

CENSUS ATLAS OF RUSSIA: FERTILITY

An NCEEER Working Paper by

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TITLE VIII PROGRAM

Project Information*

Principal Investigator: Timothy Heleniak
NCEEER Contract Number: 828-06
Date: August 29, 2014

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* The work leading to this report was supported in part by contract or grant funds provided by the National Council for Eurasian and East European Research, funds which were made available by the U.S. Department of State under Title VIII (The Soviet-East European Research and Training Act of 1983, as amended). The analysis and interpretations contained herein are those of the author.

Executive Summary

This is one of several papers which analyze the results of the 2010 Russian population census. This paper examines fertility in of Russia based on the results of the 1989, 2002, and 2010 censuses and vital statistics.

Introduction

This is one of several papers which analyze the results of the 2010 Russian population census. This paper examines fertility in of Russia based on the results of the 1989, 2002, and 2010 censuses and vital statistics. The paper starts by examining fertility issues in Russia followed by analysis of trends over time from the last three population censuses conducted in Russia and then over space by focusing on regional-levels trends. Both period and cohorts trends in fertility are examined. Fertility has fallen during the post-Soviet period in Russia by either period or cohort measures as there has been a shift towards a later start to childbearing and smaller numbers of children upon completion of childbearing. This is largely due to women (and couples) delaying family formation and the start of childbearing in favor of increased education and starting careers as returns to education have widened considerably in Russia's new market economy. The number of children that women have at different levels of education has not changed much but what has changed is that more women are moving into higher levels of education with lower fertility rates. In a shift towards the pattern found in Western Europe, Russian women ages 25 to 29 now have higher fertility than women ages 20 to 24, which has the highest fertility during the Soviet period. Women in rural areas have more children than those in urban areas and there are significant differences among women by ethnicity with ethnic Russian women having among the smallest number of children. These differences by residence and ethnicity explain much of the regional patterns of the number of children ever born with Moscow and St. Petersburg having the smallest number of children ever born and many of the ethnic regions having the largest.

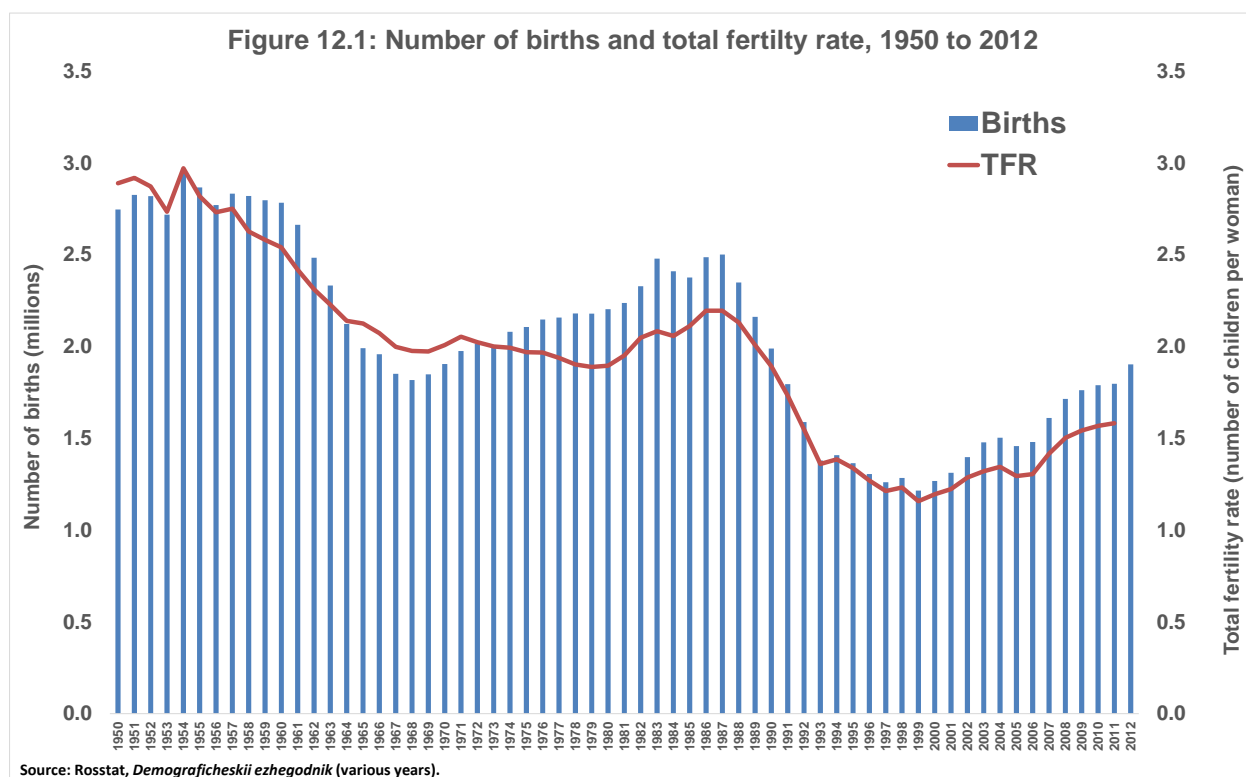
12. Fertility

Fertility in Russia

The number of children women are giving birth to is crucial to population growth, more so than mortality. For a population to just replace itself, women need to give birth to about 2.1 children, allowing for some mortality. For that reason, this is termed replacement-level fertility. Other factors in addition to the fertility level such as the age structure, mortality, and levels of immigration influence population change but over the long run, at levels of fertility above replacement level, populations will grow. This is the case in most developing countries of the world today and was the case in Russia until the mid-1960s, when Russian women began to settle into a two-child pattern. At levels below replacement level, populations will decline over the long run. This is the case in most countries in Western Europe and a number of the countries of the former Soviet Union, including Russia since the mid-1990s. Not for the first time in recent decades, the Russian government is concerned about the impact of declining fertility and is taking active measures to induce women, and couples, to have more children (Rivkin-Fish, 2010).

