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# **Population Estimates of the Second Generation of Migrants in Russia and Western Countries**

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## POPULATION ESTIMATES OF THE SECOND GENERATION OF MIGRANTS IN RUSSIA AND WESTERN COUNTRIES.

### **Abstract.**

The article examines the issue of the statistical classification of a second generation of migrants as a category of population statistics. The descendants of migrants represent a substantial proportion of the population in numerous countries, yet they are simultaneously a demographic group facing considerable socio-economic challenges. The introduction of this category into national statistical systems enables the direct estimation of the number of second-generation migrant contingents in a number of Western countries.

The study presents a critical analysis of the existing Russian sources of demographic data, which lack the necessary specialized classifications for the direct identification of second-generation migrants, thereby making it challenging to ascertain their numbers with a reasonable degree of accuracy. As an alternative approach, this paper employs cohort-component analysis to model the number of second-generation migrants born in Russia between 2001 and 2020. The model results indicate that the size of this group is approximately 1 million individuals. The findings underscore the necessity for enhancements to existing statistical methodologies in Russia.

This article is an output of a research project implemented as part of the Basic Research Program at the National Research University Higher School of Economics (HSE University).

**Keywords:** descendants of migrants, statistical category, migrants in the Russian Federation, migrants from CIS countries and Georgia, current fertility statistics, population modelling, cohort-component analysis.

## Introduction.

The second generation of migrants is a special category of statistics in many countries receiving large numbers of migrants. In a number of Western countries, the second generation accounts for more than 10% of the total population (Table 1), and this share continues to grow. According to Eurostat data for 2023, there are more than 21 million members of the second generation of working age (15-64 years) living in the European Union, which is 7.5% of the total EU population of the corresponding age group; over the last two years, the number of adults belonging to the second generation has increased by 4%.

Table 1. Number of second generation migrants in selected countries.

Country	Data source	Assessment Year.	Number of the second generation, mln.	Share of the country's population.
Austria	Labor force microcensus	2022	0,6	7,0%
Belgium	Population Register	2022	2,0	16,4%
Germany	Microcensus	2022	8,6	10,4%
Denmark	Population Register	2022	0,2	3,5%
Canada	Census	2021	6,4	16,8%
Netherlands	Register Population	2021	2,0	11,4%
France	Labor force survey	2021	7,4	10,9%
Estonia	Population Register	2021	0,1	7,7%

Sources: Austria: Statistik Austria 2024; Belgium: Statbel 2024; Germany: Statistisches Bundesamt (Destatis) 2022; Denmark: Statistics Denmark 2024; Canada: Statistics Canada 2016; Netherlands: Statistics Netherlands 2021; France: INSEE 2023; Estonia: Statistics Estonia 2021.

The second generation of migrants plays an increasingly important role in demographic, socio-economic processes; moreover, narratives about migrants and their descendants form the basis of political mobilization in many European countries, and the second generation itself is also an increasingly prominent part of the electorate. In this context, the importance of not only a realistic socio-economic and political portrait of the heterogeneous second generation, but also an understanding of the size of its constituencies cannot be overemphasized.

Russia is among the world leaders in the number of international migrants, with a significant share of migrants planning to stay in Russia permanently (Denisenko and Mukomel 2020). This means that contingents of both first and second generation migrants are accumulating in the Russian population. However, the second generation is not identified as a special category by

statistical records, and therefore its number cannot be established on the basis of direct observations, as it is done by statistical services of a number of European countries.

This paper provides an overview of statistical sources that can be used to estimate the number of the second generation of migrants, as well as an attempt to model the number of this group in Russia on the basis of cohort-component analysis.

This work is an output of a research project implemented as part of the Basic Research Program at the National Research University Higher School of Economics (HSE University).

### **The category "second generation of migrants" in national statistical systems in Europe.**

The term "second generation of migrants" within academic discourse can describe different populations, depending on the scope of application, the research task and the availability of sources (Denisenko et al. 2022).

In population statistics, the term has a stricter meaning, excluding those descendants of migrants who have their own migration experience, regardless of the age at which it was acquired. Attributing an individual as a second-generation individual requires a combination of two criteria: 1. She/he is a native of the host country (native-born) 2. One or both of her/his parents are migrants. In particular, the term "second generation" is used in Eurostat publications (Eurostat 2011; Huddleston et al. 2013).

At the same time, peculiarities of migration history of different countries bring differences in the definition of the second generation in national statistical systems. Even within the national statistical systems of the European Union there are variations in the definition of the second generation. In particular, the approaches to the descendants of mixed couples in which one of the parents is a local native also differ. As a rule, the statistics of European countries distinguish the category of persons of mixed descent as a special population, but consider them as part of the second generation (as follows from the Eurostat definition and as recommended, in particular, by the United Nations Economic Commission for Europe - the United Nations Economic Commission for Europe - (UNECE 2015) ). Despite its almost universal use, the inclusion of the offspring of mixed couples in the second generation has been criticized because it assumes that the migration experience of one parent is more important than the lack thereof of the other parent. In the practices of some countries (e.g. Austria), mixed descent excludes an individual from the population of individuals with a migration background (Will 2019). This distinction is very significant for comparing the contribution of the second generation to the total population, as more than half of all migrant offspring in the EU are born to couples with different migration statuses (Table 2).

A further nuance that distinguishes second-generation definitions is the procedure for determining the country of origin of a migrant offspring in cases where the father and mother hail from disparate countries. Thus, the Austrian statistical system prioritizes the mother's country of origin, while the Belgian system prioritizes the father's country of first citizenship (Statistik Austria 2024, Statbel 2024).

One of the key differences is whether or not the nationality of the parent is included as one of the criteria. The United Nations Economic Commission for Europe's recommendations for the 2020 round of population censuses provide for the joint recording of the attributes of the parent's country of birth and the parent's nationality to identify the second generation, but in different national traditions the migration status of a parent may be recognized solely on the basis of his/her place of birth (France), whether he/she has the nationality of the host country and how it was acquired (Belgium), or a combination of these attributes (Germany) (UNECE, 2015, p. 137). The use of three variables at once ("country of birth", "country of birth of the parent", "country of first citizenship of the parent") allows minimizing the distortion of the second generation due to return migration. Thus, in the case of Germany, the exclusion of the descendants of repatriates (meaning not late immigrants, but primarily persons displaced during World War II) is realized by including the attribute of parents' citizenship at birth in the definition of migration background. Persons with a migration background do not include the descendants of parents born abroad but with German citizenship at birth (Statistisches Bundesamt (Destatis)) 2022).

### **Sources of second-generation abundance data.**

In world practice, the main sources of data for estimating the number of the second generation are censuses and population registers, as well as microcensuses and large-scale sample surveys; the total number is calculated by extrapolation.

Population censuses, microcensuses and sample surveys. In Russian censuses, as in most countries, migration status is identified through a question on the respondent's place of birth. According to UNECE recommendations (2015), this attribute has the status of the main attribute, while the place of birth of parents is an additional attribute, and the collection of data on the place of birth of parents is recommended only for countries with a large number of immigrants living there. When the question on parents' place of birth is missing from the questionnaire, census data can trace migrant offspring only if they live in the same household as their parents. The significant undercounting of the second-generation migrant population in such a count is illustrated by the experience of Germany, which has been conducting a parallel

count of the second generation in the "narrow" and "broad" sense as part of the annual microcensus since 2017 (as well as in 2005, 2009, 2013). The first category corresponds to the number of descendants of migrants living together with their parents, the second one - regardless of household composition. The difference in the number of these categories for 2021 amounted to 1.4 million people (Statistisches Bundesamt (Destatis), 2022).

A question on parental origin is included in the expanded census or survey program, for part of the sample. In the 2021 Canadian census, questions on the place of birth and citizenship of parents were included in the expanded census form for 25% of the sample. In the U.S., questions about parental origins are asked in the U.S. Census Bureau's Current Population Survey (CPS), also in an expanded program for a portion of the sample (Denisenko et al. 2022).. Germany's annual microcensus covers 1% of the population, Austria's 0.6%.

From 2021, the large-scale European Union Labor Force Survey (EU-LFS) permanently includes questions on the country of birth of the mother and father (with the exception of countries with small numbers of migrants - Bulgaria, Malta, Romania and Slovakia). However, although the survey collects demographic information on all household members, most of the data collected are for the adult population only, and therefore the extrapolated second-generation population estimates published by Eurostat are constructed only for persons aged 15 to 74.

