

Challenges and opportunities of population ageing in the CIS+ countries

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Abstract. This article reviews the main characteristics of population ageing, its societal implications and possible policy responses in the twelve countries of the former Soviet Union. In spite of demographic, cultural, and economic diversity the countries under consideration share several common characteristics, such as joint political history, as well as the context and content of social policy. These common characteristics are essential for understanding the specifics of the ongoing process of multifaceted transition, including demographic transition, in these countries. As elsewhere in the world, population ageing in the ex-soviet states presents both challenges and opportunities, which should be carefully examined and taken into consideration while designing and implementing the measures of adjustment to population changes in this unique group of countries.

Keywords: ageing, Commonwealth of Independent States, demography, Eastern Europe.

Introduction

This review article is dealing with a unique group of countries - the Commonwealth of Independent States (CIS+), the former constituencies of the Soviet Union. The CIS+ group includes twelve countries: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. The 'plus' symbol is added to the acronym to reflect the fact that Georgia is actually a former member of the group as it withdrew in 2006. Three other ex-soviet republics - Estonia, Latvia and Lithuania - have become member states of the European Union since 2004, and therefore are not included in the article's deliberations. CIS+ countries are united by the two common characteristics: geography and political history. The former characteristic is rather ambiguous as the countries included in this group are spread over vast continental space from the eastern border of the European Union to the Pacific coast. The latter characteristic, political history, is a more uniform attribute of the CIS+ grouping as all twelve countries used to belong for seventy years to the same political, administrative and economic entity - the Union of Soviet Socialist Republics [USSR] - and all of the today's independent states were dependent territories of the Russian Empire, some of them for centuries. The common political history is of particular relevance to the subject of this article as it implies that uniformity of institutions as well as

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uniform social policy context and content may persist, and indeed they do. At the same time, in spite of long-term political, administrative and other forms of consistency and subordination, each CIS+ state has preserved its national identity and cultural essentials, including religious attachments. Various national particulars are among the primary causes of diversity of this group, including demographic diversity.

The typical geopolitical designation attributable to the CIS+ countries is 'economies in transition'. This designation however is not unique for the CIS+ countries and has been used for a much broader scope of European and Asian countries. International Monetary Fund, for instance, includes in the category of 'transition economies', along with the CIS+ countries, also Baltics, some Central European States, Southeast Europe EU members, Non-EU Southeast Europe, or Western Balkans, and several Asian countries, such as Mongolia and Vietnam (Roaf, Atoyamn, Joshi, & Krogulski, 2014). Most often, however, the term 'economies-in-transition' refers to the two groups of countries belonging to the region of the United Nations Economic Commission for Europe²:

- countries of Eastern Europe, Caucasus, and Central Asia (EECCA): the above mentioned twelve countries of the former Soviet Union;
- countries of South-Eastern Europe (SEE): Albania, Montenegro, Bosnia and Herzegovina, Serbia, Croatia, Turkey, and The former Yugoslav Republic of Macedonia.

This article is dealing with the EECCA group as its membership is identical to that of the CIS+ grouping. A key word 'transition' applied to the group denotes primarily an economic transition of countries from centrally planned to market economies. Accordingly, the ultimate content of the process of transition has been a reintegration of the former communist countries into the global economy, and for many ex-communist countries the process of accession to the European Union has been the most important catalyst for transitional reforms (Roaf et al., 2014). The perspective of European integration, however distant, serves as a main stimulus of societal reforms even in some non-EU countries of the former Soviet Union, such as Georgia, Moldova and Ukraine.

In addition to economic content, the term 'transition' entails profound changes in the political and social fabrics of the CIS+ societies. The gist of political transition was supposed to be a passage from communism to democracy; however, in too many places it has become a chimeric mixture of incoherent processes, such as efforts aimed at (re)discovering 'national roots', and ongoing, often futile, battles of pro-democracy forces with kleptocratic regimes controlled by oligarchy and manifested in proliferation of endemic corruption. The process of transition began after the collapse of the Soviet Union in 1991 and is still far from completion (Chawla, Betcherman, & Banerji, 2007; European Bank, 2013; Roaf et al., 2014) owing to, among other reasons, tenacious resistance to reforms by political and economic power

² The region of the United Nations Economic Commission for Europe includes 56 countries: all countries of Europe, two countries in North America (Canada and United States), five countries of Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) and one country of Western Asia (Israel) (United Economic Commission for Europe, 2016).

holders. As noted by one IMF official, “the Commonwealth of Independent States (CIS), are still far from completing transition, and have gone through repeated cycles of hope followed by crisis” (Lipton, 2014 - online document). It is against this backdrop of incomplete and unfulfilled societal transition that another type of transition, demographic transition, has been unfolding in many CIS+ countries.

Distinctiveness and diversity of population ageing in the CIS+ countries

This section is confined to highlighting the distinctive parameters of population ageing in the CIS+ countries, some of which, as has been earlier noted, have so far no parallels in world population history (Botev, 2012). One of the distinctive characteristics of the CIS+ countries is their demographic diversity. This group of countries occupies a wide range on the scales of rating of the world countries by the proportion of older persons in their populations or by the median age of their populations (Sidorenko, 2010; Botev, 2012). On those scales Ukraine appears demographically ‘oldest’ and Tajikistan demographically ‘youngest’ country in the grouping, with more than 100 world countries scattered between these two CIS+ countries. On the basis of these two demographic parameters the twelve CIS+ countries can be divided in two sub-groups: ‘younger’ and ‘older’ countries (Table), with Kazakhstan occupying an interjacent position.

Table 1: Demographic sub-groups of the CIS+ countries (2015)

Sub-groups of the CIS+ countries	Percentage of 60+ years old	Percentage of 65+ years old	Median age
‘Younger’ countries			
Azerbaijan	10	5.6	30.9
Kyrgyzstan	7.1	4.2	25.1
Tajikistan	5	3	22.5
Turkmenistan	6.9	4.2	26.4
Uzbekistan	7.4	5	26.3
Kazakhstan	10.7	6.7	29.3
‘Older’ countries			
Armenia	16.3	10.8	34.6
Belarus	20.3	14	39.6
Georgia	19.3	14	37.5
Moldova	16.6	10	35.6
Russia	20	13.4	38.7
Ukraine	22.6	15.3	40.3

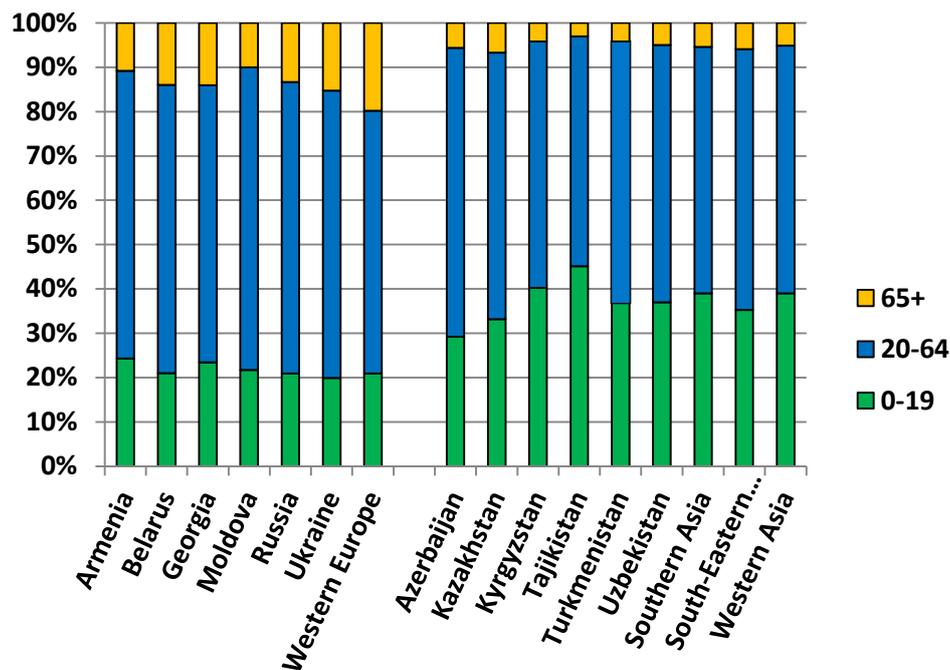
Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

Age structure of population

Demographic diversity of the CIS+ countries is revealed in the age structure of their populations. While the age structure of population in the ‘older’ sub-group resembles the

