

# DEMOGRAPHIC CONSEQUENCES OF ECONOMIC MODERNIZATION IN RUSSIA IN THE PAST THIRTY YEARS IN THE DEMOGRAPHIC TRANSFORMATION THEORY

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## Abstract

The paper is devoted to the social-economic factors' analysis of the dynamics of population change, its structure and composition in one of Russia's regions – the Urals. The main trend of the last decades is descending demographic dynamics.

Transformation from high levels of birth rates and mortality rates to the lower ones was named "Demographic Transformation" by F. Notestein. The conceptual basis of the article is the demographic transformation theory.

Statistics data on the population in the Urals, mainly data on census of 1979 and 2010, and also partially on census of 1989 and 2002, is used for comparative analysis. While researching on the economic region levels and its areas, we paid attention to the population dynamics indexes, which we used in the comparativist methodology realization. According to the abovementioned, the main figures for analysis were determined: the number of population and its dynamics, natural movement of the population, division of the population into urban and rural, sexual structure of the population, age structure, life expectancy, population reproduction, migration, disease rate and income levels.

The paper points at possible economic and social steps to correct the given negative situation in the region, taking into consideration international experience.

**Key words:** demographic transformation theory, population in the Urals, natural increase

**JEL Code:** J11, J12, J13

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## Introduction

It is widely considered that the world is now going through a demographic crisis, which manifests itself in declining rates of the population growth in developed countries. This makes the theoretical and practical research of demographic trends particularly important: for example, it can be used to develop social and demographic policy for local governments.

The demographic transition model provides us with efficient theoretical approaches to studying the historical evolution of birth rates (Stix, Notestein, 1940). According to this model, all societies pass through four or five stages (Blue, Thomas, 2011), each corresponding to a certain level of development, which, in its turn, determines the type of population reproduction. Some authors indicate the factors which affect the demographic processes (Notestein, 1945).

This article dwells upon the case of Ural region, Russia, to identify the factors which shaped the last stage of the first demographic transition and the beginning of the second demographic transition and to consider migration processes from the third demographic transition perspective. We used the statistical data on the population of this region drawn from the population censuses of 1979, 1989, 2002 and 2010 and conducted comparative analysis of the population dynamics figures in this region. Moreover we used results of own sociological empirical investigation.

## **1 Theoretical and methodological backgrounds**

In the last one hundred years Russia has seen controversial demographic trends such as the declining completed fertility rates (Sciubba, 2014), which in this period have dropped five or sixfold. Such decline in fertility can be explained by the dramatic changes in social norms, sexual and reproductive culture, and the decreasing economic need in children. Therefore, we can conclude that this trend was historically predetermined. Moreover, it happened worldwide: the transition from high to low fertility is a common pattern for developed countries. The population of each region demonstrates different types of demographic reproduction: for example, in Russia the transition from high to low fertility was intensified by such social disasters as World War I, Revolution of 1917, World War II, and the economic reforms of the 1990s, which accelerated the country's modernization and its passage through several stages of the demographic transition (Burger, DeLong, 2016). Throughout the twentieth century, the Russian government was trying to improve the demographic situation but their attempts did not bring any positive results apart from the slight increase in fertility rates. Their failure can be explained by the changes in the birth timing among women of the actual generation (Hruschka, and Burger, 2016). This is where lies the specific nature of the first demographic transition (FDT) in Russia, which supposedly ended in the 1980s.

In the recent decades, Russia has entered the second demographic transition (SDT) (Van Daalen, Caswell, 2015; Lesthaeghe, Surkyn, 2004), which started in the post-industrial stage of the country's development, that is, in the mid-1990s. This period was characterized by a fall in

fertility; a reduced size of the family; a rise in the number of children born out of wedlock; replacement migration; and an increase in the average age of the population and the life span. In general, within the demographic transition theory, the scientific discourse of reproduction is now turning from the dichotomy 'high fertility - low mortality' to the dichotomy 'low fertility – low mortality', which can be also found in the works of Russian scholars.