It should be noted that despite the international nature of the survey, the data on contingents are not fully comparable - for example, due to the specific approach of German statistics to defining the population that can be attributed to the second generation of migrants, in the Eurostat labor force survey the second generation criterion was not the country of birth (as in the case of other member states), but the nationality of the parents (European Commission. Eurostat, 2011).

Table 2. Adult population (15 - 65 years) of selected countries by immigration status (Eurostat, LFS, 2022).

Country	Share of the second generation in the population (1 or 2 parents are migrants)	Proportion of offspring from mixed parental pairs (only one of the parents has migration experience) from the second generation.
EC-27	7,4%	57,3%
Belgium	13,0%	59,6%
Czech Republic	3,9%	75,8%
Denmark	5,9%	63,7%

Germany	12,8%	52,5%
Estonia	19,6%	55,1%
Ireland	6,4%	51,7%
Greece	3,1%	54,0%
Spain	3,2%	65,2%
France	12,7%	53,9%
Croatia	10,5%	67,3%
Italy	3,1%	66,8%
Cyprus	5,6%	76,3%
Latvia	21,0%	59,2%
Lithuania	4,1%	76,0%
Luxembourg	18,4%	40,9%
Hungary	1,5%	71,8%
Netherlands	12,8%	57,3%
Austria	10,8%	51,7%
Poland	1,4%	72,7%
Portugal	5,6%	81,4%
Slovenia	10,4%	66,4%
Finland	2,8%	79,1%
Sweden	11,4%	64,2%
Iceland	4,5%	90,7%
Norway	7,1%	72,3%
Switzerland	18,8%	54,6%

Source: compiled by the author according to Eurostat data. Population by sex, age, migration status, country of birth and country of birth of parents.

Population registers. Population registers are the main sources of data on the second generation of migrants in countries where they are successfully maintained (e.g. Denmark, Sweden and Belgium). Registers are considered to contain accurate and up-to-date information because the provision of access to social services and benefits is done through the register; accordingly, in addition to the obligation to report up-to-date information (in particular on movements), the population has an incentive to do so. Since family records are linked in registers, second and third generations of immigrants can be identified by the country of origin of parents and grandparents. Information on citizenship is also available, but this attribute does not identify immigrants and their descendants because if a person acquires Swedish citizenship, only it is recorded; other citizenships (if any) are ignored (Careja and Bevelander 2018). Registers as a source of data on socio-economic characteristics and the number of descendants of migrants have several undeniable advantages: coverage of the general population; prompt updating of data; and the possibility of longitudinal analysis in the absence of the problem of sample fudging. In terms of estimating the size of the first-generation migrant population, registers have some disadvantages (inclusion of immigrants in the register after a considerable

time after arrival; undercounting of departing migrants), but these factors do not affect the estimation of the second-generation population (Careja and Bevelander 2018).

**Current fertility records as a source of data on the number of second-generation migrants in Russia.**

Until 2010, the development of birth statistics was based on the nationality (ethnicity) of parents. This approach to recording does not allow to reliably identify the contingent of migrant parents, as it leads to an unjustified expansion of the migrant population at the expense of peoples, mostly settled abroad, but with a multi-generational history of residence in Russia (Germans, Assyrians, Greeks, etc.). An even more serious limitation is the completeness of registration: according to 2010 data, more than half of fathers and mothers did not report their ethnicity; at the same time, it cannot be expected that the population of persons who did not name their nationality is distributed by this characteristic in proportion to the population of those who did and thus does not distort the overall picture.

**Table 3: Proportion of parents whose ethnicity was unknown when registering the child's birth (for selected years).**

Percentage of parents	2000	2006	2010
Mothers	10%	48%	56%
Fathers	16%	54%	61%

Source: author's calculation based on Rosstat data.

Since 2011, Rosstat (the Federal State Statistics Service of Russia) has been collecting data on the citizenship of parents as part of the current birth registration. The change in methodology has had a positive impact on the completeness of the record (although the share of births for which the nationality of one or both parents - primarily the father - is unknown is quite high), on the possibility of analyzing dynamics and cross-country comparisons. However, foreigners and migrants cannot be considered identical.

In addition, the current record collects information on the place of birth of parents. This feature allows for the direct identification of migrants. These data are limited by the lack of information on the time of migration; this does not allow distinguishing between those who changed their place of residence during the Soviet period, those who came to Russia as repatriates and those who came to Russia as labor migrants. Data on place of birth are also incomplete: in some years up to 20% of fathers and up to 10% of mothers lack information on their place of birth.



Foreign-born population (2011-2022). A total of 20.3 million births were registered between 2011 and 2022; of this number, 513,000 children (2.6%) were born to foreign-born mothers. The annual absolute number of live births to foreign mothers during this period ranged from 30,000 to 54,000. The annual contribution of foreign women to total births over the entire period increased from 1.7% (2011) to 3.8% (2022).

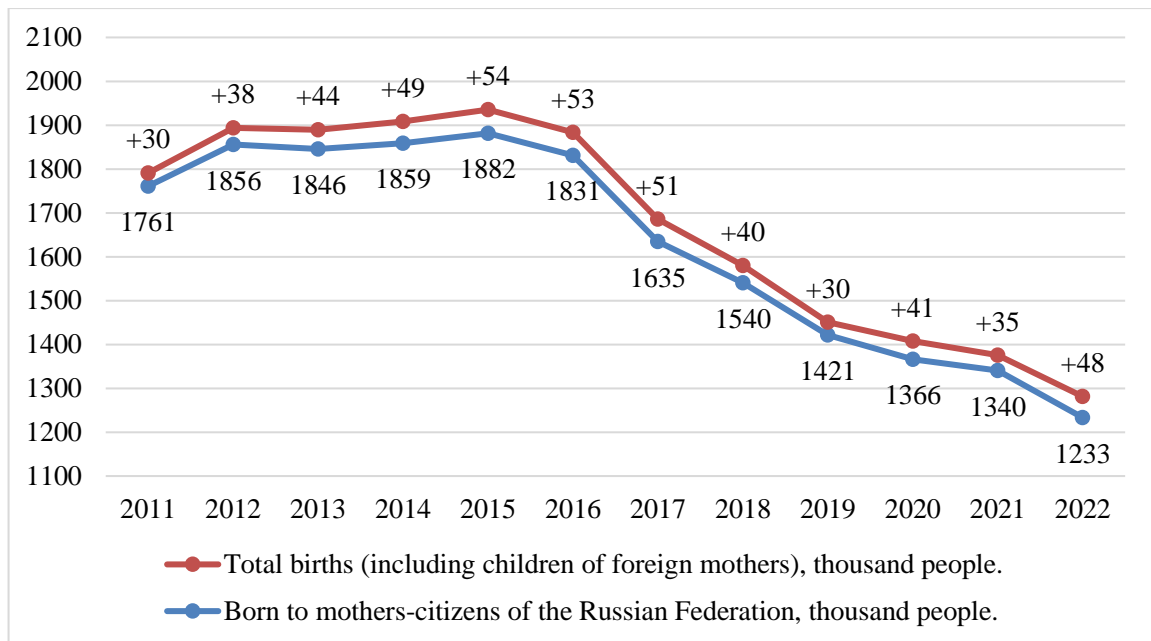


Fig. 1. Dynamics of the number of newborns in Russia, by mother's Russian citizenship.

Data source: Rosstat.

There are 480,000 births to foreign fathers, or 2.7% of all births for which the nationality of the father is known. The absolute number of children born to foreign men is underestimated because statistics do not have data on the nationality of between 10 and 13% of fathers each year; for this reason, it is difficult to judge the contribution of foreign men to total fertility. In addition, for 123,000 live births registered between 2011 and 2022, the nationality of both parents has not been established. Since a large number of live births cannot be attributed due to incomplete data on citizenship (and they significantly distort the real picture), these cases are singled out as a special category.