Trends in the total fertility rate: There are two commonly-used measures of overall fertility levels. One is the total fertility rate, (TFR), which is the hypothetical number of children a woman would have if she passed through her childbearing years at the current age-specific fertility levels. This synthetic statistic is a *period* measure of fertility and is the more commonly used and cited fertility statistic because it can be computed annually from vital registration data for countries with complete registration data. Russia is regarded as having complete or nearly complete vital registration data.

By the 1960s, Russian women had completed the fertility transition and adopted the two-child family as the norm (figure 12.1). The number of births fell from a recent peak of 2.5 million in 1987, during a period of pro-natalist policies, to a low of 1.2 million in 1999, then increased to 1.9 million in 2012. The mortality increase in Russia has been well publicized, but the fertility decline actually has had the largest numerical impact on population decline. The fertility rate in Russia also peaked during the pro-natalist period in 1987 at 2.194 children per woman, the last time it was above the replacement level. Thereafter, it declined sharply, reaching a low of 1.157 children per woman in 1999 before increasing to 1.582 children per woman in 2011. Even with the recent rise, the fertility rate remains below replacement level and foreshadows continued population decline.



The recent trend in Russia of lower fertility is part of a continued fertility transition often referred to as the Second Demographic Transition, where in addition to lower levels of fertility, the age pattern of fertility also shifts to older ages (Philipov & Kohler, 1999). Other fertility trends associated with the Second Demographic Transition include a decrease in marriage rates, increase in divorce rates, increased childlessness, and increases in non-marital births. Figure 12.2 shows the changes in the ages at which women in Russia give birth over time and especially the significant changes in the post-Soviet period. In 1959, the total fertility rate was 2.6 children per woman, which was significantly above replacement level and was leading to population growth. At that time, women ages 20 to 24 and 25 to 29 had comparable and high fertility.

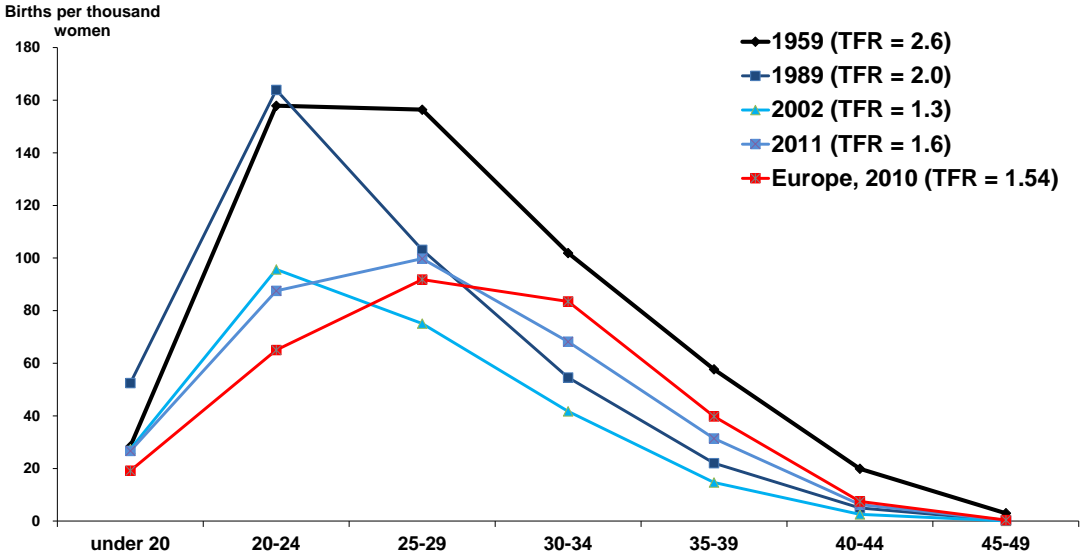
By 1989, just prior to the economic transition, women ages 20 to 24 had the same fertility as this age group in 1959 but fertility among women ages 25 and older had declined significantly, bringing the total fertility rate down to 2.0 children per woman. Thus, women in Russia had settled into a two-child pattern with births early in their child-bearing years.

In 2002, the total fertility rate had fallen to 1.3 children per woman driven in part by fertility for women ages 20 to 24, which had declined by one third since 1989, from 164 to 96 births per thousand women. There were declines at all other ages but not as significantly as this. While women ages 20 to 24 still had the highest fertility rate, there was evidence of a shift towards later childbearing as demands for education increased in the new market economy and returns to education widened among the different levels of education.

By 2011, fertility for women ages 25 to 29 exceeded that for women ages to 20 to 24, moving Russia closer to the childbearing pattern of women in Europe of later childbearing. The

total fertility rate had also rebounded to 1.6 children per woman from its post-Soviet low of 1.157 in 1999. Among European women, the peak childbearing is of women in their late 20s at levels significantly higher than women in their early 20s and continued high fertility in their early 30s. Currently, Russian women appear have completed a transition towards the pattern of women in Europe with comparable below-replacement-level fertility levels and similar age-specific patterns.