D. Coleman points out that if the forecasts about the transformation of the ethnic and racial composition of the population are accurate and the current trends tend to continue, we would face the third demographic transition, which would change not only the demographic figures associated with the first and the second transition but the whole population composition (Coleman, 2006).

If the first demographic transition was associated with the falling birth and death rates and the second, with the dramatic changes in reproductive and sexual behaviour (sex became separated from the family's reproductive function), then the last or the third demographic transition primarily deals with the transformation of the population composition caused by migration.

## **2 Research Results and Discussion**

The Russian population has been changing unevenly throughout the last one hundred years. It reached its maximum in the late 1980s, after which it started to decline, which resulted in the reduction by almost two million in 2002 and four million in 2010 (Obradović, Babović, Shpak, 2016). The population of Ural region is changing in proportion to the overall population of the country.

Ural (officially known as the Ural Federal District) comprises four regions: Kurgan, Sverdlovsk, Tumen (including Khanty-Mansiisk and Yamalo-Nenetsk autonomous districts), and Chelyabinsk. The Ural Federal District includes 1,345 municipal entities. It is located in the central part of Russia and has a huge social and economic potential, which makes it one of the country's leading regions. It is important to point out that all Russian regions including Ural experienced complex social and economic modernization processes in the 1980-1990s, which led to some negative demographic consequences in the late twentieth - early twenty-first century. These tendencies have the same features for all country regions, as well as for Ural one. The population of the Ural Federal District in 2015 amounts 12 275 853 people, that contains 8,4% of the Russian Federation population.

2.1. Let us now consider the changes in the figures of the natural population movement within the first demographic transition theory.

As was previously mentioned, the first demographic transition is associated with the falling birth and death rates. Its last phase is associated with increasing life expectancy, falling natural growth till negative figures and falling population numbers. In the late nineteenth-century Russia life expectancy at birth was 30,54 years while in the mid-twentieth century it was already 67,91 years. In 2014 it was 70,93. In the early twenty-first century 54,2% of men were expected to reach the retirement age. 'In 2009, despite the economic recession, this figure increased to 61,2%. As for the female population, their chances to reach the retirement age increased from 82,5% to 85,0% (Demographic Yearbook of Russia, 2010, 2015). Life expectancy among men in their sixties in the first decade of the twenty-first century showed a growth of 1,17 years and among women, 1,47 years' (Dobrokhleb, 2012). The mortality rates in 1936-1937 years in the Ural region contains in average 30‰, this figure is shown simultaneously with general birth rate. For example, in 1937 in the Ural region the birth figure attained 49,9‰. This statement proves our hypothesis.

**Tab. 1: Fertility and mortality rates and the natural increase in the Ural Federal District**

Ural Federal District	Population			On one thousand inhabitants		
	Number of births	Number of deaths	Natural population growth	Number of births	Number of deaths	Natural population growth
1970	155103	84055	71048	15,3	8,3	7,0
1980	185689	117342	68347	16,9	10,7	6,2
1990	172448	123933	48515	13,5	9,7	3,8
1995	116694	175184	-58490	9,2	13,9	-4,7
2000	115123	179389	-64266	9,2	14,4	-5,2
2005	136038	181125	-45087	11,1	14,8	-3,7
2010	170489	156698	13791	14,1	13,0	1,1
2011	172019	153685	18334	14,2	12,7	1,5
2012	184007	153347	30660	15,1	12,6	2,5
2013	183536	150673	32863	15,0	12,3	2,7
2014	185014	151937	33077	15,1	12,4	2,7

Source: Compiled by the authors on statistical information Central Base of Statistical Data of the Federal State Statistics Service, 2016

The natural population growth was declining steadily throughout the twentieth century and in the early 1990s this figure reached its negative values – from 7,0‰ in 1970 till -5,2‰ in