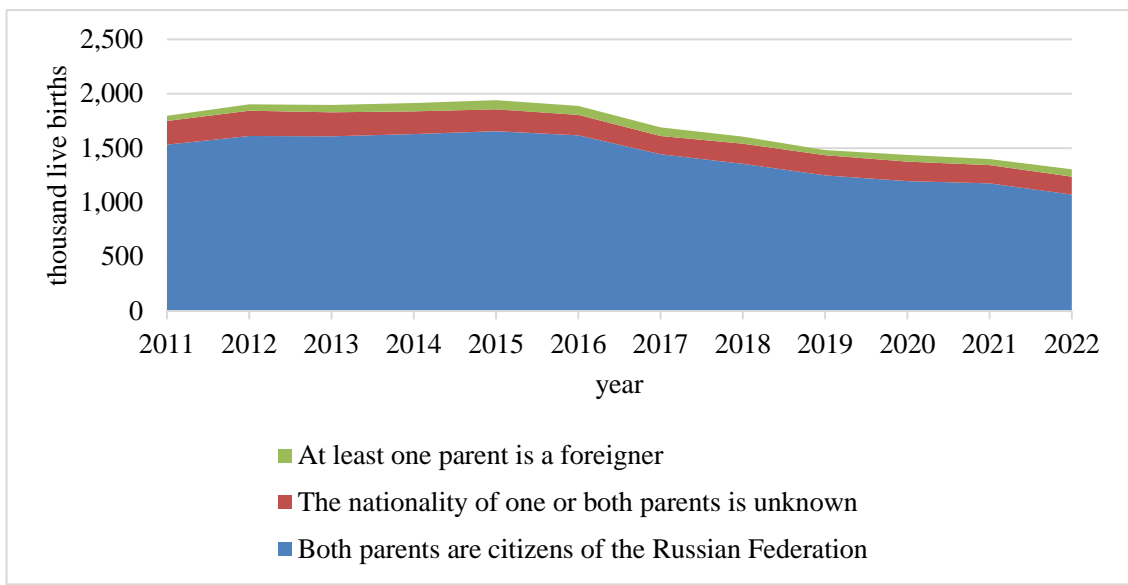


Fig. 2. Number of live births by parental foreign citizenship (thousands). Data source: Rosstat.

Cumulatively, between 2011 and 2022, 203,000 children were registered as having both parents who were foreigners at the time of birth (1% of all births), and almost 783,000 children were born to couples in which at least one parent was foreign at the time of birth (3.8% of all births). The share of births in which at least one parent was a foreigner increased from 3% in 2011 to 5.9% in 2022, but this increase cannot be called sustainable since 2017.

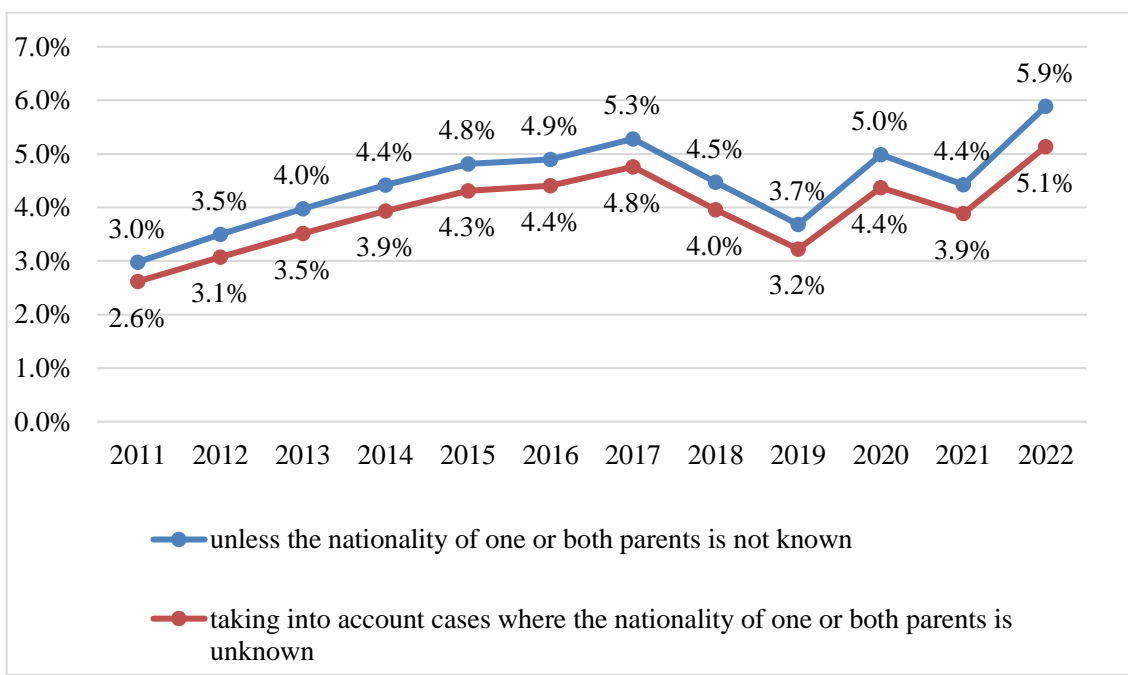


Fig. 3. Proportion of births with at least one parent who is a foreigner. Data source: Rosstat.

Parental couples in which only one of the parents is a foreigner are numerically significantly larger than those in which both parents do not have Russian citizenship: considering only those parental couples whose citizenship is known, 28% of them are homogeneous (foreign) and 72% are mixed. The latter are distributed by the composition of the parental couple as follows: 47% - only mothers are citizens of a foreign country, 53% - only fathers. It is important to note that the mixed nature of parental couples does not exclude the possible presence of migration experience of both parents, as statistics does not contain information on how citizenship was acquired (by birth or through naturalization).

It should also be noted that in 4% of cases statistics has information about the foreign citizenship of one of the parents, while the citizenship of the other parent is unknown (mainly the father).

