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Developmental and economic consequences of expected population changes in the Russian Federation

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Abstract

The paper discusses economic and developmental consequences of future population changes in Russia, taking into account demographic changes both on the country level and broken down by ethnic group. It focuses on their impact on the labour market, pension system and economy, including regional development, also taking into consideration differences between ethnic groups as regards their demographic and socio-economic characteristics. The role of international migration is discussed separately.

Key words: Russia, population changes, ethnic groups, migration

Abstrakt

Artykuł omawia ekonomiczne i rozwojowe skutki przyszłych zmian ludnościowych w Rosji, biorąc pod uwagę zmiany demograficzne zarówno na poziomie kraju, jak i w rozbiciu na grupy etniczne. Skupia się na ich wpływie na rynek pracy, system emerytalny i gospodarkę, w tym rozwój regionalny, uwzględniając różnice między grupami etnicznymi w kwestii ich charakterystyk demograficznych i społeczno-ekonomicznych. Oddzielnie poruszona jest rola migracji międzynarodowych.

Słowa kluczowe: Rosja, zmiany ludnościowe, grupy etniczne, migracja

Introduction

Demographic changes are reflected in a country's socio-economic development, *inter alia*, through their direct impact on the demand and supply side of the labour market. Both the population size and its composition play vital roles, age distribution most significantly. Population shrinkage does not have to pose a problem for a country's economic performance unless it is accompanied by a decline in working age population. Apart from age distribution, the structure of the population on other dimensions is also important. Changes to ethnic composition may translate to economic and developmental consequences due to existing differences between ethnic groups in terms of their socio-economic characteristics. In the Russian Federation (RF), all the phenomena mentioned above coexist – the country is threatened by depopulation, its population is exposed to aging and to significant changes to its ethnic composition.

This text focuses on economic and developmental consequences of future population changes in the RF as simulated by the MIGRUS project (Kupiszewski, Kupiszewska 2014a; for detailed assumptions underlying the simulations see Kupiszewski, Kupiszewska 2014b). The simulations were based on a cohort-component, multistate, hierarchical population projection model called MULTIPOLES (Kupiszewska, Kupiszewski 2013; Kupiszewski, Kupiszewska 2011), in which data was disaggregated by ethnicity, sex and age (a division into eighteen 5-year age groups, up to 85+, was used). A starting point was January 1, 2011 and the simulations were run for the period of 25 years, i.e. until 2036, for 22 most numerous ethnic groups (apart from Chechens) with representatives of the remaining ethnic groups forming one category labelled as *Others*.¹ The model was based on specific assumptions on the three components of population change (fertility, mortality and net international migration) for each ethnic group. These quantitative assumptions, in turn, were based on three different qualitative scenarios of possible social, economic and political developments in the Russian Federation. The first scenario, called “Modernisation” scenario, assumes a departure from the raw material-based economy towards the modern economy and the democratisation of political life, which should allow investments in health care, programs supporting natality and healthy life style campaigns, and which should result in an increase in fertility, life expectancy and an intensified migration inflow. The second scenario, referred to as “No significant changes”, assumes maintenance of the current high dependence on energy resources and of the present political regime with current expenditures on the purposes named above and consequently a moderate increase in fertility and mortality along with a stagnating net migration. The third scenario, labelled “Negative political and economic developments”, assumes the deterioration of the current economic situation worldwide along with expansion of political conflicts and further development of the autocratic system in Russia, which would

¹ In other words, the *Others* category in the MIGRUS simulations includes all ethnic groups living in the RF apart from the 22 most numerous groups and Chechens.

lead to a reduction of health care, pro-natalist and healthy life style programs and consequently a decrease in net migration, decreasing or stagnating fertility and stagnating mortality.

The paper is structured as follows. The first section gives a short overview of the simulated population changes and their potential consequences for Russia's labour market, its pension system, and its economy – looking from the country perspective. The second section goes into ethnic diversity issues. Its first subsection is concentrated on simulated changes in magnitudes and age structures of specific ethnic groups and their potential economic and developmental impact. The second subsection discusses the role of the current characteristics of specific ethnic groups taking into account labour market behaviour. Based on the current performance of ethnic groups in this domain, the developmental and economic impact of potential changes to their size/share in the RF population are considered. The third section focuses on the role of international migration in simulated population changes and its potential economic and developmental impact, both on the country level and as regards specific ethnic groups.

1. Expected population changes and their potential economic impact – the country perspective

The population of the Russian Federation has been undergoing significant changes in size and composition. Since the mid-1990s, Russia has noted a population decline of about 4.1 million – a fall from 148.3 million in 1995 to 144.2 million in 2015 (*Demographic Yearbook of Russia 2015; Regiony Rossii 2016*),² which comes out to an average annual decline of over 200 thousand. The main reasons for this decline were high mortality (particularly among males) coupled with low fertility.³ As a result, even a positive migration balance was not able to compensate for the incurred losses (see Section 3). Many available population projections foresee further population decline in Russia in the next decades. According to the United Nations (UN 2015), the RF population will be 127.8 million in 2036 in the low variant, and 142.4 million in the high. The prognosis of the Russian Federal State Statistics Service (Rosstat) is more optimistic: in its low variant, it expects the population to reach 128 million in 2036, in the high variant – 155.5 million (*Demographic Yearbook of Russia 2013*).⁴ MIGRUS results, due to the fact that they do not cover the Chechen Republic, cannot be

² Rosstat presents higher numbers for the total population – 146.5 million as of 2015 – which include 2.3 million inhabitants of Crimea.

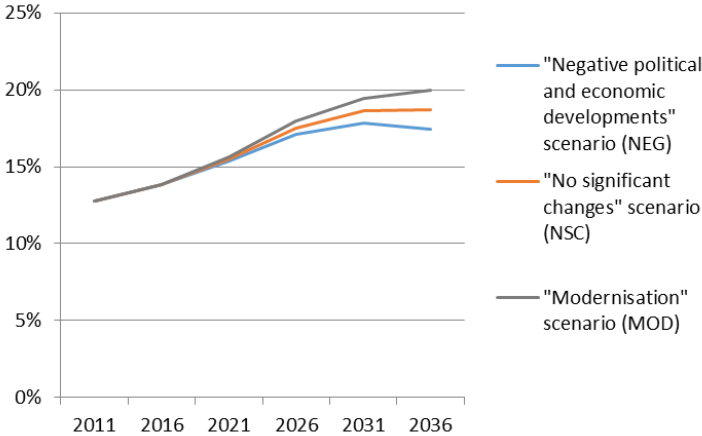
³ These numbers were more alarming in 2013, when the population decline since 1995 amounted to about 5.1 million, which meant an annual average decline of about 260 thousand. The demographic situation improved in the last 4 years.

