

# YOUTH MIGRATION DRIVES THE DEPOPULATION OF PERIPHERY

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## Introduction

Migration has a huge influence on demographic structure formation both in donor and host areas. And this factor is eventually becoming more and more important with populations' demographic development. According to the idea of the Third Demographic Transition, migration is becoming the main driver of population dynamics in the most demographically developed countries [Coleman, 2006]. This tendency became clear on the international level only in the last several decades when, after the Second World War, the developed countries experienced a great inflow of international migrants [Borjas, 1989; Fassmann, Munz, 1992; Massey et al., 1993; Filipov, Schuster, 2010; Wilson et al., 2013]. The phenomenon took time to be noticed because of difficulties in migration statistics record. The effect of migration on demographic structure formation is much more significant at subnational level. That is why it was noticed and studied firstly for the internal migration [Ravestein, 1985; Zipf, 1946; Hurenium, 1951; Lee, 1966; Zelinsky, 1971; Fielding, 1989; Champion et al., 1998].

In this research we are studying the impact of migration on demographic structures at sub-regional level of administrative division using census data. We are focusing our prime attention on the youth migration because their relocation determines the greatest changes in the demographic structure. Migration is the lot of young. This thesis is very well known. The selectiveness of migration was noted even in Ravestein's «Lows of migration» [Ravestein, 1985]. The term of «differential mobility» was firstly introduced by Dorothy Thomas [Thomas, 1938]. Empirical support for this finding was provided later [Castro, Rogers, 1983; Bailey, 1993; Millington, 2000; Rogers, Raymer, Willekens, 2002].

## Visual analysis and hypothesis

The hypothesis about the remarkable role of internal migration in the process of demographic structure formation was caused and supported by visual analysis of

Russian Census 2010 maps. The maps were built at the sub-regional level of administrative division. At the moment of Census 2010 there were 83 regions in Russia and more than 2300 municipal districts. The choice of the level of municipal districts gives us the unique possibility to study intraregional migration.

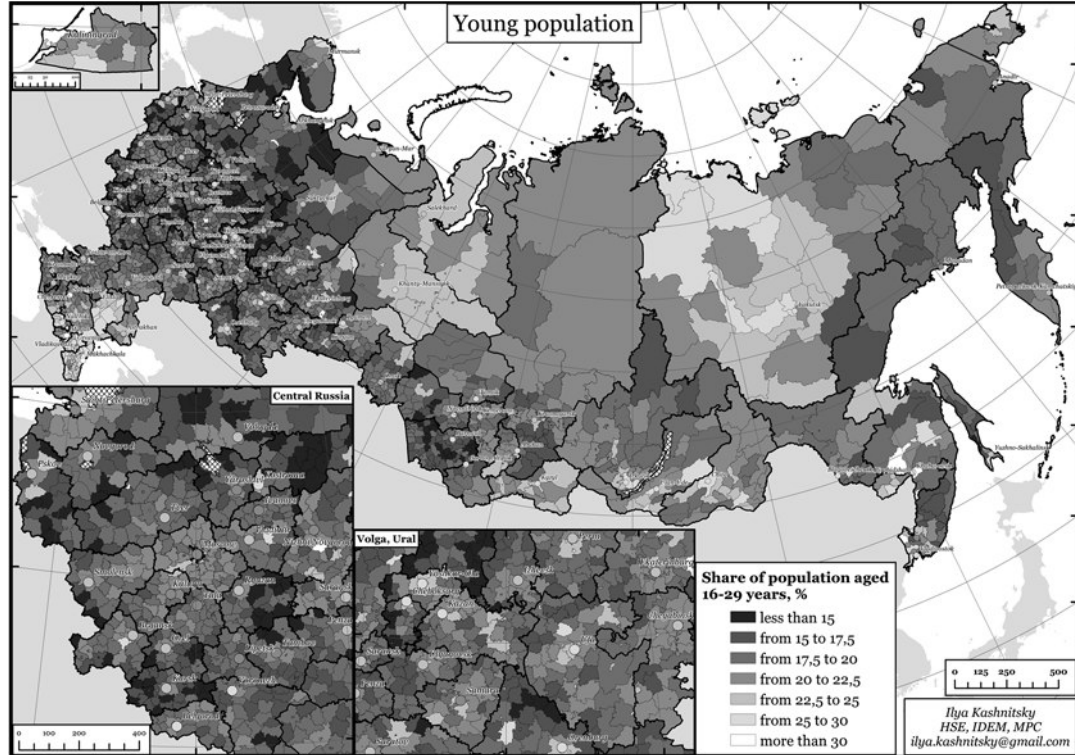
The idea of our hypothesis formation is clear. Census provides us with the demographic structure of the population. The demographic structure itself shows the result of long-lasting influence of demographic processes. Diversity in the levels of fertility and mortality persist but are not able to explain huge differences within regions. So the internal spatial difference of demographic structure characteristics could be seen as a clear imprint of migration due to the mentioned above age selectiveness of the demographic process. We would like to show here just one of the number of Russian Census maps. For the whole gallery of maps see the link in Appendix (maps No. 1–8), see also [Kashnitsky, 2014].