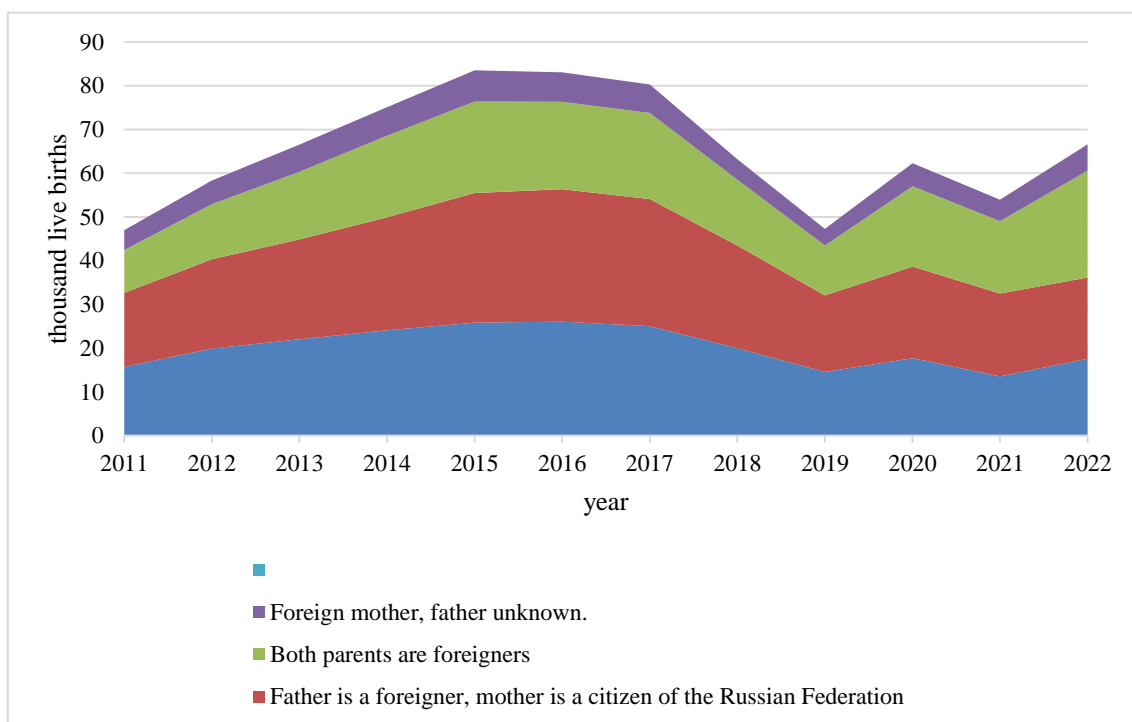


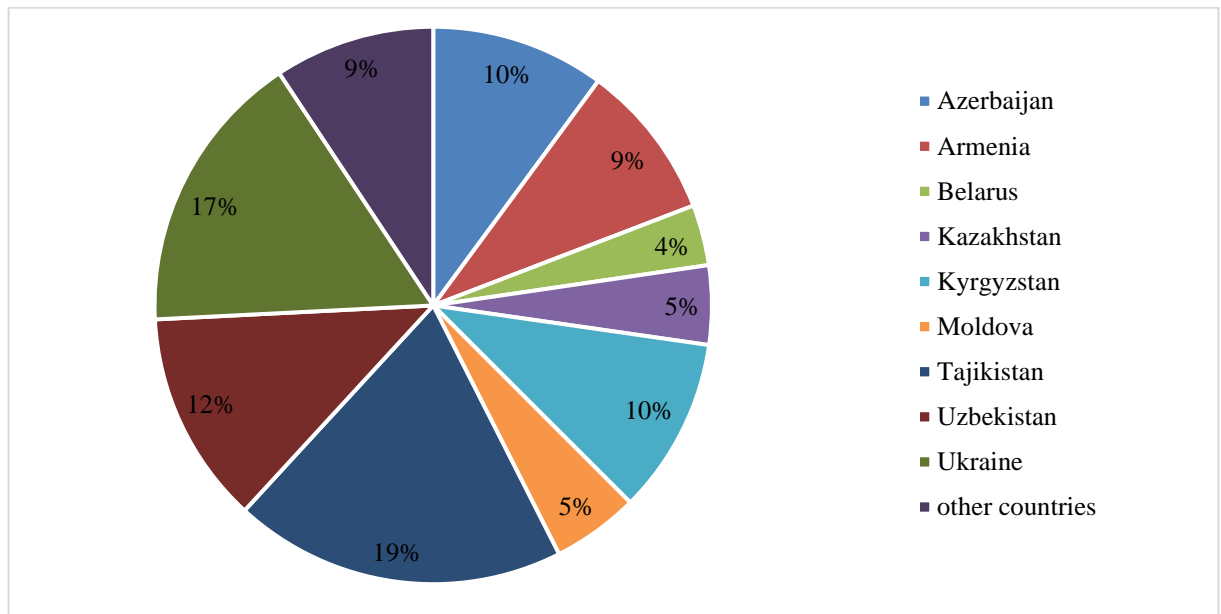
Fig. 4. Number of live births to foreigners, by nationality of parents (thousands).

Data source: Rosstat.

92% of all foreign parents are citizens of CIS countries; a total of 713,000 live births were registered where one or both parents were citizens of CIS countries (excluding Russia), which is 91% of the total number of foreign parents and 3.5% of all births between 2011 and 2021).

The leaders in the number of children born in Russia are citizens of Tajikistan (151 thousand) and Ukraine (129 thousand). In addition to the CIS countries, citizens of Georgia

(13 thousand live births), Turkey (7 thousand), China (4 thousand) and Vietnam (5 thousand) made a significant contribution to the number of births in the period from 2011 to 2022.



*Fig. 5.* Distribution of live births to foreigners from 2011-2022 by parental citizenship: For cases where the mother has foreign citizenship, only the mother's citizenship is counted; if the mother has Russian citizenship or her citizenship is not specified, the father's citizenship is counted. Data source: Rosstat.

A high share of births in mixed couples, when one of the parents has Russian citizenship, is typical for all donor countries. Slightly less than half of it is among citizens of Uzbekistan and Kyrgyzstan, in all other cases such couples prevail. The leaders in terms of participation in mixed parental couples are citizens of Kazakhstan, Georgia and Belarus - more than 80% of young parents were paired with citizens of the Russian Federation. Among the citizens of countries that made a smaller but still noticeable contribution to the number of births, we can note the citizens of Turkey (almost exclusively fathers) - their share of mixed couples is 97%. Vietnamese and Chinese, on the contrary, more often create homogeneous parental couples - the share of mixed couples is 27% and 47% respectively.

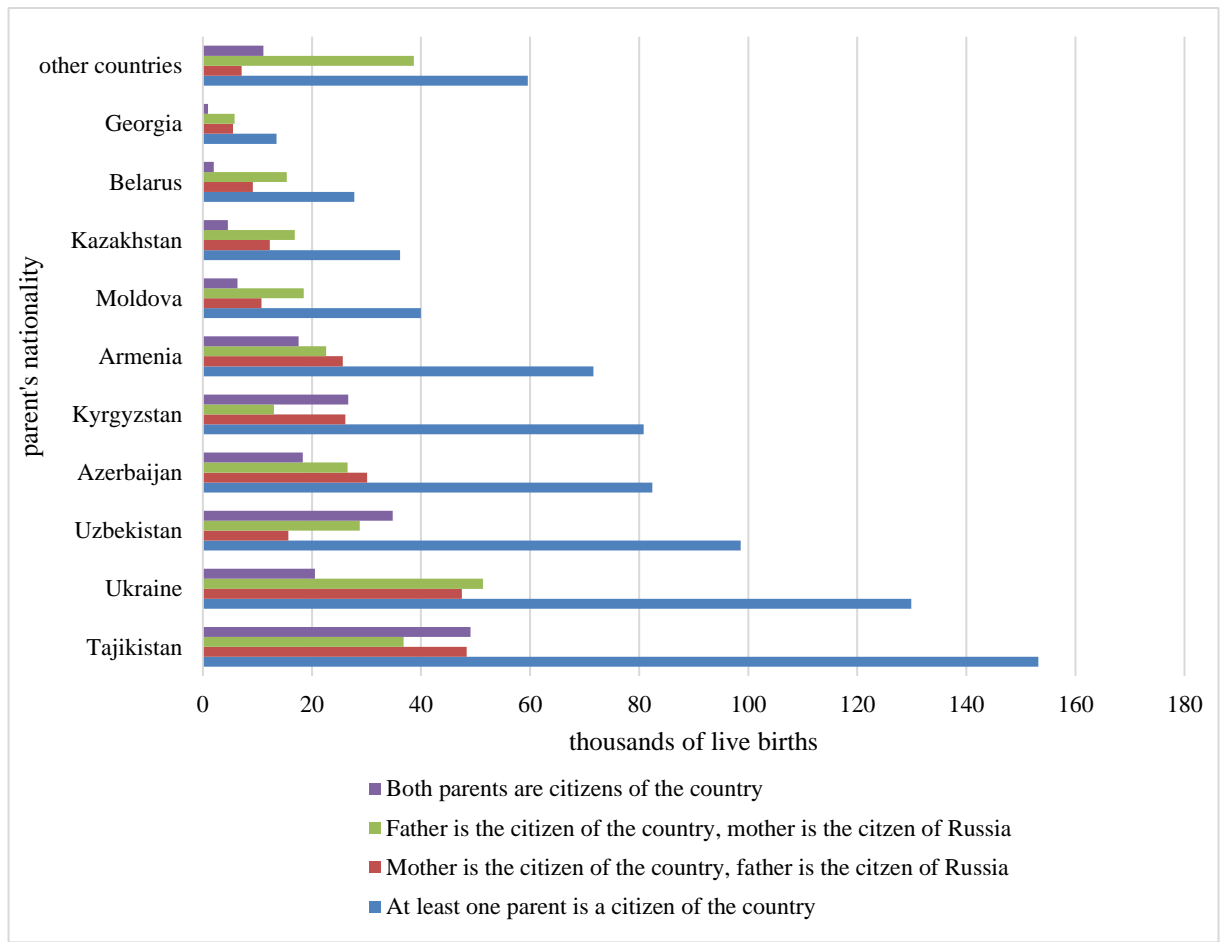


Fig. 6. Distribution of live births to foreigners by parental pair composition. Data source: Rosstat.

In the majority of children born to foreigners, one of the parents is a citizen (citizen) of the Russian Federation (Table 4). Of the total population, 65% registered mixed parental couples (one of the parents is a citizen of the Russian Federation), and for another 8% of live births to foreigners, the nationality of the second parent (in the vast majority of cases, the father) was not established. Only a quarter of newborns had both parents who were foreigners (excluding couples with unidentified citizenship of the parent - 28%). 30% had only a foreign mother and another 35% had only a foreign father.

Table 4: Distribution of live births (2011 - 2022) by parents' nationality.