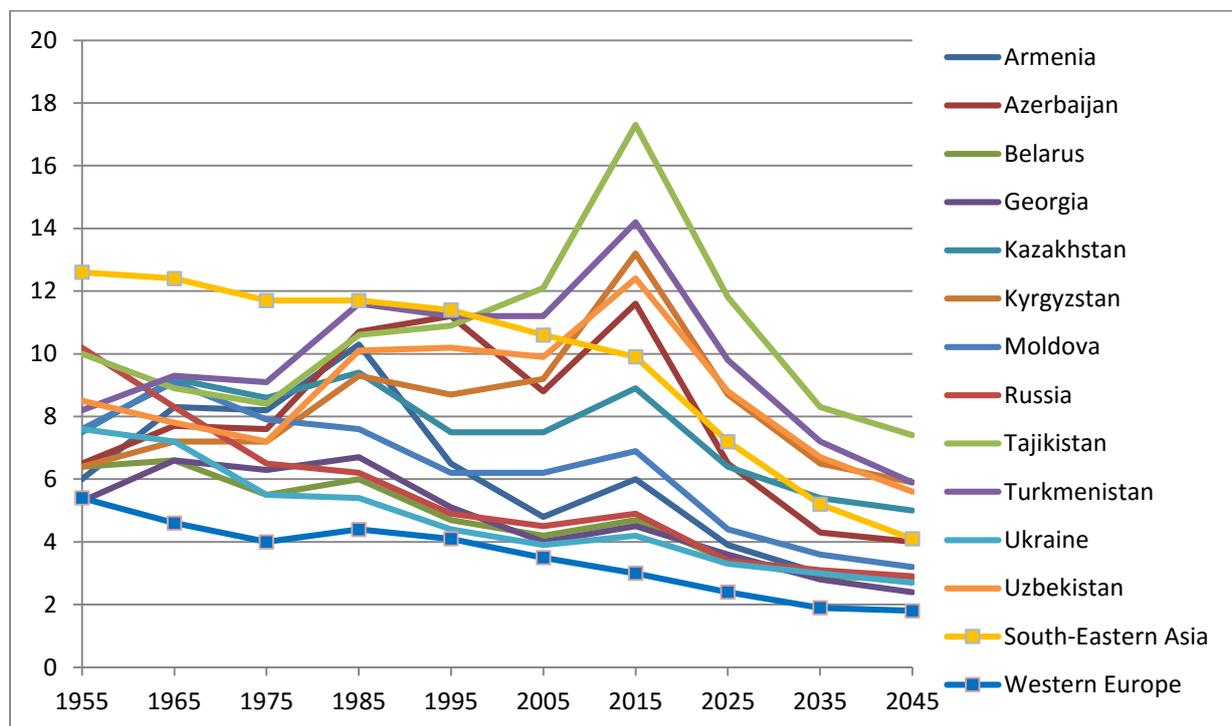
Western European patterns, the countries of the 'younger' sub-group are much closer by this characteristic to the countries of Asian sub-regions comprising predominantly developing countries (Figure 1).

Figure 1: Population Structure in the CIS+ Countries; Asia and Western Europe, 2015



Source: United Nations (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website. <http://esa.un.org/unpd/wpp/DataQuery/>

Demographic structure of society can also be mirrored in such demographic indicator as potential support ratio: the ratio between the number of presumably working age (supporting) population and presumably post-working age (supported) population. This indicator is of particular significance as besides illuminating demographic processes it points to socio-economic implications of demographic transition. The dynamics of potential support ratio in the CIS+ countries also has specific sub-group patterns: in the countries of 'younger' sub-group this indicator has been steadily growing until 2015 and is projected to rapidly decrease in the following years (Figure 2). In the 'older' sub-group of the CIS+ countries the same indicator has been declining with several periods of rebound and is projected to continue its descent after 2015. The decline of potential support ratio is a global phenomenon which is caused by shrinking the 'working age' population and increasing the 'post-working age' population (United Nations, 2015b). Yet, in countries at different stages of demographic transition the decline varies in time and speed – just as it is noticeable in the two sub-groups of the CIS+ countries.

Figure 2: Potential support ratio by age: Ratio of population 20-64 years old per population 65+ plus

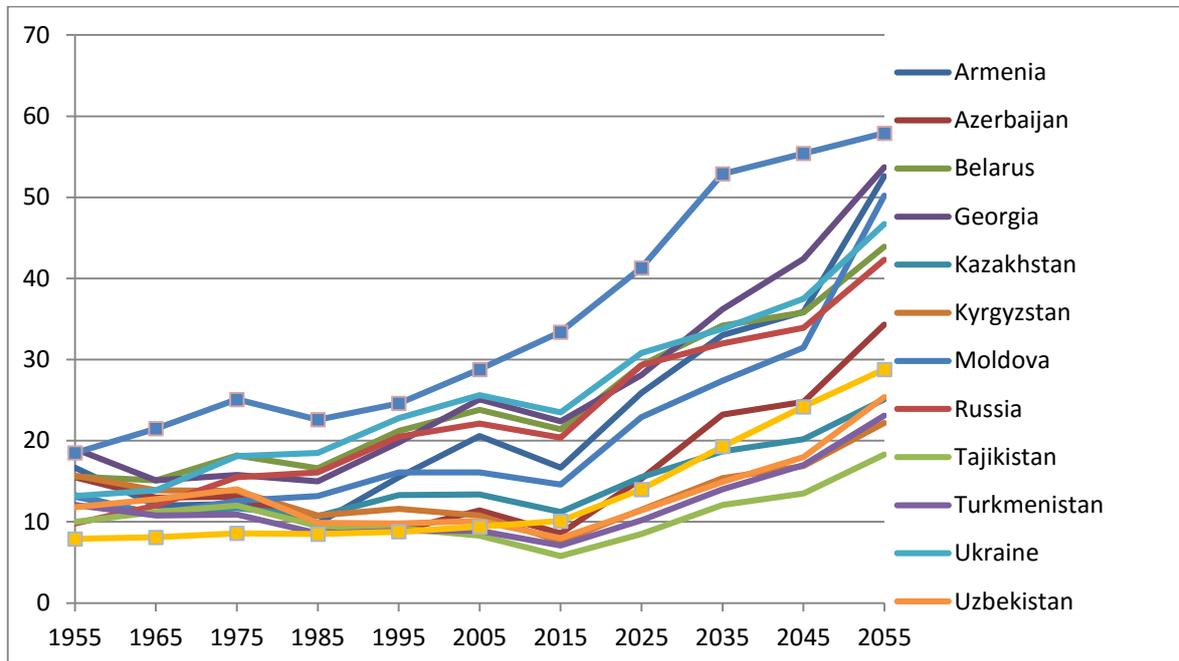
Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

The 'inverse' indicator of the potential support ratio, the old age dependency ratio, demonstrates an opposite dynamics (Figure 3), again with sub-group specific patterns: while this indicator since the middle of current decade has been ascending in *all* CIS+ countries, the countries of 'older' CIS+ sub-group have led the ascent followed by the countries of the younger sub-group. The total dependency ratio, a sum of ratios of 'pre-working age' (children) and 'post-working age' (old age) populations to 'working age' population, demonstrates its own dynamics which is also sub-group-specific (Figure 4). The total dependency ratio was growing until the last quarter of previous century in Central Asian countries (excluding Kazakhstan where it stopped growing earlier) and Azerbaijan and then has begun a decline. This decline is projected to continue well into the middle of the current century with a rebound expected later. In Azerbaijan the rebound of this indicator has started earlier, around the middle of second decade of this century, at almost the same time as it has occurred in the 'older' sub-group of the CIS+ countries.

The relative values of two components (child and old age) of the total dependency ratio vary between the sub-groups of the CIS+ countries. For instance, in Tajikistan the child component was making up to 90 per cent of the total dependency ratio in 1990s³.