Figure 12.2: Age-Specific Fertility Rates, 1959-2011



Sources: Rosstat, Demographic Yearbook, various editions and UN Population Division, World Population Prospects 2012.

Demographers have identified four determinants that account for the majority of the differences in fertility levels among societies and within societies over time: the share of women who are married or in a union; the prevalence of contraceptive use; abortion rates; and level of postpartum breast-feeding (Bongaarts, 1978; Bongaarts, 1982). Social and economic factors work through these determinants to influence the fertility rate. In Russia, this includes the steep income declines in the 1990s and increases in the direct costs of children during the transition

period.

Changes in the shares of women who are married and the length of marriages, when they are engaging in regular intercourse and exposing themselves to the possibility of becoming pregnant, are important factors in determining the fertility rate in Russia. The annual number of marriages fell from 1.4 million in the late 1980s to a low of 850,000 in 1999 before increasing to 1.3 million in 2011 (see chapter 4.3 for further discussion of changes in marital status in Russia). In 1987, there were 580,000 divorces and there were 40 marriages per 100 divorces. Meanwhile, the number of divorces steadily increased peaking at 853,000 in 2002 before declining to 644,000 in 2012. When the number of divorces were at their peak, there were 84 divorces per 100 marriages, meaning that the rate of increase in the number of couples through marriage was quite low. The ratio of divorces to marriages has declined since that peak but remains much higher than in the Soviet period. Thus, with overall declines in marriages and the rise in divorces in the post-Soviet period, people are living much less time in marriages. This is important for fertility levels because of the continued importance of marital fertility to the overall fertility level in Russia. Though marriage and childbearing are no longer as synonymous as they once were, the change in the number of marriages in Russia can still explain a significant portion of the overall fertility trends.

With the economic transition and the opening of the Russian economy, the levels of contraceptive use have increased considerably. The contraceptive prevalence rate went from 31.5 percent in 1990 to 73 percent in 1999 (U.S. Bureau of the Census, 2012; U.S. Department of Health and Human Services, 2003). The bulk of this increase was greater use of more effective,

modern contraceptive methods (e.g., the pill, IUDs, condoms, sterilization). Soon after the Bolsheviks took power, abortion was legalized. Over time, an abortion industry emerged, and abortion became the cheapest and most readily available form of fertility regulation. From 1960 to 1990, the abortion ratio (number of abortions per 100 births) averaged about 220 (David, 1999). The abortion ratio fell from 205 in 1989 to 63 in 2011 (Rosstat, Annual editions). However, the historical legacy of reliance on abortion remains, as this ratio means that less than two-thirds of conceptions result in a birth. Legislation enacted during the 1990s further increased the grounds under which a woman could obtain an abortion upon request. Russia continues to have among the highest abortion rates in the world, and abortion remains a major fertility-inhibiting factor (United Nations Population Division, 2013).

One issue that Russia will confront is that the smaller cohorts of women born in the late 1980s will soon enter their peak childbearing years. The number of women of childbearing age peaked in 2003 at 40 million and is expected to fall to 32 million by 2020. More crucial is that the number of women aged 20 to 29 peaked at the end of the 2000s at 12 million and will decline to 7 million by 2020. In Russia, women of these ages give birth to 65 percent of the children who are born. Without a massive increase in fertility levels, the number of births in Russia will decline from its current level of 1.9 million to less than one million per year in 2025.

Children ever born and fertility policy: The second measure of fertility is children ever born (CEB) which is a *cohort* measure that measures the actual number of children that different cohorts of women have given birth to. Typically, such data are only available from population censuses, thus is less often used and cited than the total fertility rate. One drawback to using data

on number of children ever born is that many of women have not yet completed their childbearing period and thus the ultimate number of children they will have has not yet been determined. However, much of the focus of this chapter is on data on the number of children born to women in Russia from the 2010 and previous censuses.

To understand post-Soviet fertility patterns and the impacts of the enormous social and economic change of the 1990s and government social policy, it is helpful to go back and review fertility trends and policies since the 1980s. Policies during the Soviet period were part of the state's perceived obligation to take on responsibilities towards its citizens that would be considered private matters in most countries, including the decision to have children and their subsequent upbringing. Evidence of this is the large share of children who are institutionalized and deprived of parental care, a legacy that lives on in the post-Soviet period. Most family policies during the Soviet period were not directed towards increasing the fertility rate but had that effect, as a byproduct. There were generous maternity benefits, an extensive system of subsidized daycare which allowed women to work while remaining in the labor force (Brainerd, 2007). There was also the possibility of obtaining scarce housing but that depended on family size. While incomes were not high, they were stable and guaranteed, there was no open unemployment and there was free medical care and education. The withdrawal or lack of all of these factors is what has caused women in post-Soviet Russia to reconsider having children

In the 1980s, a new policy specifically designed to stimulate the birthrate was introduced, which included birth premiums, child allowances, a year of paid maternity leave, and other benefits. These family and maternity policies of the 1980s had the effect of increasing and also

compressing fertility to younger ages, because one of the conditions was that one of the spouses had to be less than 30 years old (Avdeev, 2011). These policies were regionally (and ethnically) differentiated and aimed to stimulate second and third births among Slavic women in the Soviet Union. They had their desired effect of increasing the probability of women having a second child (Barkalov, 2005).