Nationality of the parent*	Number of live births in 2011-2022, thousand people.				Proportion of live births in mixed parental couples (one of the parents with	Share among all foreign-born
	At least one citizen parent	These include:				
		Mother is a citizen of the	Mother is a citizen of the Russian	Both parents are		

		country, father is a citizen of the Russian Federation	Federation, father is a citizen of the country	citizens of the country	Russian citizenship)	
Tajikistan	153,2	48,4	36,8	49,1	56%	20%
Ukraine	129,9	47,5	51,4	20,6	76%	17%
Uzbekistan	98,6	15,7	28,8	34,8	45%	13%
Azerbaijan	82,4	30,1	26,6	18,3	69%	11%
Kyrgyzstan	80,8	26,1	13,0	26,6	48%	10%
Armenia	71,6	25,7	22,6	17,5	67%	9%
Moldova	40,0	10,8	18,5	6,4	73%	5%
Kazakhstan	36,2	12,3	16,9	4,6	81%	5%
Belarus	27,8	9,1	15,4	2,0	88%	4%
Georgia	13,5	5,5	5,8	0,9	84%	2%
other countries	59,6	7,1	38,7	11,1	77%	8%

Data source: Rosstat.

Number of births to lifetime migrants (including repatriates), 2015-2022. From 2015 to 2022, the annual total number of births decreased by a third: from 1.94 million to 1.3 million. At the same time, the number of births to female migrants increased by 7.5%, the number of births to women born in Russia decreased by 25% over the same period, and the most radical reduction was in the part of births for which the mother's place of birth is unknown - by 92%. If we consider the dynamics of fertility only from that point on, excluding data that introduce ambiguity, the number of births to local natives decreased by 15%, while the annual number of births to migrant women increased by 5%, from 167,000 to 176,000. In total, 1,326,000 children were born to foreign-born mothers between 2015 and 2022.

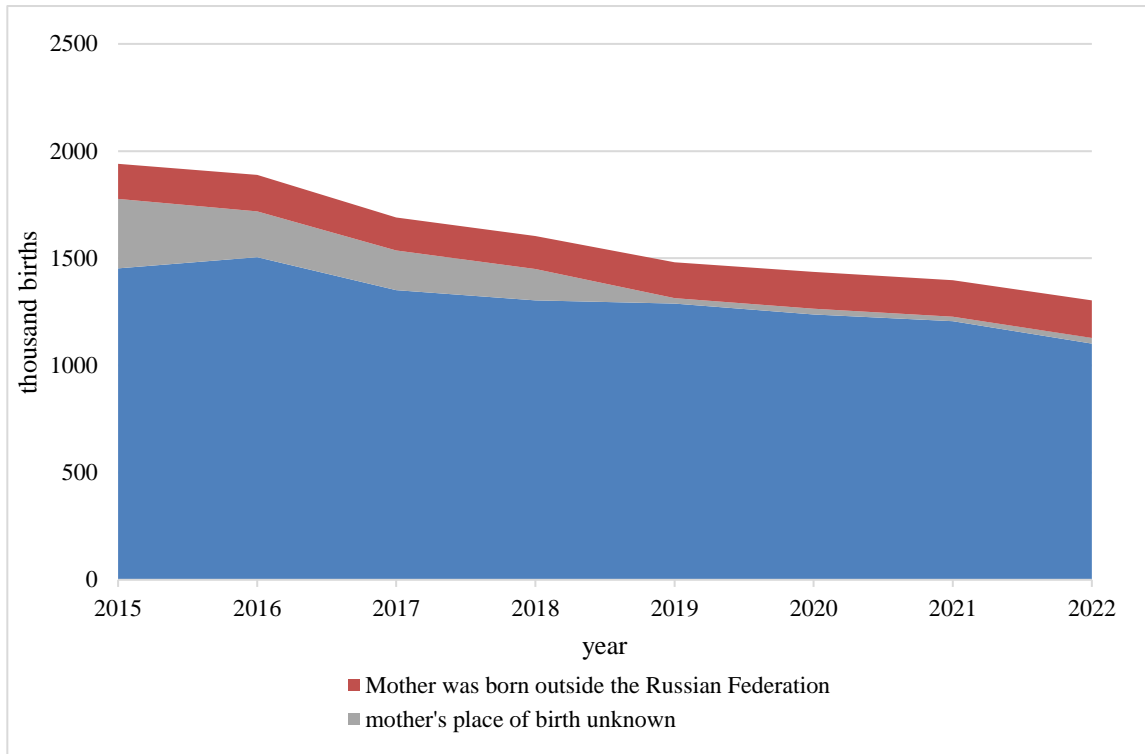


Fig. 7. Number of births by mother's place of birth (thousands). Data source: Rosstat.

The problem of incomplete data on place of birth distorts the picture of male migrants' participation in fertility much more: in 2015, the share of births with unspecified place of birth was 34%; by 2022, it had fallen to 13-14%.

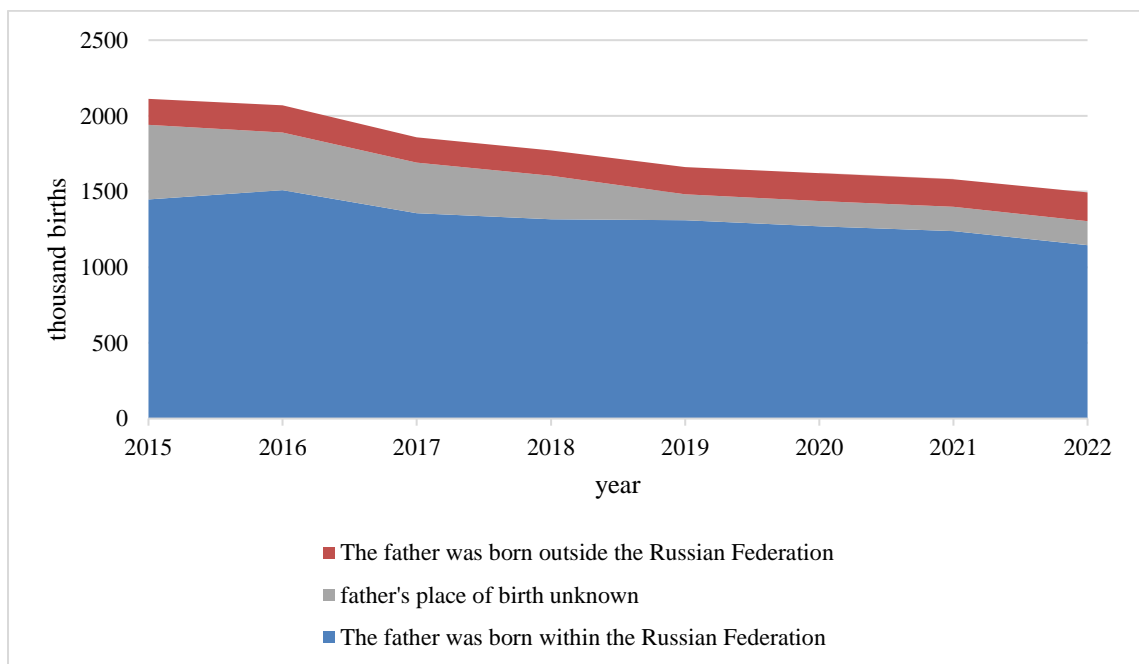


Fig. 8. Number of births by father's place of birth (thousands). Data source: Rosstat.

The contribution of migrants of both sexes increased steadily throughout the observation period: the share of foreign-born mothers rose from 10% to 14%, and the share of male migrants from 12% to 17%. Most of this increase is explained by the reduction in the denominator (total number of births): in the absence of changes in the denominator, the increase in the contribution of migrants would have been about 1% (0.7% for women and 1.1% for men). In addition, some of the increase can be explained by a decrease in the number of birth records without indication of the place of birth of the parent, but it is not possible to establish this.