⁴ The newest Rosstat prognosis expects the population of Russia to reach 138.5 million and 152.9 million, respectively (*Demographic Yearbook of Russia 2015*). These numbers, however, include the population of the Russia-occupied Crimea, and therefore are not directly comparable. The numbers presented in the *Demographic Yearbook of Russia (2013)* should rather be compared with the former UN (2013) projection, which was 119.6 million if fertility levels are low and 139.7 million if they are high.

easily compared to the projections mentioned above. According to the MIGRUS simulations, the population of the Russian Federation without inhabitants of the Chechen Republic will fall by 11.7%, to 125.4 million in 2036 under a scenario assuming negative political and economic developments (NEG), while it will increase by 1% – reaching a level of 143.5 million – assuming a “Modernisation” scenario (MOD).⁵

Although both the Rosstat and the MIGRUS simulations provide variants predicting no population decline (or even an increase), a look at the projected age structure is enough to indicate potential risks, in particular looking from economic, and thus social and developmental, perspectives. Although population shrinkage need not mean a deterioration of economic outcomes, unfavourable changes to population composition, including its age structure, definitely do so. The Rosstat prognoses predict growth in the share of population older than working age in all of their three variants. The outcomes of the MIGRUS simulations confirm this result for Russia without the Chechen Republic (see Figure 1).⁶

Figure 1. Simulated share of population older than working age in Russia until 2036



Source: based on MIGRUS simulations (Kupiszewski, Kupiszewska 2014a)

The above figure shows that, regardless of the scenario, the share of population over working age will increase in the next decades, growing from less than 13% in 2011 to over 17% in 2036 in the case of the “Negative political and economic development” scenario and to 20% in the case of the “Modernisation” scenario. An increase in the share of older people forces an increase in public expenditures on the social security system, including the pension system. The pension system in Russia follows a three-tier model with a basic pillar fitting into the pay-as-you-go (PAYG) scheme, which is less viable in the face of aging population.⁷ A rise in the share of population older than working age also means increased demand for health care

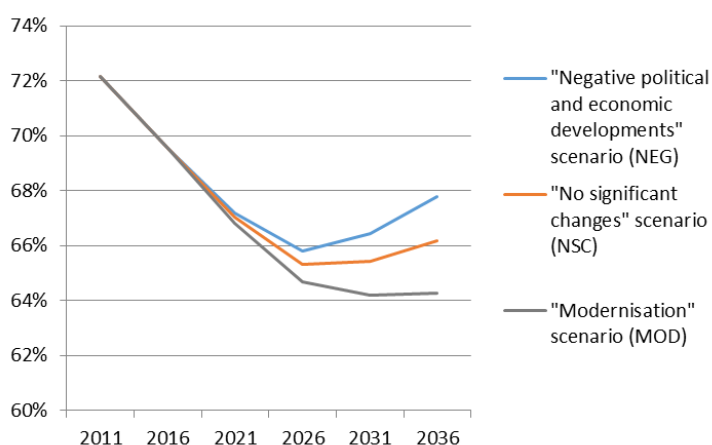
⁵ Rosstat estimates the size of the RF population excluding the Chechen Republic and Russia-occupied Crimea at 142.8 million as of the end of 2015 (*Regiony Rossii* 2016).

⁶ Hereafter, whenever Russia is mentioned in the context of the MIGRUS simulations, the Chechen Republic is excluded.

⁷ For an overview of the process of policy-making and the recent changes to the Russian pension system, see Remington (2015).

resources.⁸ In order to afford those expenses, the state budget has to be filled with revenues generated by younger generations. For this reasons, the share of the working age population is crucial to ensure the solvency of the social security system. The MIGRUS simulations foresee a sharp decline in the share of the working age population in Russia by 2026, regardless of the scenario – from 72% in 2011 to 65–66% (see Figure 2). However, the subsequent decade should bring an increase (NEG and NSC scenarios) or stabilisation (MOD scenario) in the share of the working age population. This is consistent with changes in the share of people older than working age in this period.

Figure 2. Simulated share of working age population in Russia until 2036



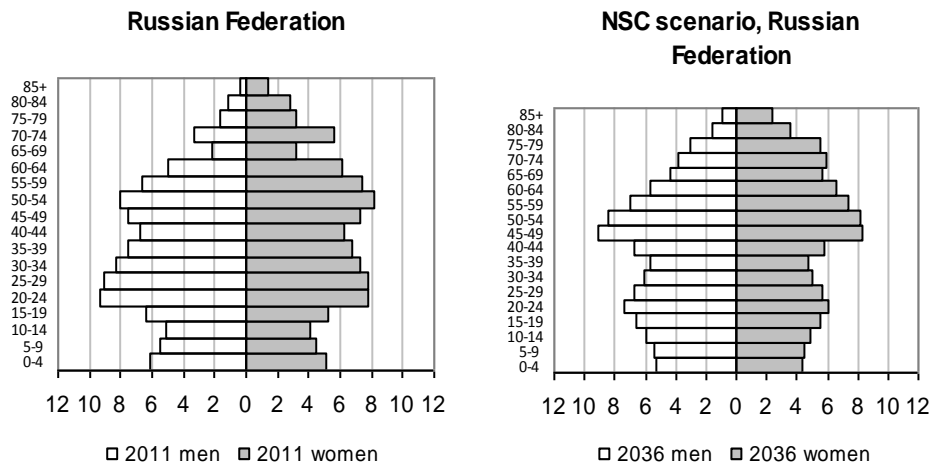
Source: based on MIGRUS simulations (Kupiszewski, Kupiszewska 2014a)

It is worthwhile to note that it seems that in the short/medium-term perspective the MOD scenario will bring the most negative consequences (despite intensified migration inflow). If modernisation does not occur, an increase in the share of the working age population is to be expected from 2026. This paradox will be explained later on by a discussion of dependency ratios.

In order to assess the impact of age structure changes on the labour market and social security system, we have to look simultaneously at both changes in the size of the working age population and cohorts older than working age. Age pyramids depicted in Figure 3 allow a comparison between the present (2011) and simulated (2036) age distribution of the RF population according to the NSC scenario (which constitutes the moderate variant).

⁸ However, taking into account the specific character of the Russian public health care system, based to a large extent on informal co-financing by patients themselves (Fotaki 2009), increased demand for health care resources does not necessarily have to mean increased public health spending, but (if nothing changes in this respect) will rather mean an increased burden on citizens.

Figure 3. Comparison of age distribution of the population of Russia in 2011 and 2036 (NSC scenario)



Source: MIGRUS simulations (Kupiszewski, Kupiszewska 2014a)

As shown in Figure 3, age distribution of the population in Russia is expected to evolve further towards a typical constrictive shape. What is, however, worth noting here, is that the imbalance between sexes, with male older age groups being less numerous, will persist. The pyramids for the remaining two scenarios look similar, which makes it evident that population aging in Russia is inevitable.

A shrinking share of the working age population coupled with a growing share of older people leads to an increase in burdens on the working age population in terms of various intergenerational transfers – both on the state level (in the form of taxes and social security contributions) and on the private level (monetary expenses and non-monetary support given to aging family members). Such an expenditure pressure diminishes savings and thus may also limit potential investment possibilities.