Changes in annual total fertility rates can reflect changes in the average number of births, which is known as the *quantum effect*, or they can reflect shifts in the timing of births towards later childbearing, which is known as the *tempo effect*. The postponement of births obviously leads to a rising mean age at birth, which is the case in post-Soviet Russia, but also affects the observed fertility rates and thus the total fertility rate (Philipov & Kohler, 1999). A measure called the *adjusted total fertility rate* separates out the quantum and tempo effect and equals the total fertility rate that would have been observed if there had been no postponement of births (Bongaarts & Feeney, 1998). Women can give birth later, which decreases the total fertility rate through the tempo effect but can have the same completed fertility if they “catch up” later, so that the quantum effect causes a rise in the fertility rate later. However, as will be shown below, this does not appear to be the case for women in Russia. Two studies have shown that the adjusted total fertility rate declined less than the observed total fertility rate for all countries except Russia. One study was five countries in Central and Eastern Europe (Philipov & Kohler, 1999) and one was for a large group of developed countries (Bongaarts, 2001). What this means is that in Russia unlike the other countries, the fertility decline was due more to the quantum effect than the tempo effect (Barkalov, 2005; Bongaarts, 2001).

Between 1988 and 1993, there was little evidence of a postponement of births in Russia as the mean age at first and second birth actually decreased. However, after 1993, the effects of postponement of births, the tempo effect, began to impact fertility change the most, especially the postponement of second births. Another study showed that the main factor driving the decline in Russia is the reduction in the quantum of fertility, in particular the low propensity to have a second child, as studies show evidence of a shift to a one-child family norm in Russia (Avdeev, 2011). There is no consensus of the extent that the increased birth rates of the late 1980s contributed to the decline in the early 1990s (McDonnell, 2010). Some say that the fertility policy measures of the 1980s explain the entire variation of the decade from 1987 to 1997. The key lies in examination of cohort fertility of women who had their peak childbearing years during this time, which is done below.

A paper on “lowest-low” fertility, defined as a period total fertility rate below 1.3 children per woman, argues that the emergence and persistence of lowest-low fertility is due to four factors, all of which apply to Russia (Kohler, 2001). First, the timing of births reduce the period total fertility rate below the corresponding cohort fertility rate. Second, later childbearing is a rational response to increased returns to human capital and high economic uncertainty in early adulthood. Third, social interaction reinforces the behavioral adjustment of individuals. Fourth, delayed childbearing is associated with ultimately lower completed childbearing. The study classified fourteen countries based on their total fertility rates in 1999 which included three in Southern Europe, five in Central and Eastern Europe, and seven in the former Soviet Union, including Russia. It points out that lowest-low fertility might not lead to particularly low cohort fertility if it is just a temporary trend. In Russia, the total fertility rate was below 1.3 children per

woman for six years from 1996 to 2002, and has risen from a low of 1.1.6 children per woman in 1999 to 1.58 in 2011, an increase of 0.4 children per woman. The study points out that increased childlessness is not the major factor leading to reduced fertility. As will be pointed out below, levels of childlessness in Russia have stayed roughly the same, among women who have completed their childbearing but is higher among younger women who are in the midst of their childbearing years.

A peculiarity of Russian fertility levels that remains somewhat unexplored is the role of males. As noted in chapter 4 on gender, age, and marital status, Russia has one of the lowest male-to-female sex ratios in the world and this ratio has actually declined slightly during the post-Soviet period because of high male mortality. One study examined the effects of changing sex ratios on marriage and fertility of Russian women by quantifying the costs of the heavy male mortality during World War II (Brainerd, 2007). The study concluded that women in cohorts or regions with lower sex ratios experienced lower rates of marriage and fertility and higher rates of non-marital births and abortions than regions or cohorts less affected by World War II deaths. Gender roles within Russian families also play a role in determining fertility outcomes (McDonnell, 2010). Many of the Soviet family and fertility policies removed the link between family finances and reproductive behavior and in doing so, also excluded many men from fertility and childrearing involvement. Soviet women were given the opportunity to stay in the labor force but this resulted in their double burden of being both workers and mothers simultaneously. There is a strong correlation between low gender equity and very low fertility rates (McDonnell, 2010). This was done correlating the UN gender-related development index and the total fertility rate for a number of developed countries (not including Russia). When

Russia is added, its gender-related development index is lower than the other developed countries and it has among the lowest total fertility rates (based on data for the early 2000s).

The transition period which started in 1992 when the Soviet Union broke apart, prices were liberalized, and large sectors of the economy were private began a steep economic contraction and considerable social uncertainty. Incomes declined considerably, large portions of the population became poor, income inequality widened, and many social and child support benefits disappeared or almost completely lost their value. During the transition period in Russia, there was a rapid increase in the returns to education, which played a role in the fertility decline (Grogan, 2002 (September 18)).

Many of the family support policies were carried into the post-Soviet period and some even extended (Rivkin-Fish, 2010). However, with the rapid inflation of the early 1990s, their nominal value was minimal and did not provide sufficient incentive to have children. At a broad macro level, the large decline in incomes caused much of the fertility decline during this period (Brainerd, 2007). One of the first benefits to be discarded with the massive privatization of firms in the early 1990s was subsidized daycare. In 2005, the responsibility for many of these benefits were passed to the regional level and they often either went unpaid or were mixed with other social expenditures.

There is little evidence that women in Russia were “catching up” in the late 1990s and early 2000s for births postponed during the difficult period of the early 1990s (Brainerd, 2007). There was an increase in fertility rates for women ages 25 to 29 and 30 to 34 beginning around

1999 but these increases were too small to compensate for the earlier deficits. They most likely were the start of a shift to later childbearing.