It is obvious that every regional center is much younger than the surrounding inner periphery. Here we tend to see the clear impact of migration, mainly internal but also interregional and even international. Our further cohort-wise investigation of intraregional migration is aimed to support this hypothesis.

## **Data and methods**

In this paper we present the cohort research on Russian youth intraregional migration. The main method is «survival method» [Wunsch, Termote, 1978; Bogue, 1982] also known in Russia as «method of shifting ages». The prime data source is Russian Census 2002 and 2010 data. We also use current mortality record to access the impact of mortality on cohort size and current migration record to compare it with our migration evaluations based on Census data.

The natural question is why do we use Census data in this research. The first and main reason for such choice is already mentioned above. Only Census data allows us to analyze spatial mobility of the population at the sub-regional level. But there is another very important reason. It lies in the problems with current migration record that Russian statistics faced after the fall of the Soviet Union. The liberalization of the rules of tabulation by place of residence in Russia caused huge inaccuracy in migration statistics [Chudinovskikh, 2004]. Naturally, the most problematic group proved to be the youths, especially the so called «student ages» (usually at age of 17–19). Some positive changes in migration record happened only in 2011 which leave the intercensal period internal migration to be verified. The comparison of two main sources of migration statistics brings us new valuable information.



**Fig. 1.** Share of young population (aged 16–29) by Russian municipal districts, Census 2010

## Statistics discrepancy

To compare our two sources of migration statistics, Census data and current record, let us see which part of change in cohort size registered with Census data (Table 1, row No. 3) could not be explained with the current migration and mortality record (Table 1, rows No. 4, 5). Here and further we took for deeper research 5 regions (Altai Krai, Kostroma, Kursk, Rostov and Bashkortostan) and 5 one-year birth cohorts (1988–1992). Each of these cohorts has experienced the 18-years peak of migration activity during the period between the Censuses 2002 and 2010. At the moment of Census 2002 they were 10–14. Naturally, during the intercensus period they grew older and reached the age of 18–22 («student» ages) by the Census 2010.

The idea of the method is quite simple. People can live, die or move, not vanish. So we can evaluate the migration balance by the comparison of the Censuses data considering mortality. This method is known as «survival method» or «method of shifting ages».

The most important results are in the row No. 7 of the Table 1.