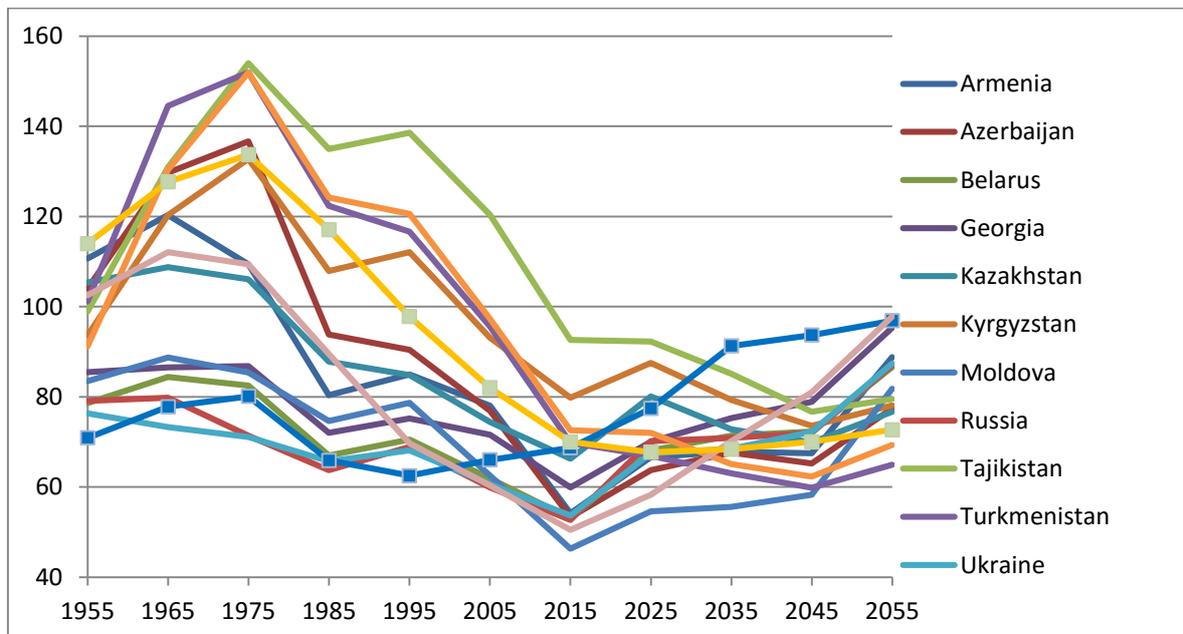
³ Tajikistan was selected as a demographically 'youngest' country within the CIS+ group to illustrate the pattern of dependency ratio dynamics in Central Asian countries.

Figure 3: Old age dependency ratio: ratio of population aged 65+ per 100 pop. 20-64 years old



Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

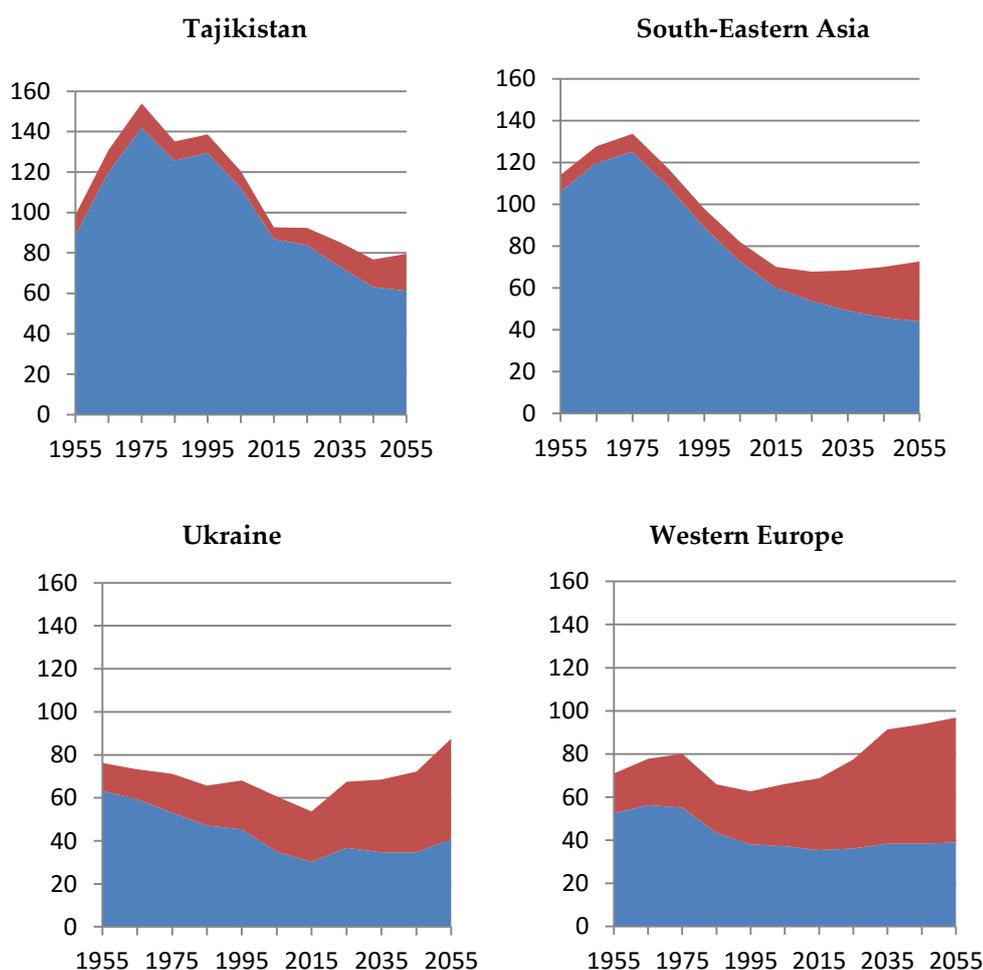
Figure 4: Total dependency ratio (ratio of population aged 0-19 and 65+ per 100 population 20-64)



Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

The decline in the child dependency indicator was and is projected to be the contributor to a decline of the total dependency ratio up to the second half of the twenty-first century, and only at later stages the old age component would start furthering a rebound of the total dependency ratio. This period of declining total dependency, which in case of Tajikistan is projected to last for several decades.

**Figure 5: Child dependency ratio & old-age dependency ratio
(blue shades 0-19 years; red shades 65+)**



Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

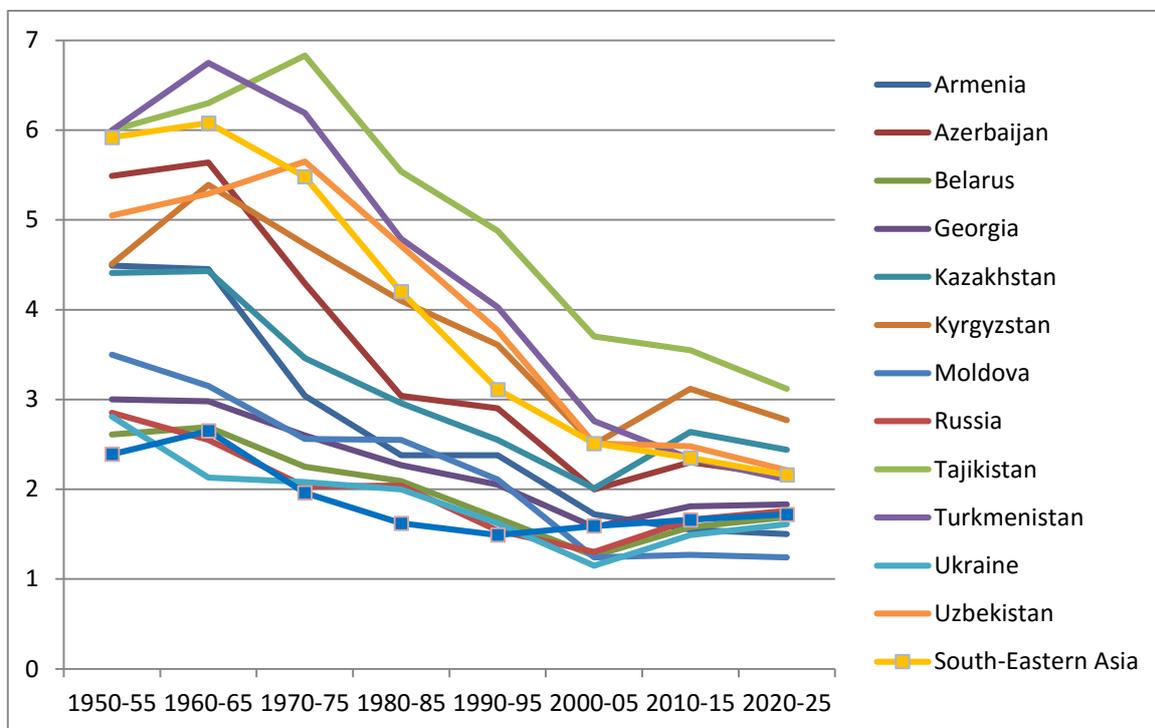
It corresponds to the period of availability of the 'first demographic dividend' when a 'window of opportunity' for adjusting to demographic transition stays open (United Nations, 2015b). In Ukraine, the demographically oldest CIS+ country, the relative value of the old age component in the total dependency ratio in 2015 was 43 per cent, and the relative value of the child component - 57 per cent. As shown in Figure 5, after 2015 the total dependency ratio in Ukraine, as well as in other demographically older CIS+ countries, is projected to grow due to increase of its old age component, following the pattern of Western European countries, thus

leaving behind the period of availability of the first demographic dividend. Yet, for this sub-group of the CIS+ countries a 'second demographic dividend' might become available, provided these countries would be able to introduce measures for investing in human capital and promoting retirement savings and, as a result, increase industrial investment and enhance economic growth (United Nations, 2015b).