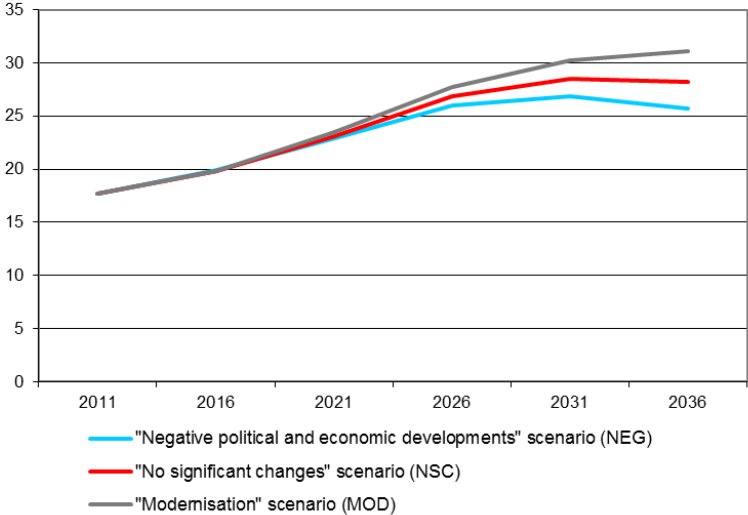
The relationship between the size of different age groups can be expressed by various measures indicating the scale of social and economic burden, e.g., an old-age dependency ratio (ODR) or potential support ratio (PSR). The literature offers several additional measures, for instance: the Economic Elderly Support Ratio, EESR, and the Labour Market Support Ratio, LMSR (Bijak et al. 2007).⁹ Although the latter two measures seem more appropriate to illustrate the true burden on the active part of the labour market,¹⁰ MIGRUS results do not provide data enabling a calculation of EESR and LMSR for the years to come. Without estimates of the future size of economically active and inactive populations, we have to stick to age dependency ratios. The old-age dependency ratio indicates the number of old age

⁹ The EESR is defined as the ratio of the total economically active population (aged 15 or more) to the inactive population in retirement age (65+). The LMSR is the ratio of the total economically active population to the total inactive population (where both groups consists of persons aged 15 and more).

¹⁰ They are sometimes called *economic dependency ratios* (as opposed to such measures as ODR or PSR, called *demographic dependency ratios*).

dependents (people aged 65 and older) to every hundred population aged 15-64. Figure 4 illustrates the expected ODR values according to the three scenarios.

Figure 4. Simulated old-age dependency ratio for Russia, 2011–2036



Source: based on MIGRUS simulations (Kupiszewski, Kupiszewska 2014a)

The simulations performed within the framework of the MIGRUS project show that until 2031 the burden on the working age population is expected to increase regardless of the scenario. At the end of the observed period (2011–2036), ODR is going to further increase or slightly decrease – depending on the scenario. Although at first glance the modernisation scenario may seem to be the most desirable option for the country’s future (in comparison to the perspective of no changes or negative developments), the ODR calculation suggests that it may be relatively the least favourable in the short-medium run, when taking into account the age structure of the population. This phenomenon can be explained by the fact that the “Modernisation” scenario assumes generous funding to anti-alcohol and anti-tobacco campaigns and improvement in health services throughout the years, which should translate into decreasing mortality rates and higher life expectancy. The effect of declining mortality rates is expected to be so strong that neither an increase in fertility foreseen in this scenario nor an inflow of migrants attracted by the flourishing economy will be able to compensate for it in terms of ODR. Thus, from the perspective of future viability of the pension and social security system, in the short term a decrease in mortality poses an additional challenge for the state, which has to support old-age dependent groups. Moreover, in a short-term perspective the “Modernisation” scenario gives an even higher dependency ratio than other scenarios, when taking into account not only old but also young dependents, who will be more numerous due to higher fertility rates and lower mortality rates in younger age groups.¹¹ An increase in

¹¹ As Vishnevskiy et al. (2012) claim, population aging is initially caused by fertility decline (“aging from below”), while decline in mortality rates affects younger age groups first and thus contributes to an increase in fertility rates (as larger young cohorts survive childhood and have their own children), and only later leads to

young-age dependency means higher expenditures on education and additional expenditures on health care. Thus, in the short run, the “Modernisation” scenario seems less advantageous in terms of the size of future expenses, but of course it would prove more favourable for the country’s economic development in the long run.

The simulations show that Russia’s workforce is not only going to shrink but also age, which can be evidenced by the declining younger-to-older workers ratio (defined as the ratio of people aged 15–39 to 100 of those aged 40–64).¹² It was 108 in 2011 and it is expected to fall to about 80 in 2036. The simulated changes to the size of workforce in Russia can also be vividly presented as follows: in 2011, the ratio of people aged 60–64 years (those who leave the workforce) to persons aged 20–24 years (those who enter the labour market) was, on average, 7 to 10.¹³ The MIGRUS simulations foresee that this indicator will reach its peak in 2021, when there will be 15 people leaving the workforce as compared to 10 entering it. If no significant changes or negative changes are assumed, it will further fall to 9 and 10 respectively in 2036. The “Modernisation” scenario yields a slightly less favourable result with an indicator equal to one (and thus does not show any chance of labour force expansion).

Shrinkage of the relative size of the workforce coupled with its gradual aging will translate into a decline in economic capacity, a decrease in potential for high economic growth. This can be explained, *inter alia*, by age-specific variations in labour productivity, namely, the relatively poor health of older generations in Russia which lowers their labour productivity. This effect is expected to be particularly strong in the case of the NEG scenario, which assumes underfunding of health care and no funds for lifestyle programs. As McMorrow and Roeger (1999) argue, economic dependency burdens are much heavier in countries with low employment rates. It is understandable that high unemployment rates combined with low activity rates place additional burdens on the national budget in terms of current budgetary expenditures. In the case of Russia, the reported unemployment level is not very high and activity rates are not exceptionally low, but low activity rates among older age groups might constitute a problem and thus activation of these groups might be of key importance.¹⁴

The Russian pension system allows a relatively early official retirement age. The statutory age at which one becomes eligible for a pension in the RF is 60 for men and 55 for women, which is very low by international standards. Moreover, the minimum contribution record has so far been only 5 years, and many individuals (e.g., performing specific professions) have been entitled to retire even earlier (Eich et al. 2012). Demographic changes, particularly as simulated by the “Modernisation” scenario, which assumes an increase in the

aging due to growth in the elderly population resulting from an increase in life expectancy (“aging from above”).

¹² Thus, workers are actually approximated by all the people of certain age here, irrespective of whether they work indeed or not.

¹³ Again, it is an approximation, as MIGRUS results do not provide data enabling a more accurate calculation.