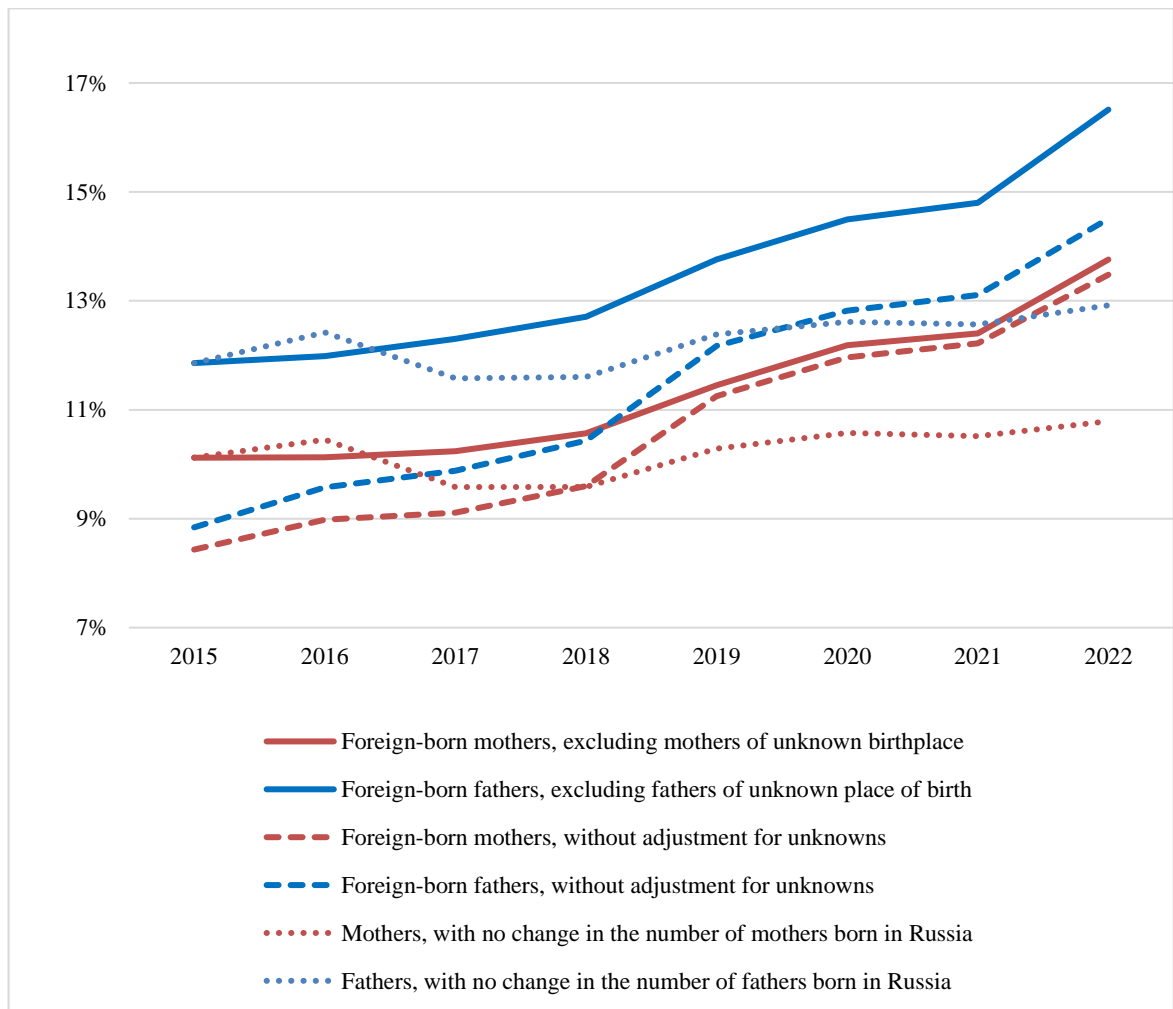


Fig. 9. Share of those born to migrants among all births in Russia, 2015-2022. Data source: Rosstat.



Migrant fathers numerically outnumber migrant mothers: for every 100 migrant men who became fathers in 2022, there are 93 migrant women, and when adjusted for the high proportion of parents (fathers, primarily) whose place of birth is unknown, there are 83 women.

### **Methods. Modelling estimation of the number of the second generation of migrants in Russia.**

In censuses, microcensuses and large sample surveys representative of the entire population of Russia throughout its history, the questionnaires have never included questions on the place of birth of parents. An exception is the PISA survey, but it is representative only of a very narrow population (15-year-olds enrolled in schools). The few special surveys aimed at the offspring of migrants also do not allow for extrapolation. Under these conditions, the only alternative to directly observed data are model estimates of the number of descendants of migrants.

For the first time, researchers in the United States began to build second-generation population models to forecast the ethno-racial composition of the population and analyze the contribution of immigration processes to the population size. The method based on cohort-component analysis was proposed by B. Edmonston and S. Passel, who drew attention to the advantages of the generational approach. Passel, who drew attention to the advantages of the generational approach (Edmonston and Passel, 1992). In addition to the fact that the results of models based on generational analysis are valuable in themselves, since they provide separate numerical estimates of different groups of people with migration backgrounds in terms of their most important characteristics, such models allow making more reasonable forecasts for the whole population. This is because conventional prognostic models are based on the hypothesis that fertility and mortality parameters are the same for all generations, even though this assumption has been repeatedly disproved. Accordingly, the generational approach to cohort-component analysis involves the introduction of separate fertility and mortality regimes for each generation. In addition, the method proposes models for monoracial marriages, models that take into account the belonging to an ethno-racial group of only one of the parents (mother), and models that take into account the descendants of mixed unions.

For Russia and the purposes of this paper, it is not reasonable to construct separate generational models as suggested by Passel and Edmonson. The key differences in generational models lie in the estimation of fertility for different generations, and since the second generation of immigrants in Russia has either not yet entered the reproductive period or is at the beginning of it (even though our tasks do not include forecasting), a separate fertility model for the second generation is not necessary.

The method based on age movement and demographic balance equation allows to trace the change in the number of cohorts over a given time interval. At each forecasting step, equal to the length of the age interval, the number of each cohort at the transition from one age group to another is determined, taking into account the impact of mortality and migration.

At each forecasting step, the following procedures are implemented:

- (1) moving the cohort with mortality into the next age group:

$${}_5P_x^F(t+5) = {}_5P_{x-5}^F(t) \cdot \frac{{}_5L_x^F}{{}_5L_{x-5}^F}$$

- (2) determining the number of births per prediction step:

$$B(t, t+5) = \sum_{x=\alpha}^{\beta-5} {}_5F_x(t, t+5) \cdot \frac{5}{2} \cdot ({}_5P_x^F(t) + {}_5P_x^F(t+5))$$

- (3) calculation of the number of the first age group (those who survived to the next point in time from the number of those born):

$${}_5P_0^F(t+5) = B^F(t, t+5) \cdot \frac{{}_5L_0^F}{5 \cdot l_0}$$

- (4) inclusion of migration growth, taking into account births and deaths among migrants.

$$\left[ \left( {}_5P_{x-5}^F(t) + \frac{{}_5\Delta M_{x-5}^F[t, t+5]}{2} \right) \cdot {}_5S_{x-5}^F \right] + \frac{{}_5\Delta M_x^F[t, t+5]}{2}$$

Population modelling is determined by the choice of the base (initial) population and the assumptions made about the components of demographic dynamics (fertility, mortality, migration). The limitation of this model is the large number of assumptions made in the context of insufficient data. At the same time, this approach allows us to make separate indicative estimates of children born in a couple where both parents are migrants and where only one of the parents is a migrant, as well as by country of origin of the parents. The same method of cohort-component analysis, but with different assumptions about reproduction parameters and a different base population, was previously used by us to estimate the number of schoolchildren of migrant origin (both with and without their own migration experience) (Smirnova 2024).

(1) Assumptions about the base population. Choosing the cohorts whose dynamics will be tracked is one of the basic tasks in building the model. The complexity of its solution is due to the fact that the data on cohorts available to us are difficult to interpret. Data on migrant

contingents are collected in the course of population censuses, primarily through the question on place of birth (Table 5).

Table 5: Population born outside Russia according to the 2020 All-Russian Census.

Country of birth	Number (people)	Share of the RF population (%)
Foreign countries	6 895 947	4,69
Of which:		
Azerbaijan	392 575	0,27
Armenia	373 943	0,25
Belarus	348 925	0,24
Georgia	196 610	0,13
Kazakhstan	1 547 167	1,05
Kyrgyzstan	380 441	0,26
Latvia	47 498	0,03
Lithuania	33 833	0,02
Moldova	189 444	0,13
Tajikistan	422 904	0,29
Turkmenistan	105 548	0,07
Uzbekistan	843 498	0,57
Ukraine	1 686 769	1,15

Source: WHC 2020.

According to international standards (European Commission. Eurostat, 2011) In the context of changing political boundaries, the country of birth is the country to which the place of birth belongs at the time of the census. However, it should be taken into account that a significant proportion of migrants are repatriates in the strict sense of the word. Undifferentiated analysis of migrants, including repatriates, and their descendants is questionable in terms of its meaningfulness, since the incoming ethnically Russian population is virtually indistinguishable from the local population in terms of its socio-economic and cultural characteristics; including them in the contingent of the second generation inadmissibly blurs it.

