijan, to empower youth participation in governance, to facilitate the employment of young specialists and provide solutions to other socio-economic problems.

In 2007 the President approved the State Programme on Vocational Education in the Republic of Azerbaijan (2007-2012). The main goal of the Programme is to ensure the match between the professional workforce labour market supply and the demand of a developing economy, and to build a vocational education system that provides the population with modern professional skills in a manner that is efficient from economic and social perspectives.

The President also enacted the State Programme on the Study of Azerbaijani Youth Abroad that aims to create an integrated system providing talented Azerbaijani youth with education opportunities in foreign universities and to ensure that the key economic sectors of the national economy will have access to employees with the necessary skill set. To date 1,825 people have been enrolled in the State Programme.

Finally, population development issues have been reflected in several other state programmes approved by the President over a number of years, such as: the State Programme on Socio-Economic Development of Regions, the State Programme on Poverty Reduction and Sustainable Development, National Employment Strategy, the State Plan on Implementation of the Employment Strategy, State Migration Programme, State Programme on Developing Creativity among Talented Children (youth), State Programme on Improving Teaching and Educational Process and Child Rights Protection, State Programme on Prevention of Disabilities and Rehabilitation of Persons with Disabilities, Social Protection of Persons with Disabilities and Children with Physical Disabilities, State Programme on Refugees and Internally Displaced Persons, State Programme on Improving Housing Conditions and Employment for Refugees and Internally Displaced Persons.

5.2 Legislation, policies and programmes in the area of migration and the territorial distribution of the population

From 1990 to 2007 external net migration in Azerbaijan was negative but the situation reversed in 2008 due to socio-economic development and political stability. Today out-migration is no longer extensive; citizens who had left Azerbaijan are returning, and the number of foreigners arriving in the country is on the rise. The large-scale international projects on oil production and transportation, political and macro-economic stability, influx of foreign investments, improving business climate and high economic growth rate are the key factors attracting foreign migrants to Azerbaijan.

However, the number of foreign labour migrants in Azerbaijan is low. Presently around 10,000 foreigners are legally employed in Azerbaijan, 48% are Turkish and 16% are British. Foreign citizens are mainly employed in the construction sector (48%) and extractive industry (26%), as well as in transport, commerce, services, real estate business and leasing.

Precise data on the number of Azerbaijani citizens engaged in paid labour abroad does not exist. An analysis of labour migration revealed that the main destinations for these citizens are the Russian Federation (predominantly), the United Arab Emirates, Turkey, Ukraine, Germany and other western European countries. Most are primarily involved in small businesses and commerce. According to the 2010 Russian country-wide population census, the number of ethnic Azerbaijanis holding Russian citizenship was over 603,000, nearly twice as much as recorded by the 1989 census (335,900). At the same time, of the 687,000 foreigners registered in the 2010 census in Russia, 10% (67,900 people) were citizens of Azerbaijan.²

5.2.1 External migration policy

Migration issues in Azerbaijan are governed by the Constitution of the Republic of Azerbaijan; the Law of the Republic of Azerbaijan On Labour Migration (1999) that provides legal, economic and social basis for labour migration in the country and regulates relations in this field; the Law On Immigration (1998) related to the immigration of foreigners and stateless people; the Law on Leaving and Entering the Country and Passports (1994) that establishes the procedure for applying for passports and guarantees the freedom of entering and leaving the country; and the Law on Legal

Status of Foreigners and Stateless People (1996) and by other decrees and orders of the President and the Government, international conventions, bi-lateral and multi-lateral agreements ratified by Azerbaijan.

On 8 July, 2013, the Migration Code of the Republic of Azerbaijan was approved by Presidential Decree, to establish a consolidated legal basis governing migration issues.

The national migration policy pursues the following major tasks:

- using the migration process to benefit national development;
- giving proper consideration to the national, public and personal interests of citizens in the implementation of migration-related programmes and activities;
- fighting against illegal migration;
- creating favourable conditions for the adaptation of migrants to the existing socio-economic context;
- protecting migrants' rights.

The main instrument for the implementation of the national migration policy is the State Migration Programme of the Republic of Azerbaijan (2006-2008) adopted by the decree of the President on 25 July 2006. The Programme aims to improve national migration policies, to ensure legislation complies with international norms and modern requirements, to ensure national security, to ensure stable socio-economic and demographic development, to make rational use of labour resources, to ensure the even distribution of the population across the territory of the country, to make best use of the intellectual and labour potential of migrants, to prevent the negative implications of unregulated migration processes, to suppress illegal migration including human trafficking.