¹⁴ So far, the propensity to work among Russian pensioners is relatively high compared to other countries (Kolev, Pascal 2002).

average life expectancy, pose a challenge to the pension system. The question of its sustainability has been recognised in Russia and proposals to increase the pension age have already been raised (e.g. the *Strategy for Pension System Long-Term Development until 2050* has been elaborated).¹⁵ It may be expected that, provided that oil prices are high, there will not be much problem with the solvency of the pension system, because the potential deficit in the pension fund can be covered by revenue from oil and gas sales. However, a significant drop in prices of oil and gas which we have observed recently and which may last relatively long (International Monetary Fund 2015) can make this problem extremely severe. An official government prognosis foresees that the number of pensioners (that is, consumers) will equal the number of workers (that is, taxpayers) in 2030 (Maleva 2013). According to the pension system reform approved in the end of 2013, the minimum contribution will be raised to 15 years by 2025,¹⁶ which is evidence that the problem has finally been taken seriously by the Russian authorities. However, as regards the potential increase in pension age, some scholars find no grounds for such an extension unless there is a decline in mortality rates (Dmitriev et al. 2009; Vasin et al. 2010). Disregarding the ongoing dispute among scholars about whether the elderly indeed constitute a burden, specific features of the RF population have to be taken into account. Undoubtedly, an extension of the retirement age in Russia would require improvement of health services, addressed in particular to the elderly, and possibly would also require healthy lifestyle campaigns. Another important problem is the issue of employment among the ‘young elderly’, who are often incapable of finding a job despite trying. Therefore, there is a need for lifelong learning, which would increase their chances in the labour market.

¹⁵ In May 2016, a law was adopted increasing pension age for civil servants (see: <http://publication.pravo.gov.ru/Document/View/0001201605230052?index=0&rangeSize=1>, accessed: November 15, 2016). It is supposed to be gradually increased to reach 65 years for men and 63 for women by 2032.

¹⁶ www.rosmintrud.ru/docs/mintrud/pension/13, accessed: April 15, 2014.

2. Population changes – a focus on the ethnic dimension

2.1. Simulated changes in magnitudes and age structure of specific ethnic groups and their potential economic consequences

The simulated population changes by ethnicity show that differences in natural increase rates and net migration rates between ethnic groups are expected to lead to significant changes in the ethnic composition of the Russian Federation.¹⁷ Some of the ethnic groups are expected to fall on the rank list of the most numerous ethnic groups¹⁸ (Ukrainians, Chuvashes, Mordvinians, Udmurts, Maris, Ossetians and Belarusians); others, by contrast, are expected to rise (Armenians, Azeris, Dargins, Kumyks, Yakuts, Lezgins, Buryats and Ingush). Although Russians will not lose their status of the dominant ethnic group, their share in the population is expected to decrease from about 78% in 2011 to 73–74% in 2036 (depending on the scenario). Changes in the relative size of each ethnic group (especially in regions possessing relatively low percentages of Russians) may lead to changes in access to various goods, e.g., jobs. Thus, the distribution of resources among ethnic groups may change in the future, with Russians' dominant position gradually weakening.

In order to assess the potential impact of population changes on a country's economic development, demographic and socio-economic characteristics of individual ethnic groups have to be taken into account. As regards demographic characteristics, two aspects play a major role: first, age composition of ethnic groups (for age pyramids simulated for 2036 in the three MIGRUS scenarios, see Kupiszewski, Kupiszewska 2014a); and second, the question of whether an increase/decrease in their size is due to a natural increase/decrease or migration (the role of migration will be discussed in Section 3).

Unfortunately, simulations of population changes by ethnic group and by age do not allow us to draw sound conclusions as regards the impact of spatial differences in age structures on regional development in Russia. With a few exceptions, Russia's federal subjects are not ethnically homogeneous. Even in the republics named after their titular nations, the share of the indigenous peoples often amounts to less than 50% of the population,¹⁹ so inference about possible regional effects is hindered. The official data shows that the share of the population above working age is much higher in central regions. The further potential growth of interregional differences as regards age structure may constitute both a chance and a challenge to regional economies of the peripheral regions. A look from this perspective may provide interesting insight to the analysis of economic and

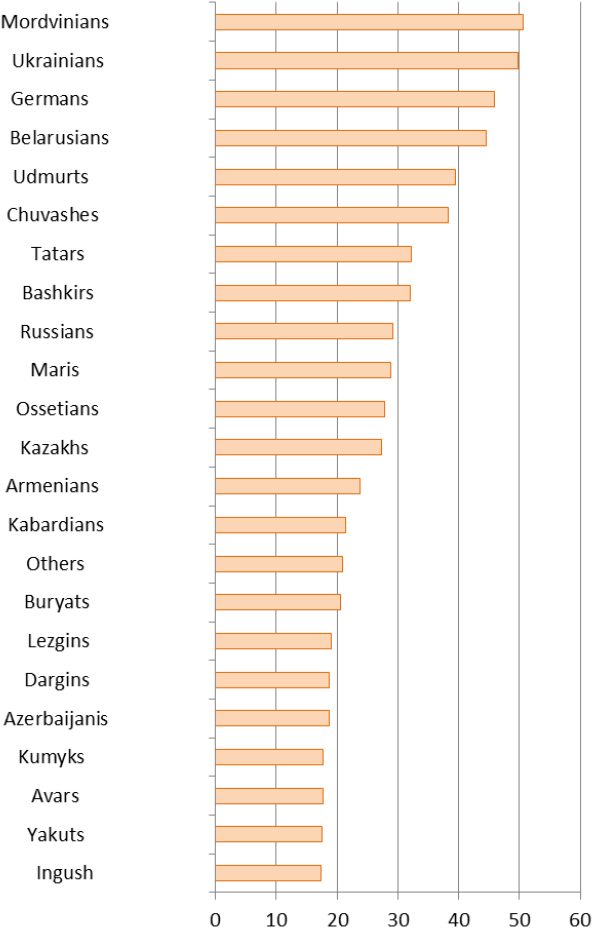
¹⁷ However, it has to be borne in mind that the ethnic composition of a population is influenced not only by mortality, fertility and migration, but also by changes to ethnic identity due to assimilation or acculturation. The identity factor primarily influences the size of the Russian ethnic group, as many individuals choose between their own minority group and the dominant group in the country (Vishnevskiy et al. 2004). Changes of ethnic self-identification were not taken into account in the simulations though.

¹⁸ As said before, Chechens were excluded from the list of the most numerous ethnic groups in the RF.

¹⁹ For example, according to the 2010 population census, it was 29% in the case of the Republic of Bashkortostan, in the Mari El Republic – 44%, in the Republic of Mordovia – 40% and in the Udmurt Republic – 30%.

developmental impacts of population changes. Figure 5 shows the simulated old-age dependency ratios by ethnic group in the NSC scenario.