2000. After 2006 there was an increase in the natural population growth due to the rise in the crude birth rate and the 2,4 per cent decline in the crude death rate in comparison to the previous year. The increasing fertility did not contradict global trends since it resulted from the state demographic policy targeted at encouraging child bearing and encouraging families to have two and more children. Since such measures always have a temporary effect, it can be predicted that the crude birth rate would soon go down unless the state takes additional measures to boost fertility. For example, in 2015 the rate of natural increase fell at 0,2‰. Furthermore, in the twenty-first century, the fertility figures in the region remained at the average low level: for example, in 2012-2014 the figure of the natural population growth in Ural changed insignificantly from 2,7‰ to 2,5‰. In specific areas, however, these processes run differently and the figures demonstrate diverse dynamics. For example, in Kurgan region in this period the natural population growth fluctuated within the negative range, 2,1-2,3‰; in Sverdlovsk region, there were some slight positive changes of this figure, 0,3-0,7‰; in Chelyabinsk, 0,2-0,4‰; and in Tyumen, 8,8‰. This difference in the dynamics of these figures is due to a number of social factors such as housing conditions, income levels, the average population age, and the sex ratio.

Between the mid- and the late twentieth century Ural saw a modest rise in the total de facto population, that ends in 1991 and during the two last decades is negative rate of natural increase observed. For example, regional population in 1991 amounts 12 747 603 people, in 2015 – 12 308 103 people. The retrospective analysis shows, that the general birth rate in 1975 amounts 17,3‰, in 1985 – 17, 9‰, in 1995 the general birth rate fell till 9,5‰.

Thus we found next tendencies in the Ural region:

- the increase of probable life expectancy at the generation birth during the twenty century – from 30, 54 till 70, 93 years;
- the decrease of birth and death rate in the twenty century;
- the decrease of natural increase rates till negative figures (-5,2‰);
- the regional population reducing in the last 20 years at 439500 people.

These statements prove our hypothesis about the first demographic transition`s proceeding and ending in the last three decades of the twenty century in the Ural region.

2.2. Let us consider changes in reproductive and sexual population behavior within the second demographic transition. The population in the Ural region increased till 90s, and then it dramatically decreased till 1999. The population decrease was caused by the low birth rates. For example, in 1990 the summary birth rate in the Ural region amounts 1,9 children for one

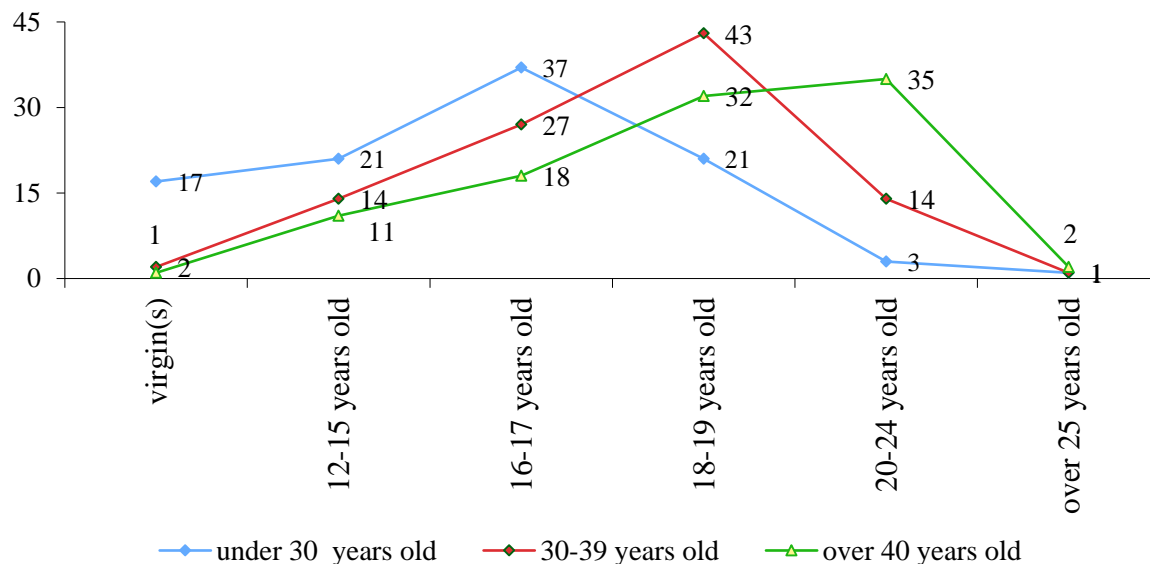
woman, in 1999 – 1,2 children for one woman, that is certainly insufficient for population reproduction. According our selective empirical investigation, where young men and women were asked, the desired child number amounts 2,12 children. Among older age groups this figure in 2007 amounts 2, 3 children for one respondent. So we consider changes in family values, that influences reproductive patterns and reproductive and sexual population behavior.