The State Migration Programme has implemented the following measures:

- defined the rules for granting immigrant status to foreigners and stateless people;
- improved the rules for granting individual work permits to foreigners wishing to work in Azerbaijan;
- established a unified migration information centre;
- approved the rules for voluntary placement and detention of foreigners and stateless people subject to deportation, in the Detention Centre for Illegal migrants of the State Migration Services;

² See All-Russian population census, 2010. Volume 4. Ethnic composition and language proficiency, citizenship, Table 3. "Population by ethnicity and proficiency in the Russian language" and Table 17. "Population by citizenship and age groups" available at: http://www.gks.ru/free_doc/new_site/perepis2010/croc/perepis_itogi1612.htm

- approved the rules of defining quotas for labour migrants;
- prepared draft rules on adaptation of immigrants;
- drafted the Re-admission Strategy of the Republic of Azerbaijan.

On 4 March, 2009, Presidential Decree No 69 on the application of the 'single window' principle was another important step in the development of the migration management system. Its implementation ensured the use of more flexible and effective mechanisms, increased responsiveness and the resolution of a number of outstanding problems in the field.

On 5 June 2009 the Cabinet of Ministers approved Decree No 86 regarding quotas for labour migrants. The Decree set a maximum limit on the number of foreign workers employable through work permits per year, with each quota set according to sectors of economic activity.

5.2.2 Urbanization, internal migration and territorial development policies

The intensity and direction of the internal migration flows in Azerbaijan are primarily driven by regional disparities in urbanization and socio-economic development. Owing to the high concentration of industries, Baku is the main destination for internal migrants in Azerbaijan. It is difficult to obtain a precise picture of internal migration flows as migration statistics are the least elaborated of all primary demographic statistics. Statistical data on migration movement is incomplete and only contains information on registered re-settlement to a permanent place of residence. A methodology will therefore need to be developed to estimate internal migration. Nevertheless, data collected through censuses and routine population statistics does provide sufficient information to support the conclusion that the population of Azerbaijan moves from rural areas to cities, from less developed to more socially and economically advanced regions, and that the majority of migrants end up in the capital and its suburbs.

A significant number of rural migrants have settled in Baku, Sumgayit, Ganja and other big cities. The key

driver of migration to the large industrial centres is the desire to improve well-being, dissatisfaction with existing employment opportunities, and improved home comforts and cultural life.

The pressure on the capital and other big cities can be reduced through the more efficient use of natural and labour resources in the regions of Azerbaijan, accelerated entrepreneurial development, rehabilitation of the existing infrastructure, renovation of roads and communication, and improved gas and electricity supplies. To address these challenges, the Government of Azerbaijan prepared the State Programme of Socio-Economic Development of Regions of the Republic of Azerbaijan in 2009-2013 that was approved by the Presidential Decree of 14 April 2009.

5.2.3 Environmental policy and improvement of urban environment

High population concentrations in and around the capital and other big cities have negative consequences on the environment. In big cities the high level of air pollution is responsible for the overall unhealthy environmental situation. The major contributors of emissions in urban areas are industrial enterprises and transport. In particular, the environmental degradation along the Caspian Sea, in Baku and Sumgayit, is largely caused by the concentration of oil industry enterprises.

The major sources of air pollution in Azerbaijan are vehicles, oil and petrochemical industries and enterprises producing construction materials; 60-70% of the total volume of emissions is attributed to road transport.

Over the past few years the number of vehicles in Azerbaijan has been steadily increasing. The growing vehicle fleet negatively affects the environment as the average age of the vehicles is about 10 years and many obsolete and high-pollutant cars and lorries are still in use. The bulk of the vehicle fleet is based in Baku, generating a significant negative effect on the urban environment. In 2013, 737,000 vehicles were registered in Baku with its two million population. The total estimated annual volume of harmful emissions from the vehicle fleet of Azerbaijan is about 965,9000