Changes in fertility and mortality - major mechanisms of population ageing

Of the two primary causes of population ageing, low fertility and low mortality, the former one is obviously at play in all ex-soviet states, even though significant differences exist between the two sub-groups (Figure 6).

Figure 6: Total fertility (children per woman)

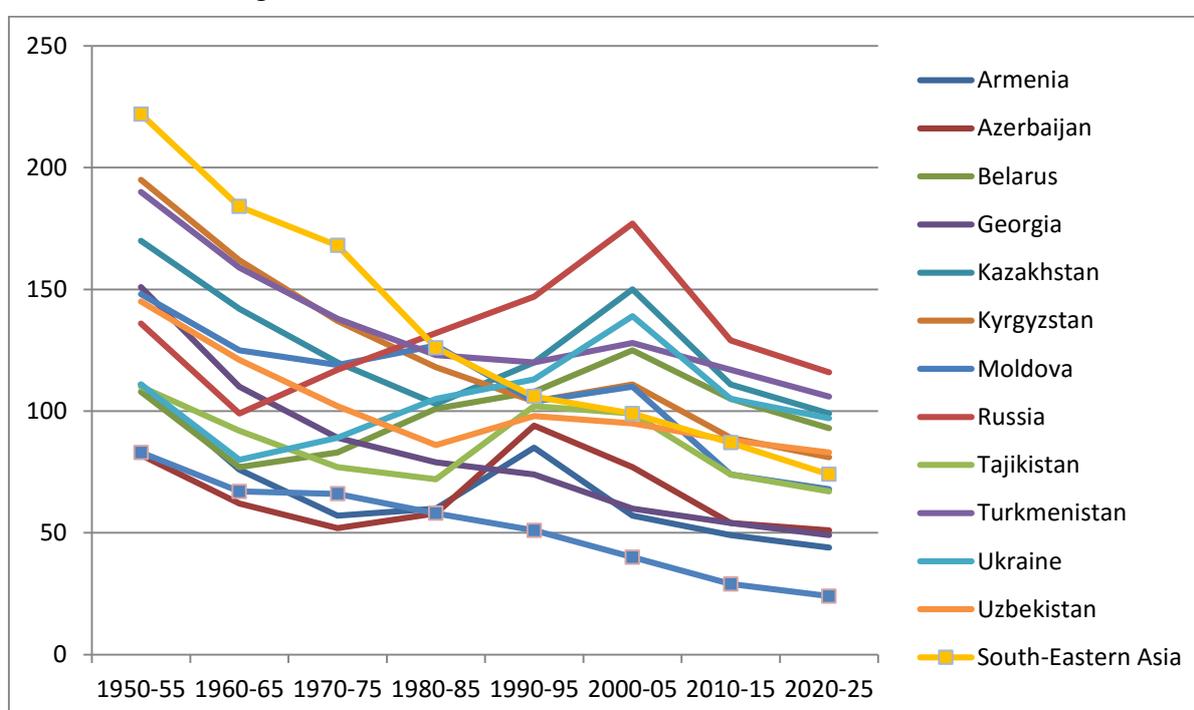


Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

During the current decade the highest level of total fertility was registered in Kyrgyzstan (3.55 children per woman) and the lowest – in Moldova (1.27 children per woman). For comparison, the corresponding figures in South-Eastern Asia and Western Europe during the same period were 2.35 and 1.66, respectively. It should be noted that in Georgia during the current decade the total fertility rate has rebounded above the replacement level – not a small achievement for a country experiencing a significant population decline (United Nations Population Fund, 2015).

Mortality, however, is much higher in the CIS+ countries than in more developed countries. The excess mortality is registered in practically all age groups of the CIS+ countries, but its levels are particularly striking among younger populations, including the working age population. As shown in Figure 7, during the period 2010-2015, the highest number of deaths in the population group 15 to 50 years old among the CIS+ countries was in Russia: it was more than four times higher than in the same age group of the Western European countries and almost 1.5 times higher than in the countries of South-Eastern Asia. The mortality in the same age group of Russian men during 2000-2015 was more than five times higher than the mortality of the Western European men and 1.8 times higher than the mortality of South-Eastern Asian men of the same age (Figure 7).

Figure 7: Adult mortality between age 15 and 50 years old, 35q15 (deaths under age 50 per 1,000 alive at age 15), both sexes combined



Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

The following CIS+ countries (in descending order) had the mortality levels higher than those of Western European and South-Eastern Asian countries but lower than the corresponding figures in Russia: Belarus, Kazakhstan, Kyrgyzstan, Moldova, Turkmenistan and Ukraine. In Azerbaijan, Armenia, Georgia and Tajikistan the mortality levels among men at the age 15 to 50 years were below the corresponding levels in the countries of South-Eastern Asia, but higher than in Western European countries. While during the second half of the twentieth century and the first decade of the twenty-first century the mortality levels in the 15 to 50 age group had been descending in most parts of the world including Western Europe and South-Eastern Asia, in the CIS+ countries, with the notable exception of Georgia, it had been growing

until the beginning of this century before starting to decline (Figure 7). Given the history of reversibility of mortality indicators in many CIS+ countries, it remains to be seen whether the current decline is sustainable.

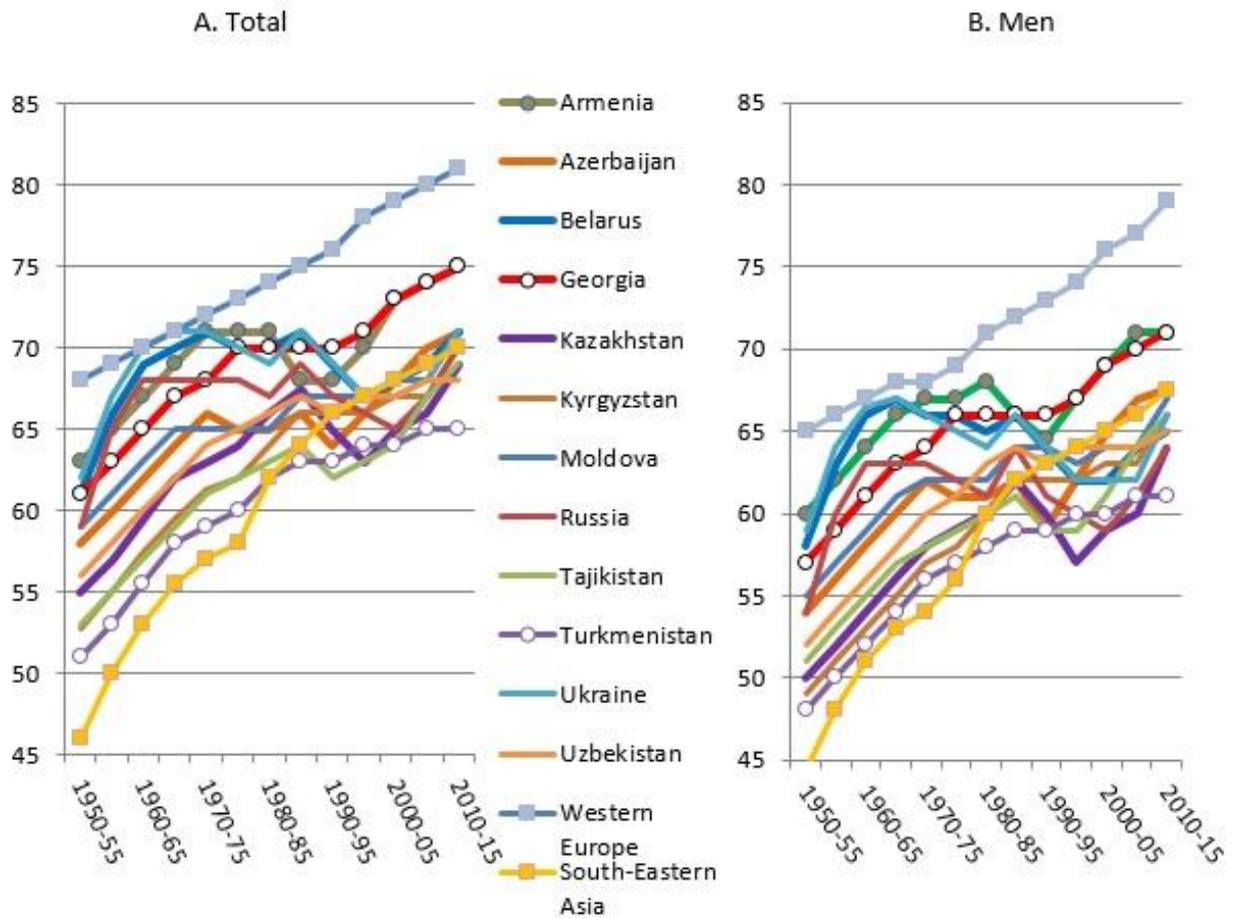
The CIS+ countries with the highest levels of mortality of younger population are also the countries with the highest proportion of older persons, Turkmenistan being an exception as it possesses only the former pattern. High mortality of younger population in some of the CIS+ countries is considered to be one of the causes of shifting population structure towards an older type. This points to a special characteristic of population ageing in this group of countries, 'ageing from the bottom', that is ageing owing to shrinking the younger population (Botev, 2012). High mortality in the CIS+ countries is registered in practically all age groups, which prompted some authors to speak about 'mortality crisis' in several ex-Soviet countries (Eberstadt, 2010; United Nations in Russia, 2008; World Bank, 2010), and also refer to a specific phenomenon of 'ageing without living longer' (Botev, 2012), or in other words, ageing without longevity. Indeed, during the period from 2010 till 2015, life expectancy at birth in all CIS+ countries, notwithstanding recent increase, had lagged behind Western European countries with the differences in total life expectancy varying from six years in Armenia and Georgia to 16 years in Turkmenistan (Figure 8). During the same period of time, the life expectancy at birth in the Central Asian countries, with the exception of Kyrgyzstan, was below the corresponding value for South-Eastern Asia.