This methodological problem is not unique to Russia. In cases known to us (e.g. France and Germany - Silberman et al., 2007), in order to exclude from the second generation the descendants of repatriates from the ethnic majority and to bring the studied populations closer to more culturally homogeneous ones, the criterion of the presence of citizenship of the host country by the parent at birth is used. However, for Russia, identification of repatriates through citizenship is impossible, as this data is not collected.

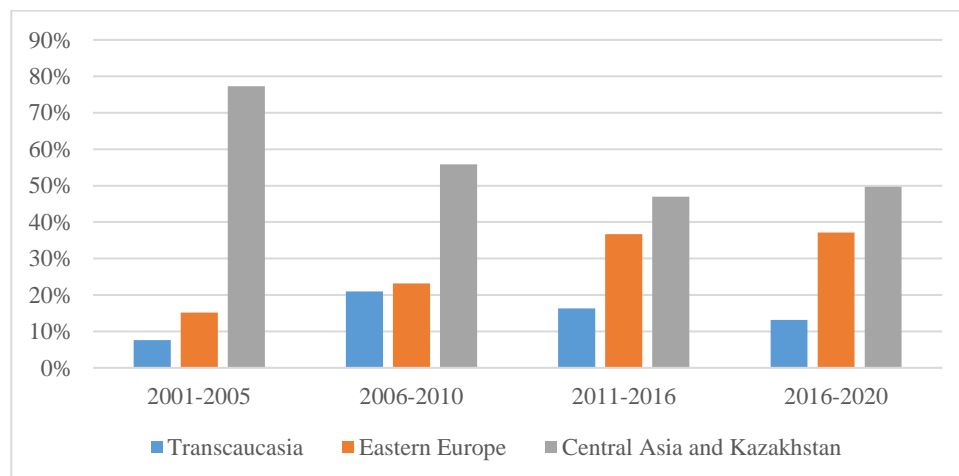
One solution that can be proposed for our model is based on the analysis of migration flows after 1991. In 1992, the migration increase was fully provided by Russians; other titular nationalities of post-Soviet countries showed an outflow. Until 1995, the inflow of Russians

from post-Soviet countries was particularly intensive, as it was associated with the partition of the army and the flight of Russians from the territories of armed conflicts (Population of Russia, 2006). Gradually, this proportion decreased, but remained at over 50% until the end of the 90s. A total of 2.7 million ethnic Russians entered Russia between 1992 and 1999, accounting for 68% of all net migration; in addition, other ethnic groups traditional to Russia, especially those previously deported, such as Tatars, Germans, Koreans, and Greeks, accounted for a significant share of the migration increase (Population of Russia 2001).

Since 2000, labor migration rather than repatriation has become the prevailing trend, so it seems appropriate to assume that the accumulation of the second generation starts from this point. Thus, the chronological framework of the analysis (starting from 2000) is introduced to separate repatriates from the population of non-ethnic migrants. Migration growth differentiated by sex, age and country of origin is taken as the base population.

(2) Assumptions about fertility parameters. The model assumes as age-specific fertility rates the average values between the rates in the country of origin and the rates in Russia as the low variant of the projection (1) and age-specific fertility rates corresponding to the values of the country of origin as the high variant of the projection (2).

(3) Assumptions about migration flows. Migration growth is the only component of the change in the number of migrant populations directly observed and recorded by current records. The cumulative migration growth from 2000 to 2021 amounted to 4.4 million people and was fully provided by the inflow of migrants from CIS countries (including Ukraine).



*Fig. 10.* Distribution of migration growth by region of origin. Data source: Rosstat.

(4) Assumptions about the mortality regime of migrants and their descendants. Current mortality records do not record the migration status of the deceased (only citizenship), and therefore the observed data, as in the case of fertility, cannot be used in the construction of the population model.

Since life expectancy is less dependent on cultural attitudes than fertility, it was decided to use the coefficients observed for the entire Russian population to estimate the impact of mortality. A similar solution is used in the Edmonston and Passel models, which assume that mortality does not vary across generations (Edmonston & Passel, 1992b)..

### Results.

Based on the above data, low and high retrospective projections were constructed, differing in the selected fertility rates. According to the models, in the period from 2001 to 2020 (inclusive), immigrant women from the CIS and Georgia who arrived in Russia no earlier than 2000 produced 650,000 to 700,000 children (Tables 6 and 7). Of these, the majority (45% of the average projection) were born in the latest projection period (2016-2020) and were between 2 and 7 years old by the end of 2022. Almost as many (38% of the average projection) were from the 2011-2015 five-year cohort; their ages at the end of 2022 were between 8 and 12 years old. 16% of children were born between 2006 and 2010. The oldest (born between 2001 and 2005), who have reached adulthood to date, represent the smallest cohort (about 5% of the total estimated population).

Table 6: Estimates of the number of children born to immigrant women from the CIS and Georgia in Russia in 2001-2020 (low variant of the forecast, assuming WCD values that are the average between the WCD of the mother's country of origin and Russia).

Mother's country of origin	Number of births by forecast periods (thousand people)				of everything:
	2001-2005	2006-2010	2011-2015	2016-2020	
Azerbaijan	0,9	4,0	14,6	13,3	32,9
Armenia	1,1	6,0	23,2	21,4	51,7
Belarus	1,1	1,8	3,2	4,9	11,0
Kazakhstan	10,6	25,2	62,8	62,3	160,9
Kyrgyzstan	2,5	9,8	31,6	31,1	75,1
Moldova	1,1	4,1	15,7	15,1	35,9
Tajikistan	1,3	5,1	16,4	25,0	47,9
Turkmenistan	1,1	3,0	6,7	6,5	17,4
Uzbekistan	5,1	17,5	42,5	39,0	104,2
Ukraine	4,8	12,1	31,1	45,6	93,7

Georgia	1,1	3,1	8,3	6,7	19,1
All CIS countries and Georgia:					650,0

Source: author's calculations.

Table 7: Estimates of the number of children born to immigrant women from the CIS and Georgia in Russia in 2001-2020 (high variant of the forecast, assuming WCD values equal to the coefficients of the mother's country of origin).

Mother's country of origin	Number of births by forecast periods (thousand people)				
	2001-2005	2006-2010	2011-2015	2016-2020	of everything:
Azerbaijan	1,1	4,7	11,6	13,1	30,6
Armenia	1,1	6,4	16,0	20,6	44,1
Belarus	1,0	1,5	3,5	4,8	10,8
Kazakhstan	12,9	30,8	59,5	79,9	183,1
Kyrgyzstan	3,3	13,2	32,4	40,6	89,5
Moldova	1,2	4,3	11,4	15,7	32,6
Tajikistan	1,9	7,6	17,4	33,1	60,0
Turkmenistan	1,5	4,0	6,7	8,4	20,7
Uzbekistan	6,8	23,2	37,5	47,8	115,3
Ukraine	4,5	11,2	31,4	40,0	87,1
Georgia	1,2	3,3	6,6	7,4	18,4
All CIS countries and Georgia:					692,3

Source: author's calculations.

The presented model is based on mothers' fertility and does not include children born in families where only the father is a migrant. Meanwhile, there are reasons to assume that most children are born in mixed couples where only one of the spouses (partners) is a migrant. To realize the calculation of the number of children born in a couple "immigrant + native-born woman" within the framework of the cohort-component model, age-specific fertility rates for men would be required. For this reason, estimates of the number of children born to immigrant fathers from CIS countries (and Georgia) and mothers with no migration history of their own were made on the basis of Rosstat data on the number of births by citizenship of the father and mother (for the period from 2011 to 2021), with the assumption that Russian citizens are not migrants and all parental pairs immigrant(-citizen) + Russian citizen(-citizen) are recognized as mixed.

According to fertility statistics, the ratio of the number of children born to a couple where the mother is a citizen of the Russian Federation and the father is a citizen of another CIS country to children with a mother who is a citizen of another CIS country (the father's citizenship is irrelevant) is 59% for the period 2011-2015 and 61% for the period 2016-2020. Applying these ratios to the numbers of births obtained from the cohort-component analysis, we obtain an additional 420,000 to 454,000 children born between 2001 and 2020 (Tables 8 and 9).