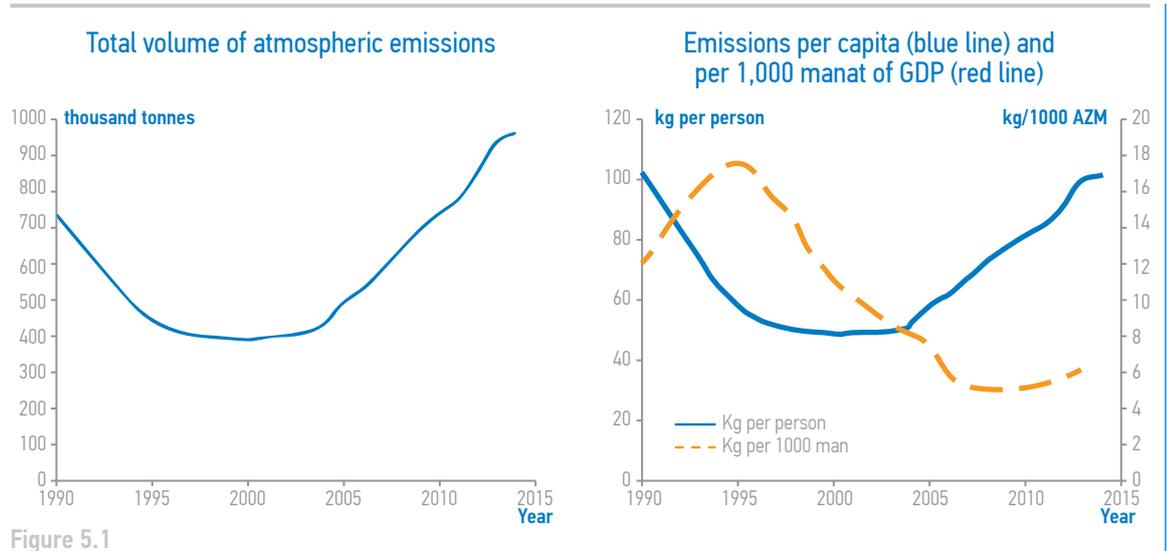


Figure 5.1

Figure 5.1

Atmospheric pollution from mobile sources in the Republic of Azerbaijan in 1990-2014. (data for 1991-1994 and 1996-1999 are interpolated)

tons, of which 61.5% is emitted in and around Baku. The concentration of vehicles in Baku causes serious problems both for road safety (traffic jams) and urban air quality.

Over the past few years Azerbaijan has been implementing wide-scale national programmes to improve the environmental situation. An important step in this direction is the Comprehensive Action Plan on Improvement of the Environmental Situation for the period 2006–2010. The Plan has played a critical role in abating pollution around Baku and the Absheron Peninsular; areas constantly at risk from oil spill environmental disasters, heavy air pollution resulting from the open burning of domestic waste, and a lack of infrastructure for waste water treatment and drainage.

The new State Programme on the Socio-Economic Development of Baku and Settlements around it, approved in 2011, aims to improve the environmental situation, inter alia, by cleaning up the lakes in the Baku suburbs which are polluted by oil and waste water.

In this vein, an incinerator was built in Baku to treat municipal waste, with an annual capacity to burn 500,000 tons of waste and generate 231.5 million kWt/hour. Similar projects also exist which improve the supply of safe drinking water to Baku and other areas. In the framework of these projects, during 2007-2008 modular water purification stations were installed and commissioned in several regions of the Nakhchivan Autonomous Republics, and over 100 settlements in the Evlakh, Zardab, Agjabedi, Kuradamir, Imishly, Sabirabad, Saatly, Salyan, Neftchala and Bilasuvar regions. In 2010, a project to supply drinking water to the populations of Baku and the Absheron Peninsular was completed. It is anticipated that once the reconstruction of the water distributing system of Baku and its suburbs has been completed, 75% of Baku’s population will be supplied with potable water.

5.3 Overview of policies on marriage, family planning, maternal and child health

In Azerbaijan, the family is under state guardianship. Motherhood, fatherhood and childhood are protected by Law. The Family Code was enacted in 1999, and amended in 2002 and 2011. In Azerbaijan marriage and family relationships are regulated by the state, and only civil marriages registered by the respective executive authority are recognized; religious marriage has no legal force.

The law regulating family relationships is based on the principles of voluntary consent by men and women, spouse equality, the settlement of intra-family issues via mutual consent, importance of raising a child in a family, the provision of care for the well-being and development of children, and protecting the rights and interests of minors and family members with disabilities. According to Article 2.3 of the Family Code, marriage is the officially registered voluntary union of a man and a woman wishing to create a family. Citizens execute family rights and the protection of these rights themselves, except for cases provided by the Family Code. In executing their rights and obligations, a family member shall not infringe upon the rights, freedoms and legitimate interests of other family members and citizens. A couple assumes rights and obligations from the date of the state registration of their marriage by the respective executive authority. Should the executive authority refuse to register the marriage, the couple can file a complaint.

The current, legal marriage age in Azerbaijan is 18 years for both men and women (Family Code, Clause 10). Marriages for those under 18 are only allowed if the couple receives approval from the executive authority in the locality where they reside – and the age can only be reduced by a maximum of one year. The following marriages are prohibited:

- between relatives with a high degree of kinship (parents and children, grandparents and grandchildren, native and step- brothers and sisters having a common father or mother;
- between adoptive parents and adopted children;
- between individuals if one or both of them are already married;
- by individuals if the court declares one or both are physically or mentally incapacitated.

From 1 June 2015 couples wishing to marry must undertake a medical exam (per Family Code amendment, 17 October 2014). Counselling on health issues, genetics and family planning is provided, with the couple's consent, by the state-owned and municipal facilities in the locality where the couple resides.

Any restriction on the rights of individuals regarding marriage or family relations based on social, racial, ethnic, religious or language affiliation is prohibited. The family rights of citizens can only be legally restricted when the protection of morals, health, rights and the legitimate interests of other family members and citizens are a factor.