Starting in January 2007, a new package of pro-natalist policies was introduced, designed to halt or reverse the steep decline in Russia's birth rate. The package included large child benefits of \$113 a month for a second child, longer maternity leaves of eighteen months at 40 percent salary, and a payment of \$9,000 to each woman who had a second child (Brainerd, 2007). Russian women are increasingly reluctant to leave the labor force to have and care for children, and the policy has clauses to guarantee reentry into the labor market. There are also components that seek to address the poor social status of parents, to make having children more desirable. These measures followed Putin's state of the nation address in May 2006, where he stated that the state had an obligation to help women a second child because the country was genuinely interested in increasing the birthrate (Rivkin-Fish, 2010). The long-term effectiveness of these policies remains to be seen, however, empirical evidence has shown that pro-natalist programs typically encourage couples to have children sooner but not to increase the overall number of children born (Central Intelligence Agency, 2001).

Fertility questions and data

There were two fertility questions asked in the 2010 census to women 15 and older. The first was how many children they had given birth to (including those who had subsequently died but not including stillbirths). The second question was the date of their first birth. From these questions, data were compiled on the number of women by how many children they had given

birth to and the number of births by age of women. These data were also compiled by urban-rural and by region. Additional cross-tabulations were compiled on the employment and marital status of women, age at first birth, number of births by educational level of women, and the number of births by ethnicity of women.

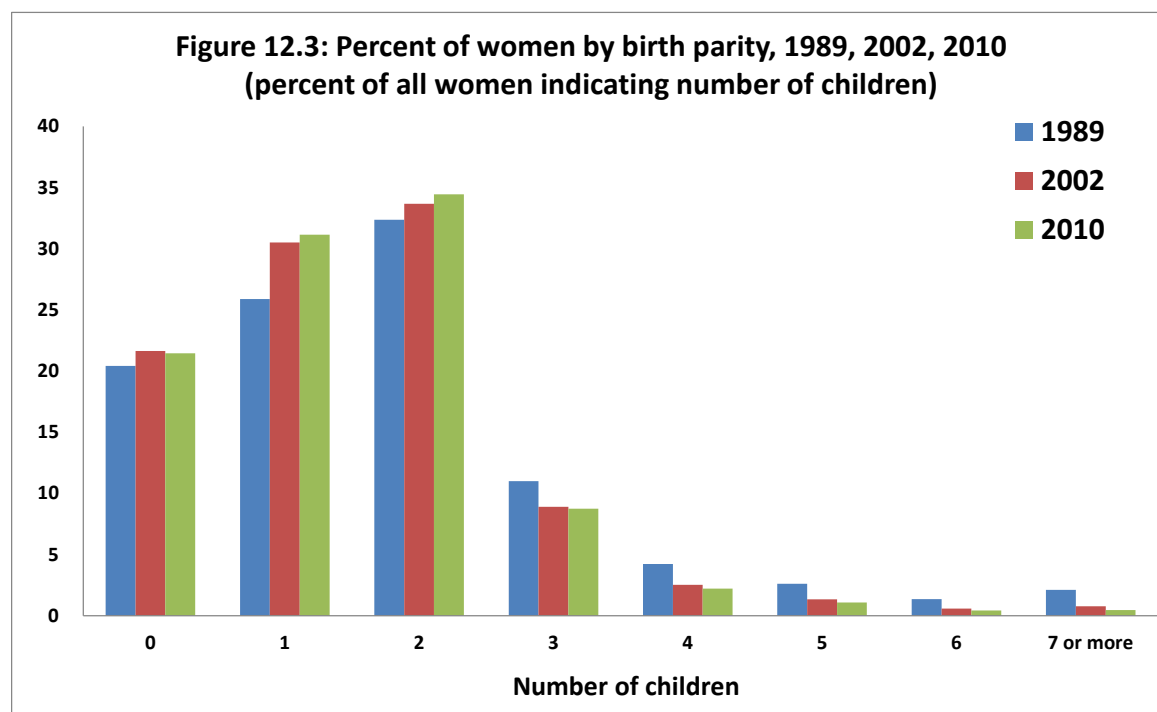
National-level trends in children ever born

This section discusses the number of children ever born to women in Russia from the 1989, 2002, and 2010 censuses. Data are examined on the total number of children ever born, number of children by age of women, number of children to women in urban and rural areas, number of children by employment status, number of children by marital status, average age at first birth, number of childless women, number of children by level of education of women, and number of children by ethnicity. The national trends on children ever born provide some explanation of the regional trends discussed in the following section.

Since 1989, the number of children ever born has declined in each of the two subsequent censuses. In 1989, the number of children born per thousand women was 1,796. This figure declined to 1,513 in 2002 and further to 1,469 in 2010.¹ The percent of childless women has only risen slightly from 20.4 percent in 1989 to 21.5 percent in 2002 and 2010 (figure 12.3). The percent of women giving birth to just one child rose from 26 to 31 percent of all women between 1989 and 2010. The percent of women having two children has also risen slightly, while the percent of women at each parity level from three children and higher has gone down between

¹ The percent of women not indicating the number of children they had given birth to has steadily risen. In 1989, 0.4 percent of women did not respond to this question, in 2002, 3.6 did not, and in 2010, 5.4 percent did not.

1989 and 2010. Thus, along with the decline in the total number of children born to women is a shift towards more women giving birth to smaller numbers of children.