Figure 5. Simulated old-age dependency ratios by ethnic group in 2036, according to NSC scenario



Source: based on MIGRUS simulations²⁰ (Kupiszewski, Kupiszewska 2014a)

In principle, it may be assumed that the age structure of an ethnic group expresses its potential – ‘younger’ ethnic groups have greater chances to contribute to the development of the region and a country than do ‘older’ groups. Since some ethnic groups are concentrated in particular regions and not spread evenly across the country, differences between ethnic groups may translate into uneven development of regions within Russia. However, the impact of age structure on the future development of a region should not be considered separately from its present level of development. The highest ODR values are expected to characterise Ukrainians, Germans, Belarusians and a few titular nations inhabiting republics located in the European part of Russia – i.e. Mordovia, Udmurtia, Chuvashia. The first three ethnic groups are scattered throughout a country, which effectively makes it impossible to draw any conclusions concerning regional development. As regards the republics listed above, on the

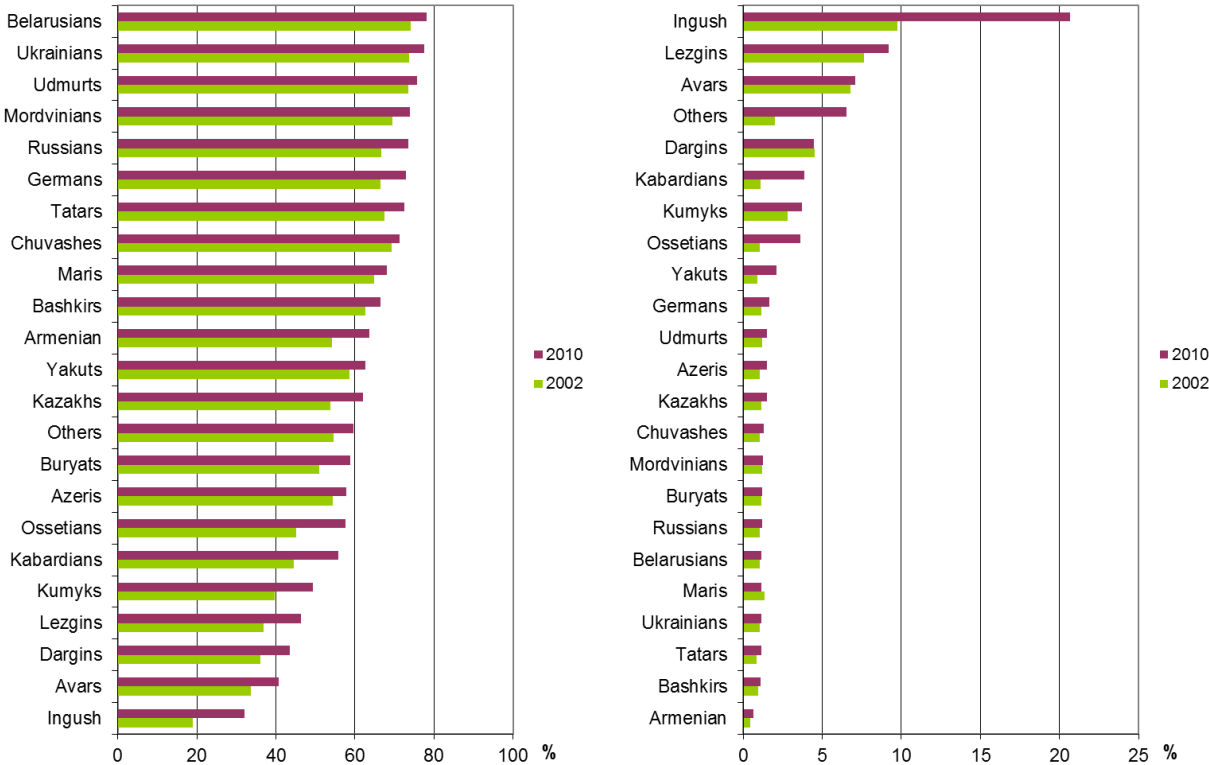
²⁰ The *Others* category in the MIGRUS simulations includes all ethnic groups living in the RF apart from the 22 most numerous groups and Chechens.

one hand, from the developmental point of view, a growing share of older people at the expense of the working age population may limit the developmental chances of these republics and thus may mean their further peripherisation. On the other hand, theoretically, a decline in the working age population may reduce competition on the labour market and thus limit actual unemployment rates. However, such an approach disregards the longer perspective and the fact that unemployment in the most depressive regions is often structural in nature and frequently coexists with vacancies (which shows that it is not only the lack of workplaces that matters, but also other defects of the labour market, e.g., the lack of flexibility and educational-occupational mismatch). The lowest ODR values (both at present and as simulated for the future) characterise Caucasian ethnic groups (Ingush, Avars, Kumyks, Dargins, Lezgins and Azeris) and representatives of northern subgroups of Mongols and Turkic people – Buryats and Yakuts. Low ODR values in regions inhabited by those groups mean relatively large working age populations, which in turn may mean developmental chances on the one hand, and enhanced competition on the local labour market on the other. Northern Caucasian republics are already struggling with the problem of superfluous labour force, which the deficient regional economy is unable to absorb. Furthermore, a higher share of the working age population in comparison to the average country level provides additional incentive for internal labour migration. Internal mobility of a population plays an important role, potentially altering the population age structure of both a sending and a receiving region. As mobility involves mainly representatives of the most active and usually younger generations, it may contribute to higher dependency ratios in sending and lower dependency ratios in receiving regions. Thus, the presence (and hard to predict future potential) of interregional mobility additionally hampers drawing conclusions about the potential impact of the simulated population changes on the economic development of individual regions.

2.2. The role of the current socio-economic characteristics of specific ethnic groups

Apart from age structure, individual ethnic groups in Russia differ in terms of socio-economic characteristics, e.g., economic activity. However, there are not many data sources enabling such comparisons. The Russian population census offers data on sources of livelihood by ethnicity.²¹ From the perspective of this analysis, what seems to be most interesting, are the share of people declaring work as one of their sources of income, and the percentage of unemployment benefit recipients (those who declared unemployment benefit as a source of income) among people of working age. The figure below depicts the percentage of residents of the Russian Federation of working age declaring work and/or unemployment benefit as a source of income by ethnic group according to the 2002 and 2010 population censuses.