According to Article 14 of the Family Code, a marriage is dissolved by the death of a husband or a wife or by his or her declared death in absentia. Equally a marriage can be dissolved at the request of a husband or a wife or both spouses, and at the request of the husband's or wife's guardian (if he or she are declared incapacitated by a court ruling). The Family Code (Article 17) also states that a marriage can be dissolved by a respective executive authority upon the consent of both spouses when no common under-age children exist. The respective executive authority can decide to dissolve the marriage at the request of a husband or a wife, regardless of whether or not they have common under-age children, in the following cases:

- a husband or a wife is declared missing by the ruling court;
- a husband or a wife is declared incapacitated by the ruling court;
- a husband (wife) is sentenced to at least three-years imprisonment for committing a crime.

Divorces are registered by the respective executive authority in line with legal procedures.

If the married couple has common under-age children, or one of the spouses does not give his/her consent to the divorce, the marriage is dissolved by a court ruling, with the exception of those cases provided for in Article 17.2 of the Family Code.

In Azerbaijani society, family has always been the key element influencing the development of individuals' personalities. However, the integration of the country into the global economy and culture, along with promotion of common values, has triggered changes in people's mind-sets and behavioural patterns. Increased migration and the integration of the country into the international community has affected the national culture and the way people think and behave. Young people have become more mobile and relaxed, and are better educated and informed. Reproductive preferences and attitudes towards marriage and family issues have also changed, although some essential values such as respect towards the parents and close family relations remain.

The Law on Reproductive Health is currently awaiting approval by Parliament. Once enacted, this will strengthen the efficiency of health protection measures and the population's well-being and will also improve family planning policies. Family planning services are currently provided by gynaecologists. Gynaecologists are not well trained in family planning, nor are they interested in providing these services. Although de-jure the state-owned healthcare facilities provide services free-of-charge, de-facto kickbacks are widely spread. Gynaecologists generally prefer to perform abortions rather than discuss family planning. Those gynaecologists who do provide family planning services often prescribe unjustified examinations and follow-up visits, thereby deterring their clients. The UNFPA grant programme which provided contraceptives was stopped in 2004. The State does not procure contraceptives, and the only suppliers are private companies and the limited range of contraceptives available from pharmacies.

Abortions are legal and abortion services are provided by State-owned healthcare facilities and private clinics. Data on unsafe abortions is not available, but their number is likely to be insignificant as nearly all abortions are performed by healthcare professionals in medical clinics. Prescribing medications which cause abortions is not an official practice, however, there is a practice to take pills that are not meant for the purpose of abortion. The predominant method

used to perform abortions is curettage, while mini-abortions (using the vacuum aspiration method) are rarely performed. The number of women wishing to abort their first pregnancy is on the rise.