**Table 1.** The discrepancy in youth migration statistics, thousands, Census 2002, 2010, current mortality and migration record 2003–2010

Row	Birth cohorts 1988–1992	Region				
		Altai Krai	Kostroma	Kursk	Rostov	Bashkortostan
1	Population in 2002	183,5	51,4	84,4	297,5	346,4
2	Population in 2010	172,5	44,4	74,4	335,3	324,3
3	Change by the Censuses	–11,0	–7,0	–10,0	37,8	–22,1
4	Dead in 2003–2010	–1,6	–0,4	–0,6	–2,0	–3,0
5	Registered migration in 2003–2010	–5,9	–1,4	–0,6	1,4	–1,1
6	Discrepancy	–3,5	–5,1	–8,8	38,3	–18,1
7	Unexplained change, %	31,7	73,2	88,3	101,4	81,7
8	Unaccounted cohort change, %	–1,9	–9,9	–10,5	12,9	–5,2

The discrepancy strikes. The two sources of migration statistics are incomparable. The official statistics fails to record almost the whole decrease in cohort size registered with Census data (Table 1, row No. 7). The unaccounted cohort change

reaches are than 10 per cent of the original cohort size (row No. 8). And we need to remember that the picture is given for the regions, not municipal district – current record data is only available at region scale. In the most depressive municipal districts the share of migration unseen by the current record could be terrible. The situation is only slightly better in Altai Krai region where the share of rural population is still very significant. In the Rostov region current record even failed to catch the direction of change in cohort size, so the unexplained change is more than 100 per cent.

## Does the current record fail only «student ages»?

The next logical question is whether such poor performance of current migration record is typical only for «student ages» or is the problem much wider. To investigate this question we applied the same calculations for the birth cohort 1980–1984. These persons were 18–22 in 2002 and became 26–30 in 2010. Due to the data limitations we took only Kostroma and Kursk regions.

If the unexplained change in these older cohorts would be the same as for the birth cohort 1988–1992 we could conclude that the problem with the current migration record is not age-specified. But it seems that the current migration record really fails only «student ages» (Table 2).

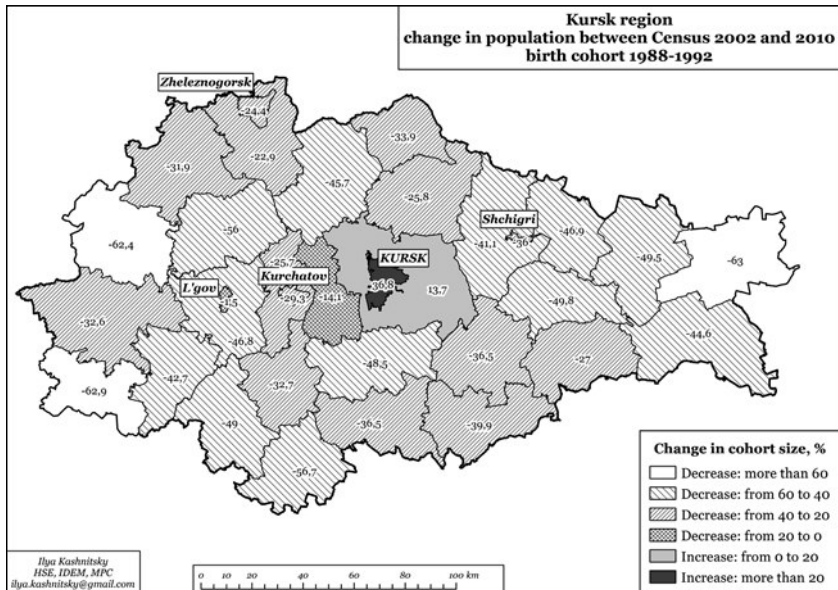
**Table 2.** Comparison of the current migration record accuracy for «student ages» and «post-student ages», Census 2002, 2010, current mortality and migration record 2003–2010

	Census change	International migration	Interregional migration	Mortality	Discrepancy	
<b>KURSK</b>					abs	%
Cohort 1988–1992	–9998	823	–1406	587	–8828	88,3
Cohort 1980–1984	–4199	1779	–4576	1663	261	6,2
<b>KOSTROMA</b>						
Cohort 1988–1992	–6966	223	–1658	430	–5101	73,2
Cohort 1980–1984	–2782	626	–2140	1285	17	0,6

The unexplained change in the cohort size is almost insignificant for the older cohort. We have to conclude that current migration record is absolutely inappropriate to study youth migration during the intercensus period 2003–2010.