Further evidence of the decline in the number of children is shown when disaggregating the proportion of women who attain each birth parity. Figure 12.4 shows the number of 30-to-34 year old and 40-to-44 year old women who had ever attained each birth cohort from 0 to 7 children in the past three censuses. Russian women ages 40 to 44 can be considered to have completed their fertility as 99 percent of births are to women under 40. Women younger than this are still in their reproductive years so their completed fertility is unknown and one of the key questions regarding fertility in Russia are the future levels and patterns. Analyzing births to women 30 to 34 years of age is a fairly good indicator of the emerging fertility patterns in the post-Soviet era as three-quarters of all births are to women under age 30.

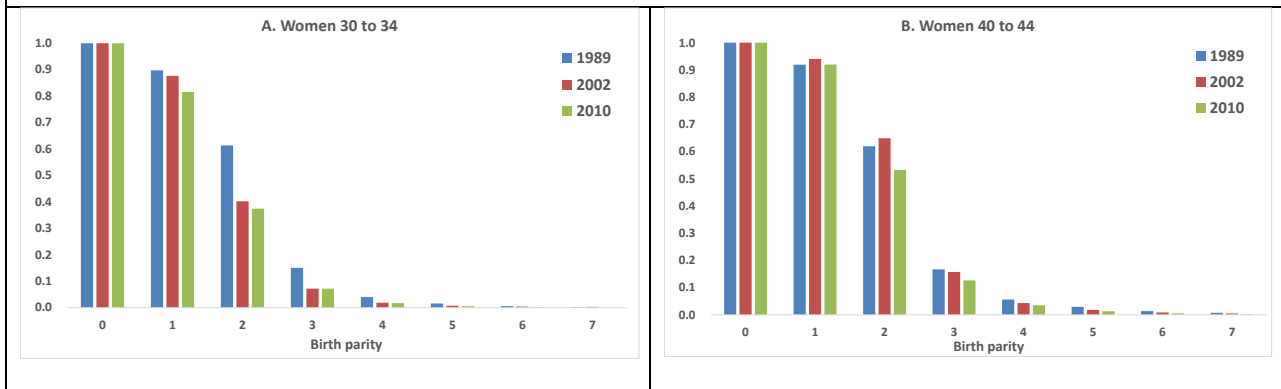
In 1989 and 2002, for women ages 40 to 44, their peak fertility years were during the Soviet period and the proportions who attained each birth parity were rather similar. Over 90 percent had given birth to at least one child (92 percent in 1989 and 94 percent in 2002). Given that between 3 and 7 percent of women in any population are sterile and unable to have children (McDonnell, 2010), the percent of Russian women who become mothers is approaching the biological limits. In 1989 and 2002, two-thirds of women go on to have a second child. It is starting with the third child that the proportions decline considerably with only 16 percent of women having a third child in those years. Women who were 40 at the time of the 2010 census were born in 1970 and started their fertility period at about the time of the breakup of the Soviet Union and the start of the economic transition. The proportion who had a first birth is about the same as those in the two previous censuses but the largest difference is the proportion who had a second birth which declined to just over half, 53 percent from 65 percent in 2002. The proportions at each subsequent parity are also less.

More significant differences are for women ages 30 to 34. In 1989, the peak fertility period for women of these ages was prior to the breakup of the Soviet Union and economic transition. In 2002, for women of these ages, the start of their peak fertility period coincided with the start of the economic transition and for those in 2010, they turned 20 in 2000, at about the time of the nadir of fertility in the post-Soviet period. Starting with 30 to 34 year old women in 2002, it is already apparent that they are shifting to a new and lower fertility pattern with smaller proportions of women attaining each parity. In 1989, 90 percent of women ages 30 to 34 had a first birth, 61 percent had a second, and 15 percent had a third. In 2002, roughly the same

proportion of women ages 30 to 34 had a first birth, 88 percent, but the proportion having a second birth dropped considerably to 40 percent, and even further to just 7 percent having a third birth. These proportions declined even further in the 2010 census for women ages 30 to 34, as only 82 had had a first birth and only 37 percent had had a second birth.

By age 30, Russian women have only given birth to three-quarters of the children they will likely have. Obviously, the number of childless women will decrease as many women will have their first child in their thirties, as is the case in many western countries. Also, many women who have only had one child will go onto to have a second. There are not sufficient data in the census to be able to project completed fertility according to a well-accepted formula (UNFPA, 2013). However, based on the fertility levels at different parity levels already attained by women 30 to 34, it is quite likely that their completed fertility will be much lower than previous cohorts of women.