Figure 6. Share of residents of the Russian Federation of working age who declared work (on the left) and unemployment benefit (on the right) among their sources of income, by ethnicity



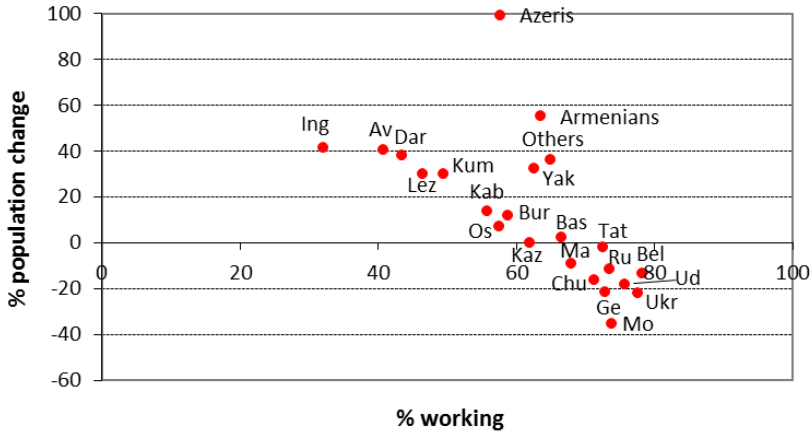
Source: based on 2002 and 2010 Russian National Population Census

Figure 6 shows that there are considerable differences between ethnic groups – with the Northern Caucasus ethnicities having the lowest share of workers and the highest share of unemployment benefit recipients. It has to be borne in mind, however, that low labour force participation in the case of the Northern Caucasian ethnicities may be attributed to a huge

²¹ This data is provided only for the most numerous ethnic groups (47 in the case of the 2010 population census and 42 in the case of the 2002 population census). Therefore, the *Others* category is narrowed here to 24/19 of the remaining most numerous ethnic groups – after subtracting the 22 most numerous and Chechens from the 47/42 groups, in the case of the 2010 and 2002 population censuses, respectively.

shadow economy in this region (Grebennikov 2013; Zubarevich 2011), while people may be reluctant to disclose their true labour market status to census officers. Without a simulation of the economic behaviour of the population, it is difficult to predict how the differences between ethnic groups will develop in the future. Under the assumption that they will persist, even partially, we can try to assess what impact they may have on the country’s future economic development when combined with simulated population changes. A correlation analysis shows that ethnic groups with a lower share of people who declared work and a higher share of those who declared receiving unemployment benefit (as shown in Figure 6, these are the same groups, as the two indicators are inversely linked) are expected to note the largest increase in their numbers. The correlation coefficient for the share of workers among population of working age as of 2010 and the simulated percentage change of the ethnic group size in the years 2011–2036 was -0.66 in the case of the “No significant changes” scenario ($p=0.001$), which provides evidence that there indeed is a negative relationship between these two variables. The analogous coefficient in the case of unemployment benefit recipients was not significant ($r=0.33$, $p=0.123$). The “Modernisation” scenario yields weaker or no association ($r=-0.56$, $p=0.006$ and $r=0.25$, $p=0.247$ respectively), while the scenario assuming negative political and economic developments brings stronger relationship ($r=-0.74$, $p<0.001$ and $r=0.40$, $p=0.062$ respectively). Figure 7 plots simulated population changes in 2011–2036 against the share of people of working age declaring work as a source of income in 2010 by ethnic group.

Figure 7. Share of people of working age declaring work as a source of income in 2010 vs. simulated percentage population change in 2011–2036, NSC scenario



Legend: Av – Avars Ing – Ingush Yak – Yakuts Dar – Dargins Kum – Kumyks
 Lez – Lezgins Kab – Kabardians Os – Ossetians Bas – Bashkirs Tat – Tatars
 Bur – Buryats Kaz – Kazakhs Chu – Chuvashes Ud – Udmurts Ukr – Ukrainians
 Ma – Maris Ru – Russians Ge – Germans Bel – Belarusians Mo – Mordvinians.

Source: own elaboration based on MIGRUS simulations (Kupiszewski, Kupiszewska 2014a) and 2010 Russian National Population Census

The above chart shows that two ethnic groups – Azeris and Armenians – can be perceived as outliers, as they exhibit relatively high positive population change rates while also having relatively high shares of those who declared work among their sources of income. The

exclusion of these two groups results in a stronger relationship (e.g., in the “No significant changes” scenario, the correlation coefficient for work is $-.86$, $p < .001$, while for unemployment benefit it amounts to $.58$, $p = .005$).

This analysis demonstrates that the share of ethnic groups less active (possibly in the formal labour market) would grow at the expense of the more ‘active groups’. Hence, the conclusion is that unless the most backward (in terms of their official activity in the labour market) groups catch up with the ‘more active’ ones, simulated population changes may have a negative impact on the overall labour force participation in the formal workforce in the RF and consequently on tax revenues. Hence, in order to mitigate the potential negative consequences, the state should concentrate its efforts on creating conditions which would encourage inhabitants of those regions to leave the shadow economy and legalise their incomes. Considering a short-medium term influence of a potential increase in labour force activity over time, it has to be borne in mind that under the PAYG scheme, despite its initial positive effect in terms of lowered costs due to reduced dependency ratios, eventually it means higher benefits to retired workers than to their non-working dependants (Nyce, Schieber 2005).

3. The role of migration

Since 1992, Russia has noted a natural population decrease, the most severe in 1999–2002, when it exceeded 900 thousand a year. If it had not been for positive net migration (which has amounted to over 8 million since 1992), the country's population would have decreased by over 13 million in 1992–2012 (*Demographic Yearbook of Russia* 2013). Hence, it can be said that migration compensated for about 60% of the natural decrease and thus alleviated its negative impact on the economy. The MIGRUS simulations estimate the future role of migration to vary in this respect, depending on the scenario. According to the “Modernisation” scenario, net migration of 9.2 million in years 2011–2036 will succeed in fully offsetting the natural decrease. In the case of the “No significant changes” scenario, a predicted migration balance of 7.3 million will manage to compensate for about a half of the decrease. Assuming negative political and economic developments, a predicted net migration of 5.3 million will cover only 25% of the population decline. Such estimates result from both a larger natural decrease and a smaller net migration, provided that negative political and economic changes occur. It has to be borne in mind, however, that, among components of the population change, migration flows are the most difficult to predict.

When considering the economic and developmental impact of the simulated population changes, important are differences between migrants and local residents in terms of their demographic and socio-economic characteristics. Thus, a marginal change in population size (thanks to migration offsetting natural decrease) may mean significant changes to its socio-economic characteristics. First of all, migrants are, on average, younger than the receiving state's population (Biryukova 2012).²² Furthermore, they are, on average, characterised by a higher degree of entrepreneurship than an average Russian – according to a 2012 Global Entrepreneurship Monitor (GEM) study, the percentage of migrants attempting to open their own business in Russia was twice as high as the percentage of non-migrants doing so (Verkhovskaya, Dorokhina 2013). Moreover, migrants often hold jobs unwillingly performed by local populations (Iontsev, Ivakhnyuk 2012). This concerns low-skilled and low-paid jobs, also those involving harmful working conditions. Some sectors of the labour market in Russia are already migrant-dependent to a large extent, in particular, construction, trade and cleaning services (*ibid.*). Taking into account the simulated negative natural increase, immigration seems to be the last resort to secure stable growth in the GDP. However, as numerous studies show, migrants often perform irregular work, not rarely below their qualifications (see e.g. Mukomel' 2013a; 2013b; Varshavskaya 2013). Mukomel (2013b)

²² To prove this, one can additionally compare the age composition of the RF population as presented by Rosstat and e.g. the results of the 2011 study conducted by the National Research University "Higher School of Economics" (NRU HSE) and the Center for Ethnopolitical and Regional Studies (CERS) (the NRU HSE-CERS study). For the age composition of the 8,499 migrants surveyed, see e.g. Denisenko, Varshavskaya 2013, p. 4, tab. 2.