This proves our hypothesis that the last phase of the first demographic transition ended in 1980s and the second demographic transition started in 80-90s and ended at the beginning of the twenty-first century.

For changes in reproductive and sexual population behavior to be examined we provided an empirical study. As a research method we used a survey: 665 people were asked, among them the young generation (till 30 years old) – 44%, middle age generation (30-39 years old) – 19%, the old age generation ( from 40 and older) – 37%; women – 51%, men – 49%.

The fact, that sex was separated from family reproductive function as a feature of the second demographic transition was confirmed by age lowering, when sexual debut takes place. The age of sexual debut decreased.

**Fig. 1: The age of sexual debute (in percentage)**

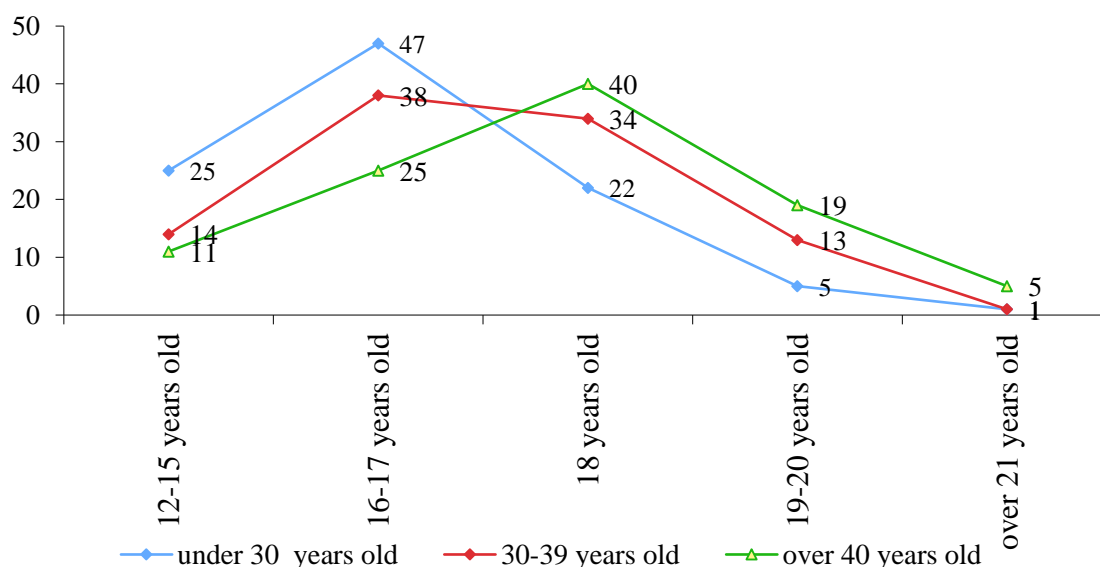


Source: compiled by authors

In 1965 the young people numbers, which started their sexual life till 16 years old amounts 5,3 %, in 1972 – 8,2 %, in 1995 – 12,1 %. According our proved study this figure in 2007 is significantly higher – 21%. The Figure 1 shows the following trend – the younger is a

generation, the earlier its representatives started sexual life. In this age the comprehension about marriage is not yet formed.