## Estimation of youth intraregional migration

The scale of the research allows us to look at the intercensus cohort losses of regional periphery by every municipal district. Here we want to note that these losses are almost precisely migrational. The change in cohort size due to mortality at the ages 10–22 is less than 1 per cent.



**Fig. 2.** Change in cohort size, Kursk region, birth cohort 1988–1992, Census 2002, 2010

And the picture is really horrible (Fig. 2). Up to 70 percent of the youths (cohort 1988–1992) leave the periphery after the school graduation! We can only imagine the future of the population where just 30 percent of the youths are willing to stay.

The maps for all of the selected regions (see Appendix, maps No. 9–13) show that only big cities can attract the youths. In case of Kursk and Kostroma regions, when regional centers are relatively small, only the regional center is attractive enough for the young. The hinterland’s perspective is not cheerful.

The research for the previous period between two Censuses in Russia (1989–2002) showed that up to 40 percent of school graduates leave regional periphery in

the search of better opportunities [Mkrtychyan, 2012]. Our research demonstrates that the migration situation in Russian hinterland is becoming more and more negative.

## **Do the young movers come back later?**

It is just natural for the young to move from the periphery in search for education and better life opportunities. But the crucial question is whether the young movers come back to the periphery. True, the demographic situation is not so tragic if there is a compensative return migration to the inner periphery. There are several conceptions of life-circle migration describing the balance of migration between periphery and center through the lifespan of cohorts. We would like to note the «escalator region» concept by Anthony Fielding [Fielding, 1989; 1993]. Such concept has a number of evidences from the developed countries. We guess that the key factor here is the stage of urbanization completion. The migration balance between core and periphery is quite similar to the urbanization/suburbanization balance. But in Russia the urbanization is not nearly completed yet. Apart from usual lag in demographic development here we may also see the result of deep agricultural crisis in rural areas after the fall of the Soviet Union. The only analogue of «escalator region» migration in Russia is the life-circle population exchange between Far North and the Southern regions. But this phenomenon is beyond the scope of our research. The whole concept does not work at the interregional level. Hence, we expect to see no significant return of the «post-student» aged population to the inner periphery.

In order to find answer for the proposed question we decided to study the intraregional migration of the birth cohort 1980–1984 (Fig. 3). They were in «student ages» at the moment of Census 2002 and grew into young working ages by Census 2010. As we do not have long time series to trace the real cohorts through the «student ages» and on to the young working ages we are forced to make some synthetic cohort assumptions. We are going to apply survival ratios of birth cohort 1980–1984 in the 2003–2010 intercensus period to our current «students» – birth cohort 1988–1992. In other words, we impose a synthetic cohort assumption due to the data limitations.

The picture (Fig. 3, see also Appendix) gives us the impression about the return rate of the young movers from periphery. We can see no massive return. True, some peripheral districts experience a slight influx of young migrants. But let us not forget that this inflow of migrants follows a huge out-migration earlier. The most depressive districts continue to sustain serious losses of young population. Interesting remark: it seems like regional centers face surplus of «high school graduates». They suffer a slight loss of young population in the «post-student ages».