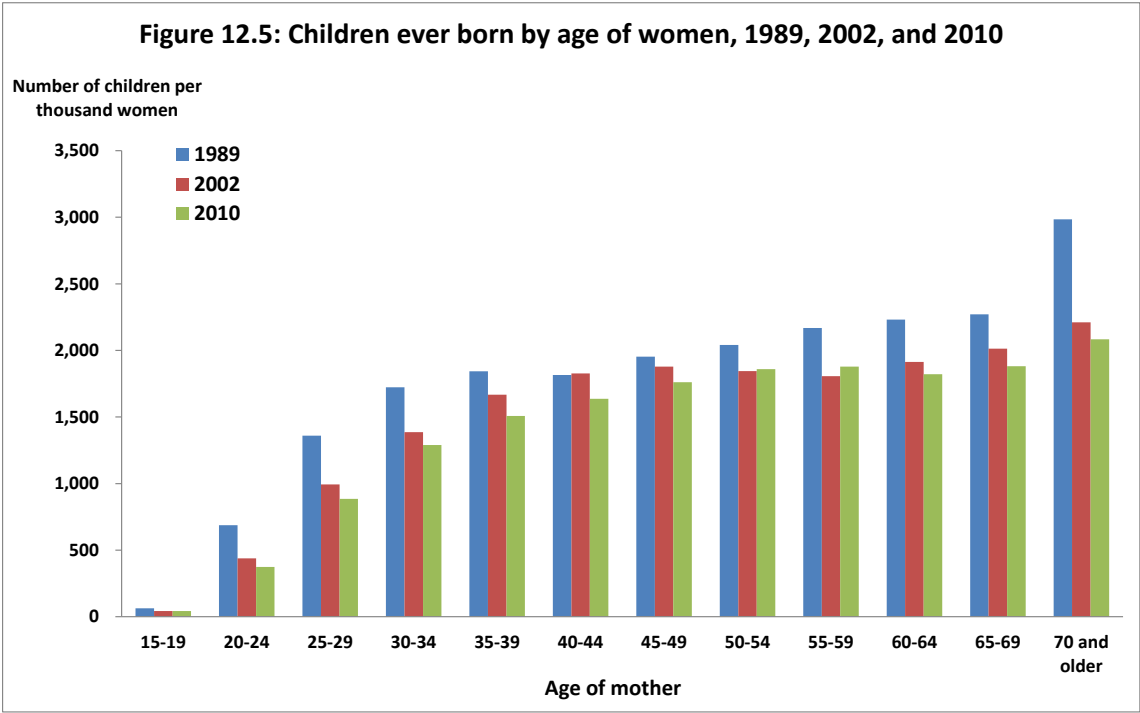
Figure 12.4: Proportion of women ages 30 to 34 and 40 to 44 ever-attaining each birth parity, 1989, 2002, and 2010



Demographers use a concept called parity progression ratios to measure the percent of women who give birth to a certain number of children who then go onto have another child, or attain the next birth parity. The key to population change, or growth, in Russia and other developed countries are the proportion of women who attain the first, second, and third births. In 1989, 90 percent of women ages 30 to 34 had a first birth and of these, 70 percent would go onto have a second, and of these a quarter would have a third. In 2002 and 2010, the percent of these women who had a first birth had declined but more so, less than half would go onto have a second, and of those having a second, the percent going onto have a third was less than 20 percent.

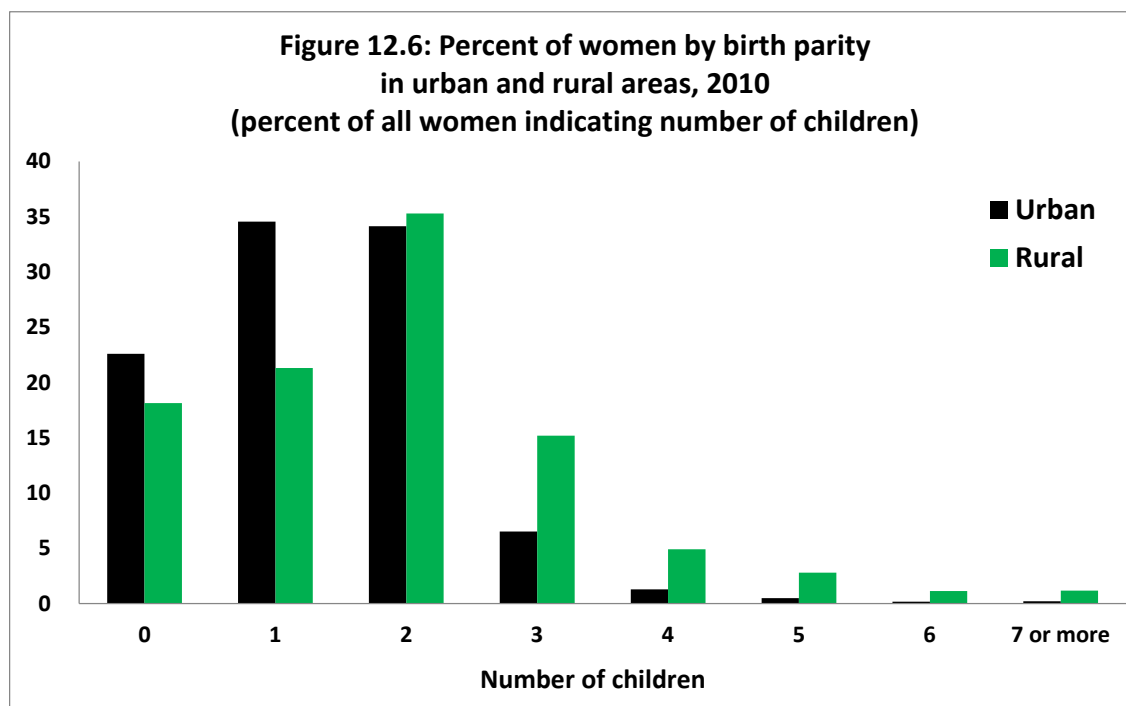
The number of children born at each female age group has been declining since 1989 along with the overall decline in the average number of births per woman. Comparing children ever born to women by age in this manner is not comparing the same cohorts of women but is comparing fertility behavior by age over time. The age group with the largest overall decline in the number of children were those ages 70 and older, which declined from 2,985 children per thousand women in 1989 to 2,083 in 2010 (figure 12.5). The latter cohort are women born in 1940 or before who started their childbearing period in 1955 at the time when fertility in Russia was beginning to make a transition from three or more children on average to the two-child pattern that Russian women maintained for three decades from 1960 until the end of the Soviet period. The largest percent declines were among women ages 20 to 35, or those in the prime child-bearing years, which is evidence of the delayed and overall decline in fertility in Russia. For instance, in 1989, women ages 20 to 24 years gave birth to 687 children per thousand women. This figure dropped by nearly half in 2010 to 374 children per thousand women. The

overall mean age at childbearing has increased by nearly three years from 25.0 years in 1991 to 27.9 years in 2012 (Rosstat, 2013). Census data on age at first birth also show the trend towards later births. In 2010, women ages 45 to 49, who turned 20 years old and started began their peak fertility years in 1981, 58 percent gave birth to their first child between ages 20 and 24. Women ages 30 to 34 years of age, who turned 20 in 1996, the same percent who had their first child in their early 20s had dropped to 48 percent.