From 1950 through 2015, the South-Eastern Asian countries have added 24 years to their total life expectancy at birth, though starting with rather low level of 46 years and rising it to 70 years. The biggest gain in the value of this indicator among the CIS+ countries was in Kyrgyzstan - 17 years (53-70 years). Noticeably, the increase in life expectancy during the recent 65 years has been steady in both the Western European and the South-Eastern Asian countries, though occurring in these regions at different levels and rates. The CIS+ countries, with the exception of Georgia, Kyrgyzstan, Moldova, and Turkmenistan, have experienced periodic declines in the value of this indicator, thus widening the gap with the Western European countries. For example, during the ten year period of 1960-1970 the life expectancy at birth in Ukraine (70 to 71 years), which had the highest level of this indicator among the Soviet Union republics, was equal to that in the Western European countries. However, in the following years the Western European countries had outstripped Ukraine, with the gap reaching its maximum of 12 years during the decade of 2000-2010. These features are particularly visible in the male life expectancy (Figure 8).

Aggravated imbalances in sex structure of older populations

Excess male mortality is behind the aggravated imbalances in the sex structure of older populations of the CIS+ countries (Figure 9). Globally, the number of older women exceeds the number of older men, and the gap increases with age. In Western Europe, in 2015, there were about 82 men per 100 women in the age group 60+, and in the age group 80-plus, there were about 56 men per 100 women.

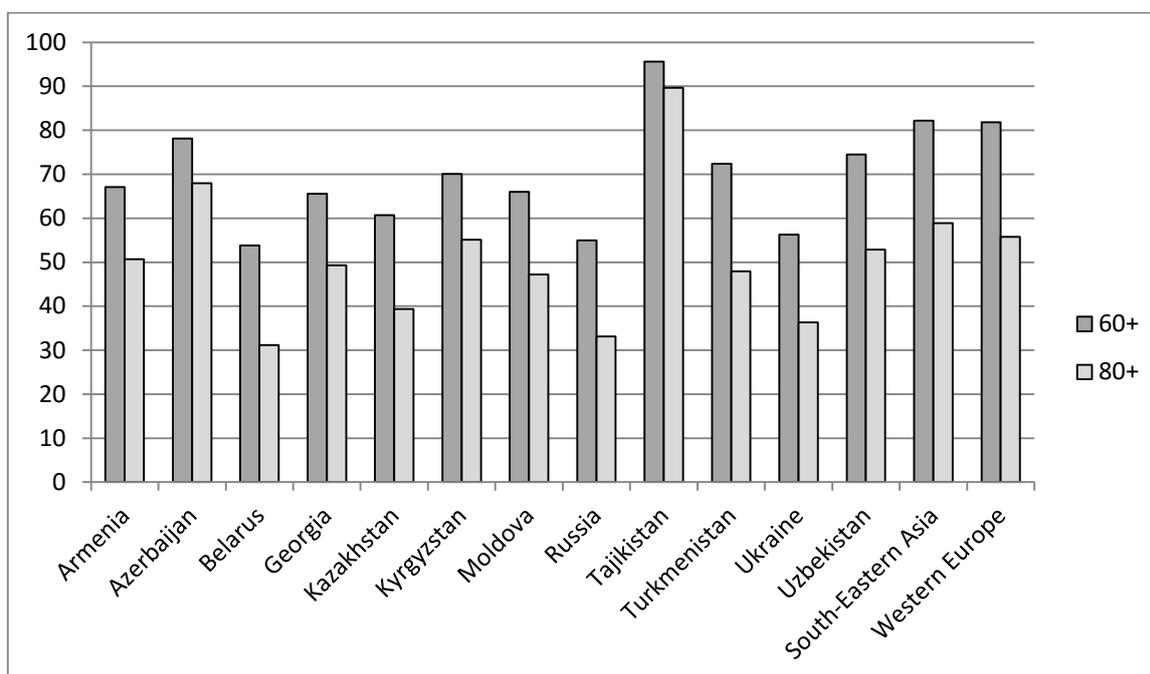
Figure 8. Life Expectancy at Birth



Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

Very close figures were registered in the region of South-Eastern Asia. In several CIS+ countries the sex differences in life expectancy are 'beyond anything ever recorded in peacetime population history' (Botev, 2012).

The CIS+ countries again demonstrate their demographic diversity. Belarus, Russia, and Ukraine exhibit the widest gaps in the sex ratios in the two older population groups with the lowest ratio figures in Russia being 55:100 at age 60+, and 33:100 at age 80+. Armenia, Georgia, Moldova and Kazakhstan have interim values of this ratio. The highest values are registered in Azerbaijan and in four Central Asian countries, namely Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The figures for Tajikistan are astonishingly high being 96:100 at age 60+ and 90:100 at age 80+. The author is unable to submit any plausible explanation for such high ratio of men to women in the older population of Tajikistan.

Figure 9: Sex ratio (males per 100 females) at ages 60+ and 80+, 2015

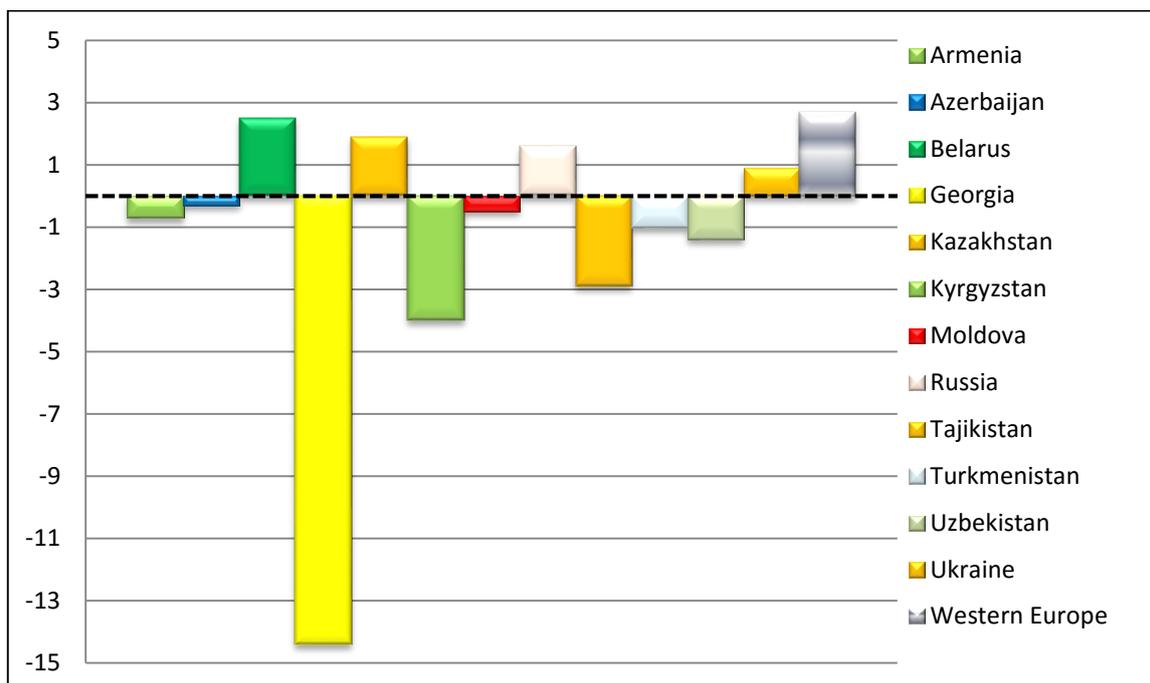
Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