Table 8: Estimated number of children with a migrant father and a local mother (low variant of the forecast), thousand people.

Father's country of exodus:	Number of births by forecast periods (thousand people)				Total number
	2001-2005	2006-2010	2011-2015	2016-2020	
Azerbaijan	0,3	1,0	6,9	7,0	15,3
Armenia	0,5	2,1	13,7	10,3	26,6
Belarus	1,1	1,9	4,7	3,8	11,6
Kazakhstan	2,3	5,7	61,9	48,9	11,9
Kyrgyzstan	0,5	0,8	12,0	9,3	22,6
Moldova	1,0	3,8	17,0	12,3	34,1
Tajikistan	2,2	5,6	8,7	10,0	26,5
Turkmenistan	0,5	1,3	6,1	3,9	11,7
Uzbekistan	3,8	7,0	38,3	17,9	67,1
Ukraine	4,8	12,4	25,4	26,2	68,7
Georgia	1,0	2,8	6,3	6,7	16,8
Total	18,0	44,4	201,0	156,3	419,7

Source: author's calculations.

Table 9: Estimated number of children with a migrant father and a local mother (high variant of the forecast), thousand people.

	Number of births by forecast periods (thousand people)				Total number
	2001-2005	2006-2010	2011-2015	2016-2020	
Azerbaijan	0,4	1,2	5,5	6,9	14,0
Armenia	0,5	2,2	9,4	9,9	22,1
Belarus	1,0	1,6	5,2	3,7	11,5
Kazakhstan	12,3	27,7	58,6	62,7	161,3
Kyrgyzstan	0,7	3,0	12,3	12,1	28,2
Moldova	0,2	0,3	12,4	12,8	25,8
Tajikistan	1,8	7,1	9,2	13,2	31,3
Turkmenistan	2,6	4,4	6,1	5,0	18,1

Uzbekistan	2,9	10,0	33,8	22,0	68,6
Ukraine	3,4	4,5	25,5	23,0	56,4
Georgia	1,2	3,4	5,0	7,4	17,0
Total	26,9	65,4	182,9	178,9	454,2

Source: author's calculations.

The estimated number of children born in Russia with at least one migrant parent by 2021 ranges from 1 million to 1.15 million. At the same time, an overwhelming number of children have only one migrant parent: based on the ratios of children born to foreign parents, only a third of children have both immigrant parents. 65% of the descendants of migrants are related to the countries of Central Asia, with a large skew towards Kazakhstan (almost a third of the entire second generation).

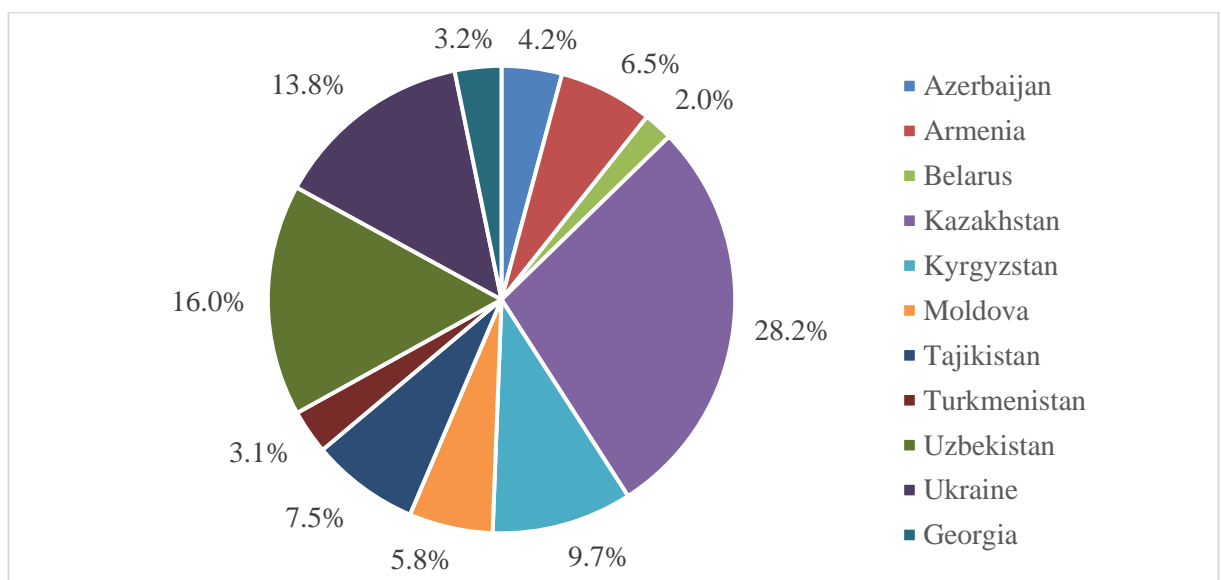


Fig. 11. Distribution of migrants' offspring by parents' country of origin: for those born in a couple where only the father is a migrant - father's country of origin; for the rest - mother's country of origin. Source: author's calculations.

### Discussion.

This research has allowed us for the first time to obtain detailed estimates of the number of the second generation of migrants in Russia, which is important for both the scientific community and practitioners involved in the development of public policy. It is important to note that the data obtained, despite some methodological limitations, confirm the significant demographic effect of migration, even in the absence of official statistical records of this population group.



*Interpretation of the results.* Our results show that the number of second-generation migrants in Russia is more than one million. The data on the size of the second generation obtained in the course of the study are comparable to estimates of the size of similar groups in other countries, although they reveal differences in structural characteristics. This can be explained by differences in migration flows, cultural and economic conditions, and migrant policies.

*Comparison with previous studies.* Compared to European leaders in receiving immigrants, the second generation in Russia is still quite small - it accounts for less than 1% of the country's total population. The accumulation of the second generation started relatively recently - after 2000, if we do not take into account the descendants of repatriates, with the last decade of the forecast accounting for about 80% of births. By 2020, less than 50,000 descendants of migrants had reached adulthood, and the average age of the estimated contingent was 7 years. However, the accumulation of the second generation continues, albeit at an unstable rate (in the period 2006-2010, the number of births was almost three times higher than in the previous projection period; in the next period (2011-2015), the number of births tripled again, but later the number of births, according to our estimates, remained stable).

*Restrictions.*

The proposed model implies unavoidable assumptions about migrants' fertility and mortality regimes; the numbers of those born in mixed couples (to parents with different migration statuses) are also determined by indirect data; at the same time, the descendants of migrants of mixed origin constitute the overwhelming majority of the total population. The most difficult methodological problem is the identification of the descendants of repatriates, whose inclusion in the number of the second generation deprives this statistical category of much of its social content. The limitation of the chronological framework, which "cuts off" migrants during the mass repatriation of the 1990s, leads to undercounting the descendants of labor migrants of this period.

*Reflections.* The obtained estimates of the second generation population partially clarify the scale of the challenges that need to be addressed on the way to an inclusive society. The findings have important implications for the development of public policies on migrant integration. Given the importance of the second generation of migrants for the demographic development of the country, it is necessary to develop and implement measures aimed at their integration and social support. This is especially important in the context of an increase in the number of migrants' descendants in the future.

## **Conclusion.**

The study allowed us to estimate for the first time the number of the second generation of migrants in Russia, which is more than one million people, which indicates a significant demographic effect of migration even in the absence of official statistical records of this group. The use of cohort-component analysis to model the number of descendants of migrants made it possible to obtain more accurate data in conditions of limited data and to estimate the structure of the second generation of migrants taking into account their origin (by the country of origin of their parents).

The results of the study have applied value for the development of state policy in the field of integration of migrants and their descendants. The obtained estimates can be used to adjust the representativeness of samples when conducting social surveys, as well as for more accurate planning of social support measures and educational programs.

### *Conclusions.*

1. The number of the second generation of migrants in Russia is significantly lower than in European countries, but it continues to grow, which requires attention from government agencies and researchers.

2. The method of cohort-component analysis has shown its effectiveness and can be recommended for use in studies of the number of migrants in conditions of limited data.

3. The estimates obtained can serve as a basis for the development of social policies aimed at the integration of the second generation of migrants and their successful inclusion in society.

The study emphasizes the need for further development of the national statistical system and the integration of new methodologies for a more accurate analysis of migration processes and their long-term consequences for Russian society. This will make it possible to form a more inclusive society and create conditions for the successful integration of migrants and their descendants.

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