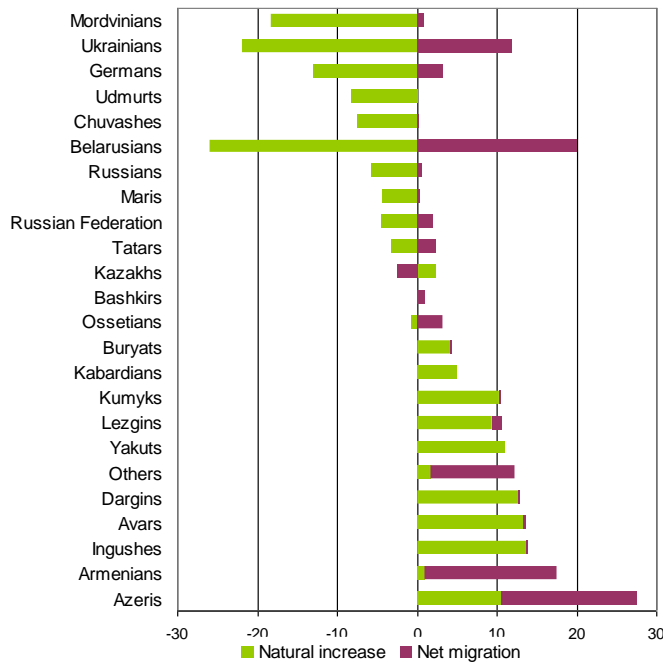
estimates that over 60% of all migrant workers²³ engage in irregular work. The NRU HSE-CERS study shows that about half of migrants in Russia are employed in positions not requiring any qualifications and that this also concerns 1/3 of migrants possessing higher or incomplete higher education (*ibid.*). Furthermore, migration is often accompanied by ethnic professional specialisation and formation of ethnic businesses. This leads to the creation of migrant niches (Kuznetsov and Mukomel' 2007), e.g., Azeris are believed to have almost monopolised the fruits and vegetables trade in Russia, in particular in Moscow, and may limit freedom of competition on the labour market as it often involves hiring only ethnic compatriots of the business owner. Consequently, the economic integration of migrants is often a challenge, especially since local population is sceptical about perspectives of migrant integration and some migrants do not seek adaptation either (Mukomel' 2011). Despite the drawbacks mentioned above, migration still plays mainly a positive role, mitigating the consequences of demographic crisis and filling labour market shortages.

Tyuryukanova (2007) claims that, taking into account the projected growth in demand for highly skilled workers, it can be expected that 'elite migration' will develop in Russia on a larger scale in the future. Attraction of highly skilled migrants is one of the main objectives of the *State Migration Policy Concept of the RF until 2025*, adopted in 2012. However, Russia may encounter problems with encouraging highly skilled professionals to come to Russia unless a profound modernisation takes place.

Given the selective nature of migration, it is worth looking at the most numerous ethnic groups living in Russia from the perspective of components of population change. The figure below presents the two population change components – natural increase and net migration. Ethnic groups are ranked according to average annual population change rate as predicted in the NSC scenario.

²³ Varshavskaya (2013) quotes the 2011 Russia Longitudinal Monitoring Survey of Higher School of Economics (RLMS-HSE) according to which 6% of Russian corporate sector workers do not have formalised work, while in the case of foreign workers the percentage reaches 58%. However, it has to be borne in mind that the RLMS-HSE underestimates the number of migrants; in particular, it does not usually reach irregular migrants and temporary migrants. The results of the Labour Force Survey (LFS) confirm this relationship – in 2012, 45% of foreign citizens worked in the informal sector, while the respective share for the local population was 19%.

Figure 8. Components of population change – average annual natural increase and net migration rates, NSC scenario



Source: MIGRUS simulations (Kupiszewski, Kupiszewska 2014a)

Based on Figure 8, the most numerous ethnic groups in Russia can be divided into classes depending on whether they owe the simulated growth/decline in their numbers to migration or to natural increase/decrease. Such an approach allows us to distinguish four main types:

- 1) ethnic groups that are expected to note both positive net migration and natural increase, formed by Azeris, Armenians, Lezgins and *Others*;
- 2) groups expected to have net migration equal (or almost equal) to zero, and positive natural increase, comprising Ingush, Avars, Dargins, Buryats, Kumyks, Kabardians and Yakuts;
- 3) groups expected to encounter positive net migration and natural decrease, including Belarusians, Ukrainians, Germans, Tatars, Mordvinians and Russians;
- 4) groups expected to note migration rates equal (or almost equal) to zero and natural decrease, formed by Udmurts, Chuvashes and Maris.

Importantly, the first two groups are expected to note positive annual population change rates, while the latter two, on the contrary, are expected to shrink. Moreover, assuming the other two scenarios, we would obtain similar typologies. The main difference in the case of the NEG scenario consists in Germans having a negative in place of a positive net migration rate, while the main difference when considering the “Modernisation” scenario lies in the fact that Belarusians and Tatars are expected to have positive population change rates.

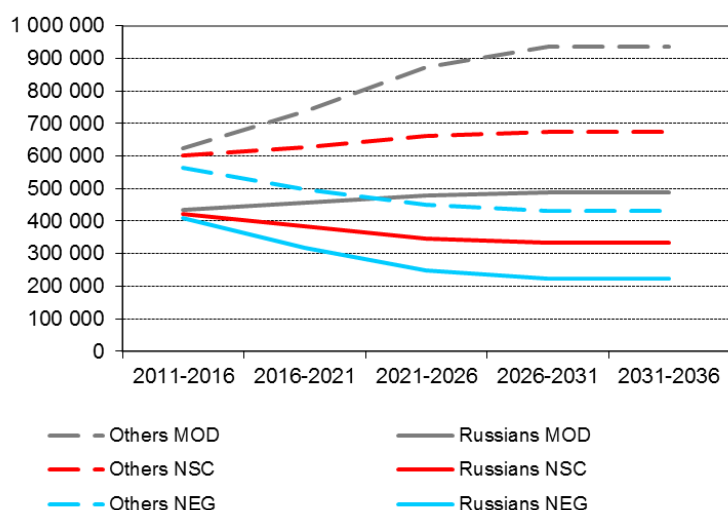
The ‘stationary’ ethnic groups as regards migration, i.e. groups 2) and 4), are less interesting than the ‘migratory’ groups when developmental impacts of population changes are considered. Figures 7 and 8 presented in Section 2.2 showed that according to the last population censuses, ethnic groups inhabiting the Northern Caucasus republics (Ingush, Avars, Dargins, Lezgins, Kumyks and Kabardians) seem to be the least active on the (possibly formal) labour market. It has been shown that all of them are expected to have the largest positive population change rates. What is worth noticing here is that they all owe their expected increase to positive natural increase rates, whereas for example Armenians, whose simulated increase is, conversely, attributed to positive net migration rates, show higher labour market activity. This mechanism is additionally evidenced by the example of the other two ‘most migratory’ ethnic groups: Ukrainians and Belarusians, who are among the top economically active groups (economic activity is measured here again by percentage of people of working age declaring work/unemployment benefit as sources of income). These patterns may indicate that international migration (thanks to its positive selectivity in terms of economic activity) may increase the level of economic activity among ethnic groups at destination.