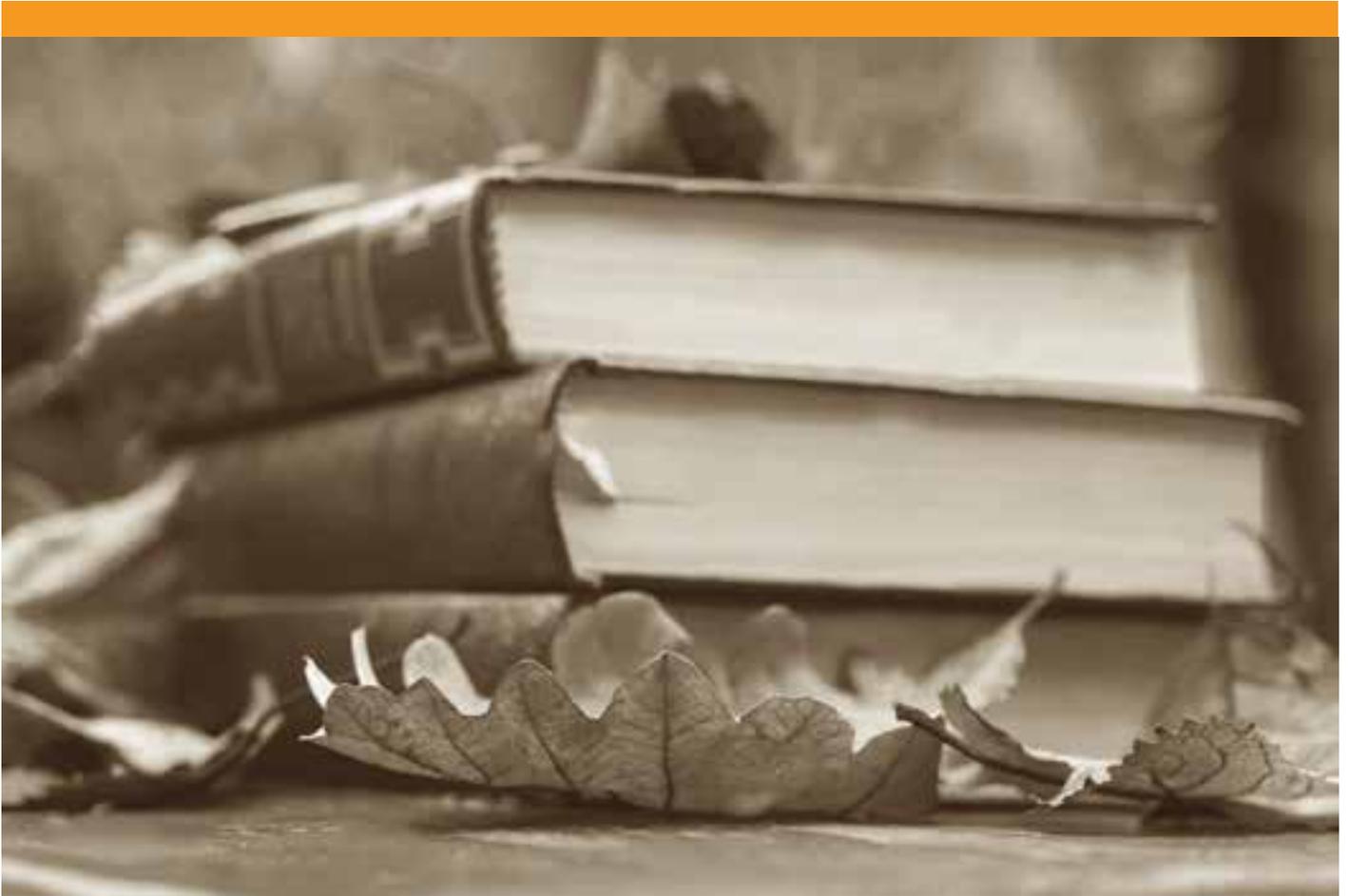
Although ultrasonic examinations to diagnose foetal sex are prohibited, studies³ have shown that this ban is generally disregarded, and sex-selective abortions are common, which results in a skewed sex ratio among new-borns throughout the country. Since 1985 the sex ratio imbalance in favour of men has been growing and over the past few years the female-to-male ratio at birth has reached 100:116, according to the State Statistics Committee. This situation calls for urgent action by the government, given that this phenomenon will negatively affect the future dynamics of the population with all the undesirable consequences arising therefrom.

The only state-owned facility offering in-vitro fertilization services is the Republican Centre of Family Planning in Baku that became a sub-division of the Scientific-Research Institute of Obstetrics and Gynaecology by the Decree of the Minister of Health of Azerbaijan in 2014. Some private clinics also provide in-vitro fertilization services, however these services are costly and few can afford them.

Prenatal counselling is widely available in state-owned healthcare facilities, however, the rural population have limited access to the full-fledged antenatal services as rural obstetrics clinics and medical outpatient clinics are not equipped for this purpose and their medical staff lack the requisite knowledge and skills.

In cities and regional centres, antenatal services are provided by the primary state-owned healthcare facilities and also in some private clinics. According to Decree No 21 of the Ministry of Health (6 March 2013), private clinics are permitted to provide antenatal services to pregnant women only after they have presented a certificate of registration from the state-owned healthcare facility (antenatal centre or health centre) in their residential area. They are then required to report to this state-owned health facility on a monthly basis throughout the gestation period.

³ "Mechanisms Behind the Skewed Sex Ratio at Birth in Azerbaijan: Qualitative and Quantitative Analysis", UNFPA, 2014