The low sex ratios are reflected in high prevalence of widowhood amongst older women, particularly in Belarus, Russia and Ukraine, and this trend is projected to continue for several decades (Botev, 2012). The direct social implications of this demographic trend are solitary living of older women, their isolation and limited access to home care. On the other end of the demographic spectrum are younger people in the CIS+ countries who will have relatively low availability of grandparents of both sexes for intra-family exchanges and mutual support.

Role of migration

Another contributor to 'ageing from the bottom' in the CIS+ countries is *emigration*. It might appear that migration plays relatively small role in shaping the demographic structure of the ex-soviet countries. By the rate of net migration, in 2010-2015 four CIS+ countries, namely Belarus, Kazakhstan, Russia and Ukraine, had a migration surplus (Figure 10).

In 2015 Russia hosted 12 million migrants – the third largest numbers worldwide. At the same time Russia had the third largest diaspora in the world (11 million), Ukraine had the sixth largest diaspora of 6 million (United Nations, 2016a). During 2010-2015 several CIS+ countries had negative net migration rates, particularly Georgia, followed, in descending order, by Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Armenia, Moldova and Azerbaijan.

Figure 10: Net migration rate (per 1,000 population), 2010-2015

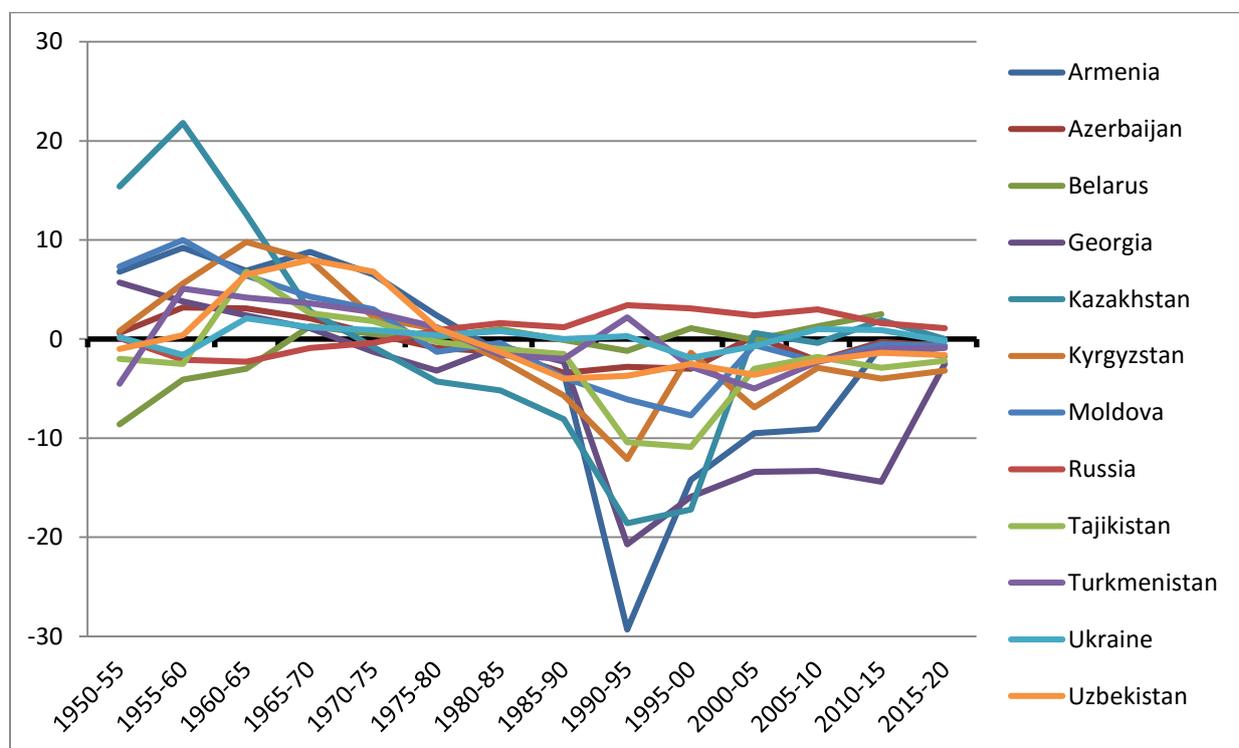
Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

The negative figures of net migration in the above eight countries appear modest in comparison to significant decline in corresponding figures during the first decade of transition (Figure 10). In fact, it has been only Russia that escaped the negative balance of emigration and immigration during the last forty years (Figure 11).

Globally, the majority of international migrants are of working age: in 2015, 72 per cent of them were between age 20 to 64, compared to 58 per cent of the total population of receiving countries (United Nations, 2016a). In 2015, the percentage of persons at age 20-64 among the migrant stock in Western European countries was 69.7⁴. It appears that positive net migration has prevented Europe from experiencing the depopulation between 2000 and 2015 and has accelerated the population ageing process in some (sending) Eastern European countries (United Nations, 2016a). Given the predominance of younger persons among migrants, the process of migration, subject to its magnitude, may influence the age composition of population in both sending and receiving countries. For instance, in Ukraine, during the first decade of independence (1991-2001), emigration had contributed to ageing of population, diminishing working age population, and declining fertility, owing to losing younger population (Malinovska, 2012; Ptoukha Institute for Demography and Social Studies, 2014).

⁴ Author's calculations based on data from: Trends in International Migrant Stock: The 2015 Revision (Table 24. Percentage distribution of the international migrant stock by age and sex and by major area, region, country or area, 2015) (United Nations, 2016b).