**Fig. 2: The age of admissible sexual debut in comprehension of different age respondents (in percentage)**



Source: compiled by authors

According young and older age respondents ages of admissible sexual debut are different: respondents under 40 years old consider 16-17 years old as admissible age of sexual debut, respondents over 40 years old – over 18 years old. The older age respondents consider a loss of virginity as a marital status change, i.e. within a marital scenario of sexual life.

Thus we found next tendencies in the Ural region:

- The decrease of summary birth rate;
- The reduced need in children, that influences decrease of desired children number among young people;
- The change in reproductive and sexual population behavior because of the decreased age of sexual debute and sex does not associated with marital and reproductive behavior.

These statements prove our hypothesis that the last phase of the first demographic transition ended and the second demographic transition started in 1990-2000s.

The changes in the value of children to the family had a negative impact on the reproductive attitudes, which proves our hypothesis that Russia completed the last stage of the

first demographic transition in the 1980s, entered the second demographic transition in the 1980-1990s and was to complete these stage at the beginning of the twenty-first century.

2.3. Let us consider the figures of the Ural population migration within the third demographic transition theory. If we follow David Coleman's theory, a change in the reproduction figures will be caused by internal and external migration processes rather than the actual change in these figures (Bocquier, Costa, 2015).

**Tab. 2: The Ural Federal district migration in -and outflows with far foreign countries and CIS-countries in the 1. Quarter 2016.**

	With far foreign countries			With CIS-countries		
	inflow	outflows	migration surplus (+), loss(-)	inflow	outflow	migration surplus (+), loss(-)
Russian Federation	12051	8720	+3331	121029	53157	+67872
Ural Federal District	407	321	+86	13102	4252	+8850
Kurgan region	11	10	+1	502	180	+322
Sverdlovsk region	83	135	-52	2337	592	+1745
Tyumen region	195	83	+112	7367	2648	+4719
Chelyabinsk region	118	93	+25	2896	832	+2064

Source: Compiled by the authors on statistical information Central Base of Statistical Data of the Federal State Statistics Service, 2016

Population migrations play a significant role in demographic processes. This is an especially crucial point for a such region like Western Europe. As far as Russia concerned, intraregional migrations take their place for ever. Due to them virgin and northern lands were treated. After USSR disintegration Russian-speaking migration flows were redirected to Russia. Since last years these flows have decreased. Only guest worker arrivals from ex-USSR Southern Republics like Uzbekistan, Tajikistan are observed. In our region we can observe a low level migration (Table № 2).

Migration regularity within a region proceeds as follows: people leave impaired regions (like Kurgan region) and move to developed and developing ones, where conditions for life and work are better. For example, Tyumen region or Cities like Ekaterinburg.

From 2000 to 2014 in Russia the rates of the population migration varied: the peak growth was observed in 2011 with 319,761 people and the minimal, in 2004 with 41,275, that is, the scale of migration changed almost eightfold. The net migration rate in this period was always positive, which means that the number of immigrants always exceeded the number of emigrants.