6

BIBLIOGRAPHY

- Anderson, Barbara A. and Brian D. Silver (1986) "Infant Mortality in the Soviet Union: Regional Differences and Measurement Issues," *Population and Development Review*, Vol. 12, No. 4: 705-737
- Arbuthnot John (1710), "An argument for Divine Providence, taken from the constant regularity observed in the births of both sexes" (1710) *Philosophical Transactions of the Royal Society of London*, 27: 186-190.
- Avdeev Alexandre, Alain Blum, Serge Zakharov and Evgeny Andreev (1998), "The Reactions of a Heterogeneous Population to Perturbation. An Interpretative Model of Mortality Trends in Russia" in *Population: An English Selection*, Vol. 10, No. 2 (1998), p. 267-302
- Avdeyev Alexandre and Irina Troitskaya (1991) "Contraception and abortion in the USSR: Experience of 1980s." *European Population Conference, Session No 11 'Contraception, abortion and fertility' Paris, 21-25 October 1991.*
- Barberi B. (1958) *Elementi di statistica economica*, Torino
- Bongaarts, John (1978) "A Framework for Analyzing the Proximate Determinants of Fertility" *Population and Development Review*, Vol.4, no 1, (March 1978), p.105-138
- Bongaarts, John and Sharon Kirmeyer (1980) "Estimating of the impact of contraceptive prevalence on fertility: aggregated and age-specific version of a model". *The Population Council, Center for Policy Study Working Papers*, No. 63 (December, 1980)
- Bourdieu P. (1980) «Le capital social. Notes provisoires.», *Actes de la recherche en sciences sociales*, no 31, janvier, p. 2-3
- CDC (2003) *Reproductive Health Survey. Azerbaijan, 2001. Final report.* Azerbaijan Ministry of Health, State Committee of Statistics, Center for Disease Control and Prevention (CDC), USA
- Center for Population Problems Studies, Moscow State University (2010) *International Mortality Database* <http://imdb-dmo.econ.msu.ru/>
- Chant, Sylvia and Carolyn Pedwel (2008), *Women, gender and the informal economy: An assessment of ILO research and suggested ways forward / International Labour Office (Geneva:, 2008)*
- Cheianu-Andrei, Diana, (2013) *Migrant spouses and family members staying behind in Azerbaijan*, (International Migration Organization, Baku)
- Coale, Ansley J. «Age patterns of marriage », *Population Studies*, Vol. 25, No. 2 (Jul., 1971), pp. 193-214
- Cosby et al, (2007) "Gender Attitudes in Azerbaijan: trends and challenges", in *Azerbaijan Human Development Report*, UNDP, Baku
- Cosby et al, (2007), "Gender Attitudes in Azerbaijan: trends and challenges", in *Azerbaijan Human Development Report*, 2007, UNDP, Baku
- Council of Europe (2012), "Local and Regional Democracy in Azerbaijan", *Report of the Monitoring Committee, The Congress of Local and Regional Authorities*, (2012)
- DHS Measure (2008) *Azerbaijan Demographic and Health Survey 2006.* Calverton, Maryland, USA: State Statistical Committee and Macro International Inc. May, 2008
- Ehrlich Paul R. (1968) *The Population Bomb*, New York, Ballantine Books, 223 p.
- Ehrlich, Paul R. and Anne Ehrlich (1990) *The Population Explosion*, New York: Simon and Schuster, 1990, 320 p.
- Esping-Andersen Gøsta and Anders Holm, "A Fatal Leap? Gendered Income Dominance and Partner Instability". Paper prepared for the 2014 EPC meetings, Budapest (session 37)
- European Commission for the Efficiency of Justice (CEPEJ), *Scheme for Evaluating Judicial Systems*, 2011, http://www.coe.int/t/dghl/cooperation/cepej/evaluation/2012/Azerbaijan_en.pdf
- Feichtinger, Gustav, Alexia Prskawetz, Andrea Seidl, Christa Simon and Stefan Wrzaczek, "Do Egalitarian Societies Boost Fertility?" *Austrian Academy of Sciences, Vienna Institute of Demography. Working Papers 2 / 2013*
- Frenk, Julio, José Luis Bobadilla, Claudio Stern, Tomas Frejka, Rafael Lozano (1991), "Elements for a theory of health transition" // *Health transition review*, vol.1, no.1, p.21-38
- Guillot M, Gerland P, Pelletier F, Saabneh A (2012) "Child Mortality Estimation: A Global Overview of Infant and Child Mortality Age Patterns in Light of New Empirical Data". *PLoS Med* 9(8): e1001299. doi:10.1371/journal.pmed.1001299
- Guillot, Michel, Natalia Gavrilova and Tetyana Pudrovska, 2011, "Understanding the "Russian Mortality Paradox" in Central Asia: Evidence from Kyrgyzstan" in *Demography*, vol.43, no. 3, pp. 1081-1104