More evidence is provided by existing studies. Differences between various ‘migratory’ ethnic groups also manifest in their propensity for irregular work. Lehmann and Zaiceva (2013) draw a conclusion from the RLMS-HSE claiming that only immigrants from the Caucasus and Central Asia have a higher probability than the local population of being employed informally, while other immigrant groups do not tend to differ from the local population in this respect. Moreover, as said before, different ethnic groups tend to occupy specific niches in the labour market. Although both Caucasus and Eastern European migrants mainly hold jobs in trade, consumer services, construction, and transportation,²⁴ Eastern European migrants more often have jobs requiring higher skills, e.g., as engineers or managers (Savoskul 2011).

The future international migrations of the most ‘migratory’ ethnic groups differ heavily depending on the scenario, but by each of the scenarios the *Others* and Russians categories clearly stand out in terms of magnitude of simulated net migration. They are expected to account for about 44–45% and about 25–27% of total net migration in 2011–2036, respectively. Given that fact, it is worth taking a closer look at these groups.

²⁴ Migrants from Eastern Europe additionally work in domestic services.

Figure 9. Simulated net migration for Russians and *Others* according to different scenarios



Source: based on MIGRUS simulations (Kupiszewski, Kupiszewska 2014a)

The *Others* group exceeds the Russian ethnic group in terms of simulated net migration in each scenario (see Figure 9). It consists of three subgroups, two of which seem especially interesting in light of the current debate on immigration in Russia: the Chinese (coupled here with North Koreans and Vietnamese) and Central Asian ethnicities. Given their frequent irregular work status, there are not many studies shedding light on their labour market characteristics enabling an assessment of the impact that their presence might have on the labour market. One such study was a household survey conducted by the World Bank in 2007 and 2009 in Tajikistan. Lokshin and Chernina (2013) quote its results saying that migrants from Tajikistan earn considerably less than the local population in Russia (about 40% less), the majority of them (60%) choose Moscow as their destination,²⁵ and 80% of them send home remittances that usually amount to about 60% of their earnings. These facts are often interpreted by opponents of liberal migration policies in terms of a possible negative influence on Russia's economic development. Proponents of stricter admission rules usually claim that an increase in the number of underpaid migrants in the labour market would lead to decreasing wages for the local population and that migrants spend almost no money in Russia, remitting it all to their home countries. These statements are not necessarily true. Firstly, lower wages for migrants do not have to mean a decline in earnings for the local population, as the labour market is highly segmented, with migrants occupying mainly positions on the secondary labour market and usually not competing with the local population. Secondly, numbers quoted by Lokshin and Chernina actually mean that over 50% of total earnings of all Tajik migrants is in fact spent in Russia. The World Bank study also overturns another myth concerning migrants from Tajikistan – that they do not speak Russian. It says that 85% of

²⁵ The domination of Moscow is not restricted to Tajiks – according to official data on work permits, 29% of all work permit holders in 2014 chose Moscow and the Moscow region as their destination (*Trud...* 2015).

them do speak Russian.²⁶ What may indeed have a negative impact on Russia's economic development is the unequal distribution of migrants throughout the country, which additionally deepens the uneven development of regions, and their high propensity for performing irregular work.

As far as migrants of Russian ethnicity are concerned, Lazareva (2012), basing on the RLMS-HSE results and official statistical data, claims that their inflow has a negative effect on employment of the local population but not on wages. She argues that the employment effect is caused by the fact that they "are close substitutes to the local labour force" (p. 4) due to common language and similar educational background and thus their migration resembles interregional mobility within Russia. However, in her earlier work Lazareva (2008) claimed that migrants of Russian ethnicity, similarly to other migrant ethnicities, fill regional labour market niches that are filled by neither the local labour force nor by internal migrants and thus compete mainly with other international migrants.

The general conclusion seems to be that international migration is expected to bring more good than harm to the economic development of the Russian Federation. The authorities appear to be gradually acknowledging this fact, as evidenced in recent policy papers, e.g. the *State Migration Policy Concept of the RF until 2025*, adopted in 2012.

Summary and conclusions

The Russian Federation has noted a population decline in the last two decades and faces the risk of further depopulation over the next two decades. Although a population decline is not inevitable (in the "Modernisation" scenario the population is expected to increase by 1%), regardless of the scenario, the population of Russia is going to age. Population aging implies shrinkage of the share of the working age population, which directly affects the country's economic situation because it requires higher public expenditures on the social security system, including the pension system, and entails higher demand for health care resources. A higher old-age dependency ratio (which is going to grow continuously until 2031 regardless of the scenario) means an increased burden on younger generations in terms of intergenerational transfers, on both the state and private levels. Moreover, due to age specific variations in labour productivity (with older workers associated with lower output), the aging of the workforce may limit the potential for high economic growth.

Simulated changes to the ethnic composition of the RF population, coupled with differences in demographic and socio-economic characteristics between ethnic groups, are also not without significance. On the one hand, from the developmental point of view, a growing share of older people at the expense of younger generations in the case of ethnic groups inhabiting certain regions (e.g. Mordovia, Udmurtia and Chuvashia) may limit

²⁶ However, their level of proficiency is possibly questionable.

developmental chances of these regions and lead to their further peripherisation (assuming lower productivity levels of ‘older’ ethnic groups). On the other hand, a growing size of the working age population in Northern Caucasian republics may enhance competition on the Northern Caucasian labour markets, which are already now struggling with superfluous workforce that the local economy is unable to absorb.

A look at the present characteristics of the most numerous ethnic groups in Russia allows us to draw conclusions regarding the expected impact of the simulated population changes on the country’s development. Taking into account the differences between ethnic groups as regards their labour market activity (measured by the share of people of working age declaring work as one of their sources of income), the analysis has shown that the ethnic groups with lower labour force participation (probably in the formal workforce) are expected to note the largest increase in their numbers. Thus, it can be concluded that unless the most backward groups (in terms of economic activity) make up for their ‘backwardness’, the simulated population changes may have a negative impact on the overall official labour market activity in the RF and consequently on total tax revenues.

Despite having certain drawbacks (migrants often perform irregular work, not rarely below their qualifications, tend to form migrant niches in the labour market, etc.), migration’s beneficial influence on the country’s economic development seems to have finally been acknowledged in Russia. Not only does international migration enable mitigation of the consequences of demographic crisis and fill labour market shortages, but migrants also hold jobs unwillingly performed by the local population and have, on average, a higher degree of entrepreneurship than do representatives of the local community, which makes them the last resort to secure stable economic growth in Russia in the coming years.

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