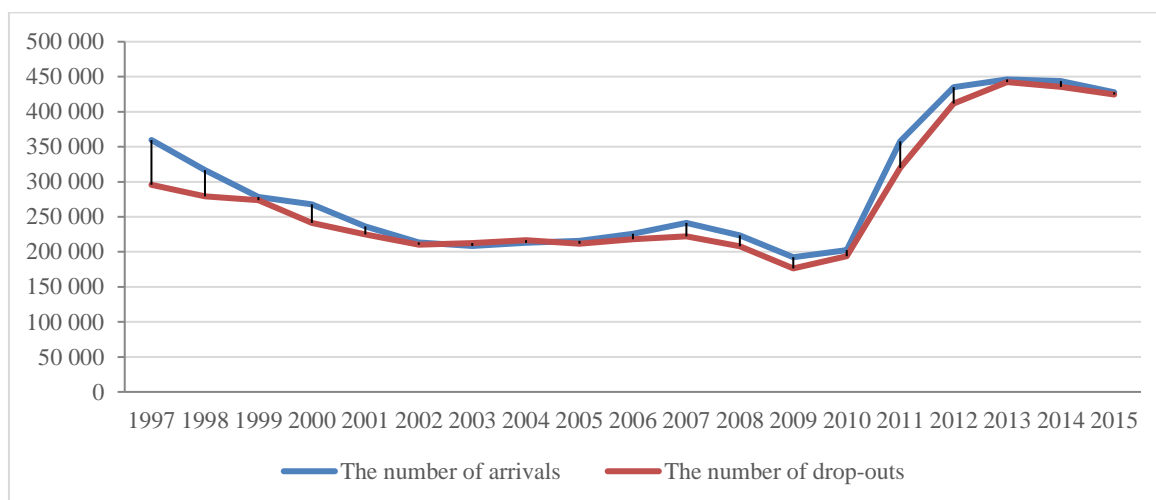
**Tab. 3: Migration results in the Ural Federal district in the 1. Quarter 2016.**



	Inflow	Change To the 1.Quarter 2015	Outflow	Change To the 1.Quarter 2015	Migration surplus (+), loss(-)
Russian Federation	999564	96,5	928361	93,5	+71203
Ural Federal District	93203	100,2	87052	93,6	+6151
Kurgan region	5850	98,2	6646	91,8	-796
Sverdlovsk region	24790	94,5	23826	92,7	+964
Tyumen region	41379	101,3	36670	90,7	+4709
Chelyabinsk region	21184	106,2	19910	101,5	+1274

Source: Compiled by the authors on statistical information Central Base of Statistical Data of the Federal State Statistics Service, 2016

**Fig. 3: Migration of population in the Ural Federal District**



Source: Compiled by the authors on statistical information Central Base of Statistical Data of the Federal State Statistics Service, 2016

Let us consider the migration processes by using the case of Ural. The Fig.3 shows the simultaneous character of emigration and immigration curves. The highest level of migration in this region, 421,004 people, was observed in 2013. The intraregional migration was 286,519 people, that is, 68% of the total migration turnover, while in other Russian regions migration flows accounted for only 32%. The lowest regional migration was observed in 2009, when the level of migration flow was 172,313 people for all Russian regions, which included the intraregional migration of 115,450 people in Ural (67%). The maximum share of internal migration in this period was in 2004: it accounted for 70% from the regional migration to all regions, which can be explained by the falling figures of external migration and the redistribution of flows to internal, more specifically, intraregional migration.

Thus we found next tendencies in the Ural region:

- The migration balance contains insufficient positive figure;
- The level of extraregional migration is low;

- The intraregional migration prevails;
- The rates of migration exchange between foreign countries do not show a stable growth and in the recent years the rates of international migration have been declining.

All these statements provide an idea, that Ural regional distinctive feature is that the migration balance insufficiently influences a regional demographic situation in the last decades. Taking into account reached frequencies and birth and death densities, we can conclude, that general regional population remains at the same level and no serious changes in ethnic and national population characteristics are foreseen, i.e. the Ural region does not tread into the third demographic transition according D. Coleman.

## **Conclusion**

Based on provided demographic tendency analysis by using comparative model authors

- Found problems and distinctive features of demographic processes during the twenty-twenty-one centuries;
- Proved that in the Ural region the first demographic transition, associated with intensity changes in birth and death rates took place and the second demographic transition is ending, associated with reproductive and sexual behaviour changes, that authors` empirical investigations confirm;
- Found that in contrast to Russian Federation the regional distinctive feature is the absence of the third demographic transition because of the weak impact of the positive migration balance on demographic processes.

## **Acknowledgment**

The work was supported by Act 211 Government of the Russian Federation, contract №02.A03.21.0006.

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