- International Labor Organization (2012), Decent Work Country Profile. Azerbaijan
- Keyfitz, Nathan (1987) "Form and Substance in Family Demography" in J.Bongaarts, T.K.Burch and K.W.Wachter (eds), Family demography. Methods and their Applications. Calrenton Press, Oxford, 1987, p.3.
- Kitagawa Eveline. M., "Components of Difference between Two Rates", Journal of the American Statistical Association, vol.50, no. 272, (dec.1955), p.1168-1194
- Lesthaeghe, R. and van de Kaa, D.J. (1986): "Twee Demografische Transitie?" in R. Lesthaeghe and van de Kaa, D.J. (eds): Bevolking: Groei en Krimp, Mens en Maatschappij book supplement, p. 9-24.
- Lesthaeghe, Ron «The Unfolding Story of the Second Demographic Transition». Population Studies Center, University of Michigan, Institute for Social Research. Report 10-696 January 2010
- McGehee, Mary A., «Mortality» in J.S.Siegel and D.A.Swanson (ed) The Methods and Materials of Demography, 2d edition, 2008, p.285
- Meslé, France et Jaques Vallin (2002), «La transition sanitaire : tendances et perspectives», dans: G.Cazelli, J.Vallin, G.Wunsch (dir.) Démographie: Analyse et Synthèse. Vol. III 'Déterminants de la mortalité'. Paris, édition de l'INED, p.439-461
- Omran Abdel R. (1971), "The epidemiological transition: A theory of the epidemiology of population change" Milbank Memorial Fund Quarterly vol. 49, no. 4, Pt.1, 1971, p.509-538
- Sauvy, Alfred (1952) Interview for L'Observateur [politique, économique et littéraire], August 14, 1952
- Shkolnikov Vladimir, France Meslé, Jacques Vallin, 1995 "Health Crisis in Russia I. Recent Trends in Life Expectancy and Causes of Death from 1970 to 1993" Population: An English Selection, Vol. 8 (1995), pp. 123-154;
- State Statistical Committee of the Republic of Azerbaijan (2015) Interactive Database: Azərbaycan qadınlar və kişilər
- State Statistical Committee of the Republic of Azerbaijan (2015), Population of Azerbaijan, Statistical bulletin, Baku
- State Statistical Committee of the Republic of Azerbaijan (2014), Demographic indicators of Azerbaijan. Statistical yearbook, Baku
- State Statistical Committee of the Republic of Azerbaijan (2013), Demographic indicators of Azerbaijan. Statistical yearbook, Baku
- State Statistical Committee of the Republic of Azerbaijan (2013), Children in Azerbaijan. Statistical yearbook, Baku
- State Statistical Committee of the Republic of Azerbaijan (2013), Men and Women in Azerbaijan. Statistical yearbook, Baku
- State Statistical Committee of the Republic of Azerbaijan (2012), Demographic indicators of Azerbaijan. Statistical yearbook, Baku
- State Statistical Committee of the Republic of Azerbaijan (2011), Demographic indicators of Azerbaijan. Statistical yearbook, Baku
- State Statistical Committee of the Republic of Azerbaijan (2012), Women and Men in Azerbaijan, Baku
- Süssmilch Johann Peter (1741) Die göttliche Ordnung in den Veränderungen des menschlichen Geschlechts aus der Geburt, Tod und Fortpflanzung des selben erwiesen..., 1741, Berlin
- Tolts, Mark, 1995 "Modernization of Demographic Behaviour in the Muslim Republics of the Former USSR," in Muslim Eurasia: Conflicting Legacies, ed. Yaacov Ro'i, Cummings Center Series, London: Frank Cass, pp. 231-53
- Vazirova, A. (2010), The Assessment Report: Gender Equality in the Civil Service, UNDP§ Baku
- Velkoff, V. and J. Miller (1995), "Trends and Differentials in Infant Mortality in the Soviet Union 1970-90: How Much is Due to Misreporting?", Populations Studies, Vol. 49, No. 2, pp. 241-58
- UNDP (2011), The Assessment of needs and concerns of rural women in the pilot area. Community and Economic Participation. UNDP
- UNFPA (2011) "Report of the International Workshop on Skewed Sex Ratios at Birth", UNFPA, Ha Noi, Vietnam, 5-6 October 2011
- UNFPA/SCFWCA (2011) National Survey Report on Violence against Women in Azerbaijan, 2008. Baku
- UNFPA (2013) Adolescent Pregnancy in Eastern Europe and Central Asia - UNFPA EECARO
- UNFPA (2014) Child Marriage in Azerbaijan (Overview) - UNFPA EECARO