Figure 11: Net migration rate (per 1,000 population), 1950-2020

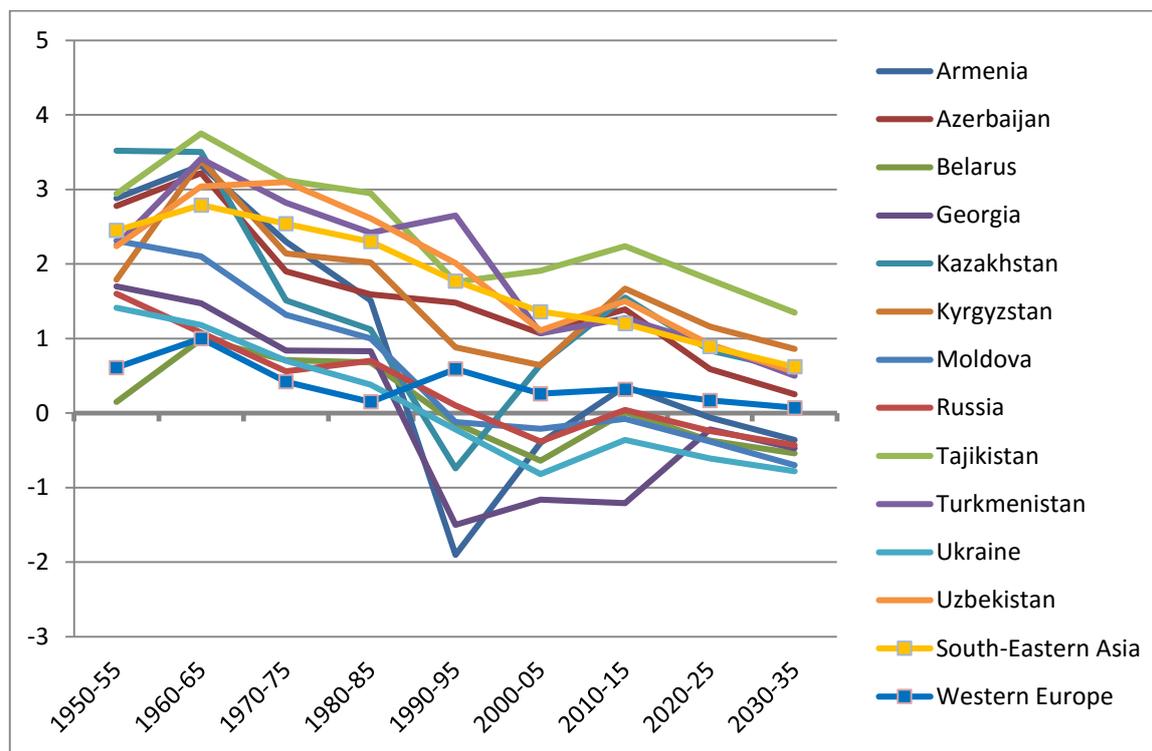


Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

Population ageing and population decline

In addition to and in parallel with the accelerated population ageing several CIS+ countries are experiencing periodic or continuous decline of their populations: Armenia, Belarus, Georgia, Kazakhstan, Moldova, Russia and Ukraine (Figure 12). The highest rates of decline were registered during the decade followed the collapse of the Soviet Union, partial or full recovery of population growth had occurred in several countries at the beginning of the second decade of the twenty-first century. Yet, in several CIS+ countries, Belarus, Moldova and Georgia, population decline has prompted their governments recognize it as a matter of national security (Government of Belarus, 2011; Republic of Moldova, 2012; Ministry for Foreign Affairs of Georgia, 2016).

As in the case of population ageing, two demographic processes are the major causes of population decline in some CIS+ countries: low fertility and high mortality. Emigration is also an important factor of population decline in countries with the negative net migration rates such as Armenia, Moldova and particularly Georgia. Possible population decline in many European countries owing to low fertility has been compensated by inflow migration (United Nations, 2016a). The above demographic features are not unique on the global scale, but their combination in the CIS+ countries is distinctive.

Figure 12. Average annual rate of population change (percentage)

Source: United Nations. (2015a). *World Population Prospects: The 2015 Revision*, custom data acquired via website: <http://esa.un.org/unpd/wpp/DataQuery/>

Moreover, the specific features of demographic change are combined in this group of countries with simultaneously ongoing political and economic transitions thus making these countries particularly prone to the challenges of ageing societies.

Challenges *versus* opportunities

The consequences of population ageing include both challenges and opportunities, and the principal policy task is to overcome challenges and utilize opportunities in order to adjust to population and individual ageing (United Nations, 2002). The societal impact of population ageing can be most significant in such areas as labour market and productivity; social security; health care services; and social services, particularly long-term care. This impact has already been felt in the 'older' CIS+ subgroup, but it would inevitably be experienced by the demographically 'younger' countries of Central Asian and Azerbaijan.

Many policy measures dedicated to adjusting to demographic transition and population ageing are based on utilizing the first and second demographic dividends (Lee and Mason, 2010; United Nations, 2015b). As was noted in the demography section of this article, the first demographic dividend can be employed in the Central Asia countries and Azerbaijan and should envisage measures for increasing human capital through promoting employment and

providing opportunities for dissent work. The principal target population group for utilizing the first demographic dividend is people of working age.

The potential advantages of the second demographic dividend are rooted in increasing longevity and would be particularly valuable in the demographically 'older' countries of the CIS+ grouping. The corresponding policy measures should, like in the countries of the 'younger' sub-group, aim at supporting the human capital, and also at increasing the financial capital available for investing in economic growth and social development of countries where the healthy and active longevity is promoted and utilized.

The first and second demographic dividends provide potentially most valuable opportunities for overcoming the challenges of demographic transition and, in more general terms, for adjusting to demographic changes, including population ageing. Yet other opportunities do also exist in the CIS+ countries. In the first instance, it is high level of education of population: the CIS+ countries have a higher level of educational attainment than the EU-28 Member States (Eurostat, 2016) and practically 100 per cent literacy rates (World Bank, 2016). Further investment in professional training and lifelong education is the major prerequisite for utilizing both demographic dividends in the CIS+ countries, as anywhere else.

As noted above, several most advanced in terms of population ageing countries of the CIS+ 'older' sub-group, are also those facing another demographic challenge – population decline. These two simultaneous and interdependent demographic processes lead to shrinking labour forces thus creating a condition of 'demographic deficit' (Farrel, Ghai, & Shavers, 2005). Demographic deficit with its three 'symptoms' – population ageing, population decline and contracting labour force – can be detected in several CIS+ countries, namely Armenia, Belarus, Georgia, Moldova, Russia and Ukraine. This phenomenon is not unique to the CIS+ countries, it takes place in many other countries of the world belonging to both more and less advanced economies (Farrel et al. 2005; Harper, 2014). While low fertility is the universal cause of demographic deficit, several additional factors are at play in the CIS+ countries: high mortality among working age population and emigration of younger workers coupled with an outflow of skilled professionals.

Demographic deficit if unattended may lead to declining productivity, which would be caused by simultaneous ageing and shrinking of labour force. It is also claimed that older labour force would trigger decreasing the potential of economy for innovations and adaptability (for discussion, see Harper, 2014). The social cost of demographic deficit can be felt in diminished budgetary resources needed for covering the increasing costs of social security, health care and social care of the growing ageing population.

The numerous challenges of demographic deficit are real yet manageable. Most often, governments see the key task for adjusting to population ageing and overcoming the demographic deficit, in finding additional financial resources to cover the rising cost of support for the growing ageing population when the working age population is shrinking. An alternative approach would strive to overcome demographic deficit through measures for improving labour productivity and augmenting the labour forces (Harper, 2014; Bussolo,

Koettl, & Sinnott, 2015). The experts of the World Bank suggest that ‘measures taken to improve labor productivity would swamp any quantity effects of smaller labor forces’, in the CIS+ countries (Chawla et. al, 2007).

In a broader sense, both public and individual measures would be required for offsetting the demographic deficit (Harper, 2014). Public measures could be designed to, first, change the age composition of the population through increasing childbearing and encouraging immigration; second, decrease dependency by promoting longer working life and gradual retirement; and, third, increase productivity by among other measures, stimulating technological innovations. Individual measures could include life-long personal adjustment to challenges and opportunities of ageing society, namely life-long education; mental adjustment (accepting positive self-images of ageing); and physical adjustment (healthy life styles). In addition to macro (public) and micro (individual) levels, measures would also be needed at meso-level, including adjustment in social networks within the family and community.

Many CIS+ countries which experience demographic deficit have focused their population policies on increasing the fertility. However, the effect of transfer-based pronatalist policies is often negligible (Chawla et al., 2007). This does not mean that fertility in the CIS+ countries cannot be restored up to the replacement level. The recent experience of Georgia, if sustained, would be a proof of such possibility (United Nations Population Fund, 2015). More sustainable approach could be based on measures aimed at supporting family in its childbearing expectations and childrearing capacity.

Another policy approach under discussion is managed intraregional migration (Chawla et al., 2007). The views on short- and long-term effects of migration on the age structure of receiving countries are controversial (Vishnevsky, 2004; Vignon, 2005; King & Lulle, 2016). As noted in the demographic section of this article, some CIS+ countries are and will be gaining working age population, while others will be losing it, such demographic ‘asymmetry’ may create predispositions for intraregional migration. However, potentially receiving countries will be required to provide the necessary incentives and conditions through reformed policy and transformed institutions in order to be able to attract the needed labour force, including by promoting the return migration. This is not going to be an easy task as many of such potentially receiving countries, such as Armenia, Georgia and Moldova, today belong to the ‘net sending’ countries suffering also from brain-drain. The experience of Russia, with its almost equal numbers of immigrants and diaspora, points to the need of careful assessment of existing migration policy.

As noted in the Madrid International Plan of Action on Ageing, countries with economies in transition face special difficulties in responding to the opportunities and challenges of population ageing in the twenty-first century (United Nations, 2002). Some of the difficulties faced by the CIS+ countries can be related to the specific aspects of demographic transition outlined above. Yet, many other difficulties stem from undesirable effects of the incomplete process of multifaceted transition from the centrally planned economies toward a society with loosely defined goals and values. These undesirable effects are primarily related to lingering

in reforming the policies and institutions. The continuing stagnation of reforms has compelled the market structures and institutions of many CIS+ countries to lag far behind those in advanced economies (European Bank, 2013) with the incurring economic and social cost of rising unemployment, stagnating or even falling life expectancy and growing inequality (Roaf, et al., 2014).