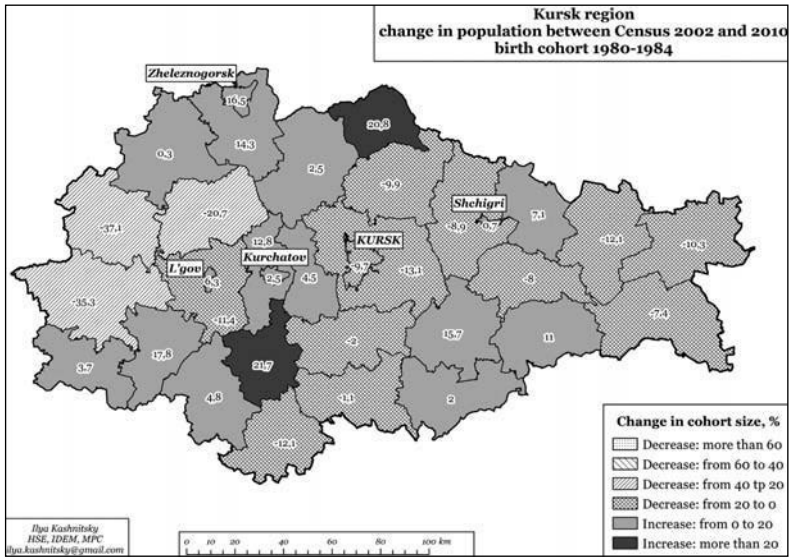


Fig. 3. Change in cohort size, Kursk region, birth cohort 1980–1984, Census 2002, 2010

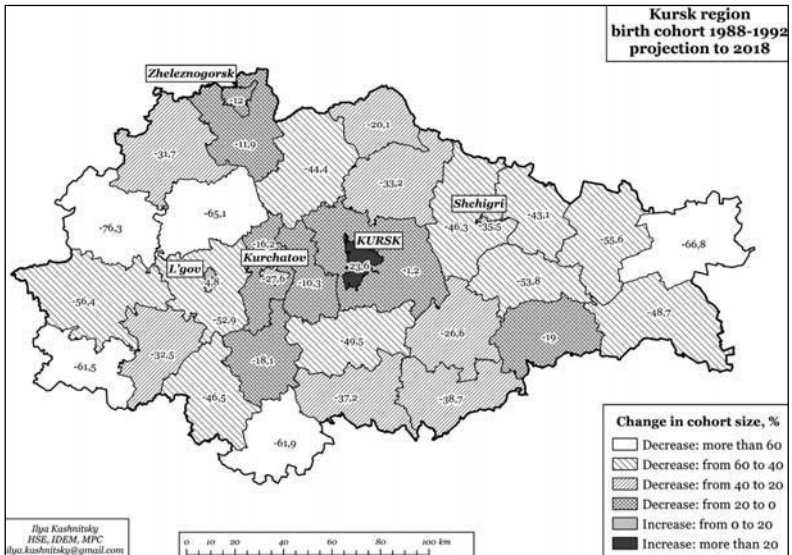


Fig. 4. Projection to 2018, Kursk region, birth cohort 1988–1992, Census 2002, 2010



The projection for the birth cohort 1988–1992 (Fig. 4, see also Appendix) shows that the summary impact of youth interregional migration is fatal for the inner periphery.

We would also like to note that our research showed the increase in «students'» centripetal migration comparing with the previous intercensus period. It is likely that the intensity of intraregional centripetal movement in «post-student ages» has also increased. In other words the real cohort depletion of the periphery could turn out to be even more terrible than the projection for the synthetic cohort.

## **Conclusion**

This research focuses on the way the demographic structures form under the influence of migration. In this paper we consider mainly the internal migration (more intraregional, less interregional) as the key factor. The research is held on the level of municipal districts, which allow us to analyze the intraregional migration dynamics.

Census data proves to be the only eligible source of information to study intraregional youth migration and to verify the intensity of youth migration during the last intercensus period. Current migration record seems to fail exceptionally «student ages».

We note the increase in the intensity of the centripetal movement in the regions. The pace of the depopulation in the hinterland is accelerating. The most depressive districts have lost more than 60 percent of school graduates during the last intercensus period. Migration proves to be the main factor of changes in the demographic structures.

There is no compensative return migration of young adults to the inner periphery. Relatively small regional centers face surplus of young adults in the «post-student ages».

The remoteness of the peripheral district determines the level of its depressiveness as well as the attractive power of the center. Every big center of migration attraction forms a depressive ring around itself. This is the result of «migration exhaustion».

## **Acknowledgement**

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## **Appendix (links to maps)**

The whole gallery of maps (17) can be viewed and downloaded here: <https://drive.google.com/folderview?id=0B1Cid1hm5YLRSExOZ0VwVU8zWkE&usp=sharing>