- UNFPA/SCFWCA (2014) Mechanisms Behind the Skewed Sex Ratio at Birth in Azerbaijan: Qualitative and Quantitative Analysis. Baku
- UNFPA (2015) Population Projections, 2014-2050: Different Sex Ratio at Birth Scenarios in Azerbaijan. Baku
- UNFPA (2015) Assessment of the implementation status of treaty body recommendations on sexual and reproductive health and rights in the Republic of Azerbaijan. Baku
- UNICEF/SCFWCA (2010) Study on Child Marriages in Azerbaijan, Baku
- UNICEF (2002) Мир, пригодный для жизни детей, Нью-Йорк
- UNICEF (2003) Innocenti Social Monitor, UNICEF Innocenti Research Centre: Florence, page 40 (<http://www.unicef-irc.org/publications/351>)
- United Nations, Department of Economic and Social Affairs, Population Division (2015). Trends in International Migrant Stock: The 2015 Revision (United Nations database, POP/DB/MIG/Stock/Rev.2015).
- United Nations, Department of Economic and Social Affairs, Population Division (2015). International Migration Flows to and from Selected Countries: The 2015 Revision. (United Nations database, POP/DB/MIG/Flow/Rev.2015).
- United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision. DVD Edition.
- United Nation (2014) «Концепция последующей деятельности в связи с Программой действий Международной конференции по народонаселению и развитию в период после 2014 года», Доклад Генерального секретаря, 69-я сессия, 8 февраля 2014 года
- United Nation (2000) “United Nations Millennium Declaration” General Assembly, Fifty-fifth session UN A/RES/55/2 (http://www.un.org/en/events/pastevents/millennium_summit.shtml)
- United Nation (1995) Programme of Action. International Conference on Population and Development. Cairo, 5–13 September 1994 A/CONF.171/13/Rev.1 (<http://www.unfpa.org/fr/node/9038>)
- United Nation (1973) The Determinants and Consequences of Population Trends, Series A. Population Studies, No. 50, UN, New York
- World Health Organization (2015), Health statistics and health information systems, raw data files of the WHO Mortality Database (http://www.who.int/healthinfo/statistics/mortality_rawdata/en/index.html)
- Авдеев А., Троицкая И. (1991) «Планирование семьи в СССР: от аборта к контрацепции», Демографическая политика и программы развития народонаселения в условиях суверенитета республик. IV-я Всесоюзная школа-семинар (г. Ашхабад, 11-15 ноября 1991), 28 с.
- Андреев Е.М., Н.Ю. Ксенофонтова “Оценка достоверности данных о младенческой смертности”, Вестник статистики, 1991, №8, с. 21-28 [Y. M. Andreyev and N. Y. Ksenofontova. (1991) “Assessment of the reliability of data on infant mortality”, Vestnik Statistiki, no.8, p.21-28].
- Атакишиев А. (1989), История Азербайджанского государственного университета, Баку Изд-во Азерб. ун-та, 829+1 с
- Государственный комитет по статистике Российской Федерации (2013), Всероссийская перепись населения 2010. Том 4. Национальный состав и владение языками, гражданство, http://www.gks.ru/free_doc/new_site/perepis2010/croc/perepis_itogi1612.htm
- Государственная Программа в области демографии и развития народонаселения в Азербайджанской Республике, утверждена Распоряжением Президента Азербайджанской Республики от 11 ноября 2004 года № 517 Опубликовано в «Собрании законодательства Азербайджанской Республики» (30 ноября 2004 года, № 11, статья 940).
- Декрет Азербайджанского революционного комитета от 30 мая 1921 года «Об охране материнства и младенчества в Азербайджане»
- Декрет Азербайджанского Центрального Исполнительного Комитета от 9 февраля 1923 года «О кебинных актах, совершенных до 28 апреля 1920 года»
- Конституция Азербайджанской Социалистической Советской Республики. (Утверждена 1-ым Всеазербайджанским съездом Советов 19 мая 1921 г.) Баку, 1921. http://files.preslib.az/projects/remz/pdf_ru/atr_kons.pdf
- Конституция (Основной закон) Азербайджанской Социалистической Советской Республики. (Утвержденная Всеазербайджанским съездом советов V созыва 26-го марта 1927 года). Баку,

1927. http://files.preslib.az/projects/remz/pdf_ru/atr_kons.pdf

Конституция (Основной закон) Азербайджанской Социалистической Советской Республики. (Утвержденная Всеазербайджанским съездом советов IX созыва 14-го марта 1937 года). Баку, 1937. http://files.preslib.az/projects/remz/pdf_ru/atr_kons.pdf

Конституция (Основной закон) Азербайджанской Социалистической Советской Республики. (Принята на внеочередной седьмой сессии Верховного Совета Азербайджанский ССР девятого созыва 21 апреля 1978 года). Баку, 1978. http://files.preslib.az/projects/remz/pdf_ru/atr_kons.pdf

Конституция Азербайджанской Республики 1995 г. С изменениями и дополнениями, принятыми референдумом 24 августа 2002 года и 18 марта 2009 года. Баку, 2009. http://files.preslib.az/projects/remz/pdf_ru/atr_kons.pdf

Красильников, М.П. (1928), «Законодательство о гражданской регистрации актов гражданского состояния», в кн.: Естественное движение населения Союза ССР 1923-1925 г. ЦСУ СССР. Сектор социальной статистики. Отдел статистики социального состава и движения населения. Том 1. Выпуск 1. Москва: Издание ЦСУ СССР, 1928. С. III- XIII (Введение)

Маргания О. Л. (ред.) СССР после распада, СПб. : «Экономическая школа» ГУ ВШЭ, 2007

Назарли, Азиза (2008), Народное образование в Азербайджанской республике (1918-1920), Баку: Nurlan, 2008

Народное хозяйство СССР в 1960 году. Статистический ежегодник, Госстатиздат, Москва: 1961

Народное хозяйство СССР за 70 лет. Юбилейный статистический сборник. «Финансы и статистика», Москва: 1987

Население СССР, 1987. Москва, «Финансы и статистика», 1988

Постановление Народного комиссариата внутренних дел (НКВД) Азербайджанской ССР от 22 мая 1920 года «Об организации записи актов гражданского состояния при революционных комитетах»

Семейный кодекс Азербайджанской Республики (Утвержден Законом Азербайджанской Республики от 28 декабря 1999 г. № 781-ПГ)