Policy responses aimed at reacting to and preventing the negative implications of population ageing are well defined and have been attempted in several countries (United Nations Population Fund & HelpAge International, 2012; Sidorenko & Zaidi, 2013). The barriers for advancing such policies in the CIS+ countries are also well known: complacency and lack of continuity. Many CIS+ countries have chosen a gradualist approach delaying and avoiding reforms and thus preserving many features of old socio-economic system (Roaf et al., 2014). However trivial it may sound, the universal task is to accelerate the process of multifaceted societal transition, which should comprise policies for adjusting to population changes such as population ageing.

References

- Botev, N. (2012). Population ageing in Central and Eastern Europe and its demographic and social context. *European Journal of Ageing*, 9 (1), 69-79.
- Bussolo, M., Koettl, J., & Sinnott, E. (2015). *Golden aging: Prospects for healthy, active, and prosperous aging in Europe and Central Asia*. Washington, DC: World Bank.
- Chawla, M., Betcherman, G., & Banerji, A. (2007). *From red to gray: The third transition of aging populations in Eastern Europe and the former Soviet Union*. Washington, DC: World Bank. Accessed 9 May 2016 from: http://siteresources.worldbank.org/ECAEXT/Resources/publications/454763-1181939083693/full_report.pdf
- Eberstadt, N. (2010). *Russia's peacetime demographic crisis: Dimensions, causes, implications*. NBR Project Report, May 2010. Seattle, WA: The National Bureau of Asian Research
- European Bank. (2013). *Transition report 2013. Stuck in transition?* London, UK: European Bank for Reconstruction and Development. Accessed 9 May 2016 from: http://2013.trebrd.com/images/downloads/357_TR2013v3.pdf
- Eurostat. (2016). *Educational level and tertiary education*. EU-Commonwealth of Independent States (CIS) - Statistics on population, employment and living conditions. Accessed 9 May 2016 from: [http://ec.europa.eu/eurostat/statistics-explained/index.php/EU-Commonwealth_of_Independent_States_\(CIS\)_-_statistics_on_population,_employment_and_living_conditions](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU-Commonwealth_of_Independent_States_(CIS)_-_statistics_on_population,_employment_and_living_conditions)
- Farrel, D., Ghai, S., & Shavers T. (2005). *The Demographic deficit: How aging will reduce global wealth*. The McKinsey Quarterly, March. Accessed on 10 May 2016 from: <http://www.mickeybutts.com/globalagingQuarterly.pdf>
- Government of Belarus. (2011). *National Report of the Republic of Belarus on the Implementation of the Regional Strategy for the Madrid International Plan of Action on Ageing* (in Russian). Country Reports, UNECE : Second Review and Appraisal of MIPAA/RIS, 2012. Accessed 9 May 2016 from: http://www.unece.org/fileadmin/DAM/pau/age/country_rpts/BLR_report.pdf

- Harper, S. (2014). Economic and social implications of aging societies. *Science*, 346 (6209), 587-591.
- King, R., & Lulle, A. (2016). *Research on migration: Facing realities and maximising opportunities*. Luxembourg: Publications Office of the European Union. Accessed 9 May 2016 from: https://ec.europa.eu/research/social-sciences/pdf/policy_reviews/ki-04-15-841_en_n.pdf#view=fit&pagemode=none
- Lee, R., & Mason, A. (2010). Fertility, Human capital, and economic growth over the demographic transition. *European Journal of Population*, 26 (2), 159-182
- Lipton, D. (2014). *Building market economies in Europe: Lessons and challenges after 25 years of transition*. Accessed 10 May 2016 from: <http://www.imf.org/external/np/speeches/2014/102414.htm>
- Malinovska, O.A. (2012). *Diversification of population in Ukraine as a result of international migration: challenges and responses* (In Ukrainian). Kyiv: National Institute for Strategic Studies. Accessed 9 May 2016 from: http://www.niss.gov.ua/content/articles/files/malin_dop-e2d16.pdf
- Ministry of Foreign Affairs of Georgia. (2016). *National security concept of Georgia*. Georgia: Ministry of Foreign Affairs of Georgia. Accessed 9 May 2016 from: <http://www.mfa.gov.ge/MainNav/ForeignPolicy/National%20SecurityConcept.aspx?lang=en-US>
- Ptoukha Institute for Demography and Social Studies. (2014). *Imperatives of demographic ageing (2014) Kyiv: "ADEF-Ukraine"* (in Ukrainian). Accessed 9 May 2016 from: http://www.idss.org.ua/monografii/2014_Naselennya.pdf
- Republic of Moldova. (2012). *National Report on the Follow-Up to the Regional Implementation Strategy (RIS) of the Madrid International Plan of Action on Ageing (MIPAA) in the Republic of Moldova (2007-2011)*. Country Reports, UNECE : Second Review and Appraisal of MIPAA/RIS, 2012. Accessed 9 May 2016 from: http://www.unece.org/fileadmin/DAM/pau/age/country_rpts /MDA_report.pdf
- Roaf, J., Atoyamn, R., Joshi, B., & Krogulski, K. (2014). *25 years of transition: post-communist Europe and the IMF*. Washington, D.C.: International Monetary Fund. Accessed 9 May 2016 from: https://www.imf.org/external/pubs/ft/reo/2014/eur/eng/pdf/erei_sr_102414.pdf
- Sidorenko, A. (2010) *Population ageing in the countries of the Former Soviet Union: Concerns and Responses*. The WDA-HSG Discussion Paper Series on Demographic Issues No. 2010/7. Accessed 9 May 2016 from: <http://www.wdaforum.org/fileadmin/ablage/wdaforum/publications/dp2010-07.pdf>
- Sidorenko, A., & Zaidi, A. (2013). Active ageing in CIS countries: Semantics, challenges, and responses. *Current Gerontology and Geriatrics Research*. Accessed 10 May 2016 from: <http://downloads.hindawi.com/journals/cggr/2013/261819.pdf>
- United Economic Commission for Europe. (2016). *Geographical scope*. Accessed 10 May 2016 from: <http://www.unece.org/oes/nutshell/region.html>
- United Nations Population Fund. (2015). *Population situation analysis (PSA) Georgia 2014*. Tbilisi, Georgia: United Nations Population Fund. Accessed 9 May 2016 from: http://eeca.unfpa.org/sites/default/files/pub-pdf/PSA%20_Final%20Print%20version.pdf

- United Nations Population Fund & HelpAge International. (2012). *Ageing in the twenty-first century: A celebration and a challenge*. New York: United Nations Population Fund and London: HelpAge International.
- United Nations. (2002). *Madrid International Plan of Action on Ageing*. New York: United Nations. Accessed 10 May 2016 from:
http://www.un.org/en/events/pastevents/pdfs/Madrid_plan.pdf
- United Nations. (2015a). *World Population Prospects: The 2015 Revision*. Accessed 10 May from: <http://esa.un.org/unpd/wpp/DataQuery/>
- United Nations. (2015b). *World Population Ageing*. New York: United Nations. Accessed 9 May 2016 from:
http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf
- United Nations. (2016a). *International Migration Report 2015*. Highlights. New York: United Nations. Accessed 9 May 2016 from:
http://www.un.org/en/development/desa/population/migration/publications/migrationreport/docs/MigrationReport2015_Highlights.pdf
- United Nations. (2016b). *Population Division. Internal Migration*. Accessed 10 May 2016 from:
<http://www.un.org/en/development/desa/population/migration/data/estimates2/estimates15.shtml>
- United Nations in Russia. (2008). *Demographic policy in Russia: From debate to action*. Moscow, Russia: United Nations in Russia.
- Vignon, J. (2005). Responses to the new demographics: Present and future strategies for the European Union. In M., Macura, A.L., MacDonald & W., Haug (Eds.), *The new demographic regime: Population challenges and population responses* (pp. 45-56). New York & Geneva: United Nations.
- Vishnevsky, A. (2004). Replacement migration: Is it a solution for the Russian Federation? *Population Bulletin of the United Nations*, 'Policy responses to population decline and ageing' Special Issue Nos. 44/45 2002 (pp. 273-287). New York: United Nations
- World Bank. (2010). What underlies Ukraine's mortality crisis? Europe and Central Asia: The World Bank. Accessed 10 May 2016 from:
<http://siteresources.worldbank.org/UKRAI/NEINUKRAINIANEXTN/Resources/PrichinysmertnostivukrainiENG.E.pdf>
- World Bank. (2016). *Adult Literacy Rate*. Data. Accessed 9 May 2016 from:
<http://data.worldbank.org/indicator/SE.ADT.LITR.ZS>