Children ever born by marital and employment status: Not surprisingly, women who are employed have lower fertility than women who are not employed. In 2010, employed women had on average 1,322 children per thousand women against 1,469 children per thousand women for all women. The link between marriage and fertility was stronger as married women had on average 1,682 children per thousand women, though the gap between fertility of married and non-married women is narrowing.

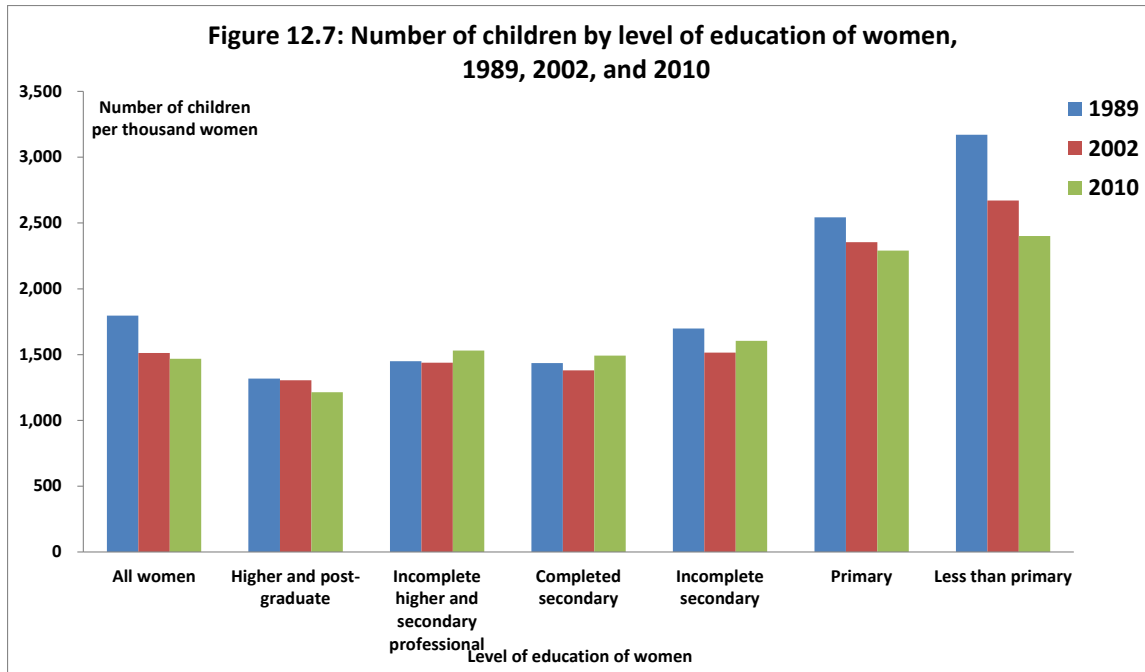
Urban-rural levels of children ever born: There are significant urban-rural differences in the number of children ever born and in the percent distribution by birth parity. In 2010, urban women had on average 1,328 children per thousand women while rural women had 1,876, a difference of over a half a child. These urban-rural differences have narrowed slightly since 1989. Urban women have higher shares of childlessness than rural women, 23 percent against 18 percent, and a significantly higher share with just one child, 35 percent against 21 percent (figure 12.6). The share of women with two children is roughly equal between urban and rural women but at parities from three children and more, rural women have higher shares than urban women. These urban-rural differences are important when examining regional trends in fertility as there are large differences between the percent of populations residing in urban and rural areas among regions.



Children ever born by level of education: Further evidence of the shift to later or no children is the rising percent of women who are childless at age 30. In 1989, 10.3 percent of women ages 30 to 34 had never had a child (EastView Publications Inc. and Interstate Statistical Committee of the CIS (CIS Stat), 1996, pp. Table 4-2). In 2002, this percent rose to 12.3 percent (Rosstat, 2004, pp. Table 12-01), and in 2010 to 18.4 percent (Rosstat, 2013, pp. Table 10-01.). One factor behind the decline in fertility in Russia over the past inter-census period has been the increase in educational levels of women. As returns to education of women (and men) increase and the implicit or explicit support policies for child bearing and rearing were diminished or lost their value, the children-versus-education decision begins to shift in the direction of education. Figure 12.7 shows the number of children that women have at different educational levels in Russia at the time of the 1989, 2002, and 2010 censuses. The figure shows a rather typical pattern of fewer children with more education.

Overall, the number of children per woman 15 years of age and older decreased from 1,796 per thousand women in 1989 to 1,513 in 2002 and to 1,496 in 2010. The number of children per woman stayed about the same at higher levels of education but dropped among women with lower levels of education. What explains much of the decline in fertility is the increase in the number of women pursuing higher education. Between 1989 and 2010, women 15 years of age and older with higher education increased from 11 to 25 percent and those with a secondary professional education from 21 to 32 percent (EastView Publications Inc. and Interstate Statistical Committee of the CIS (CIS Stat), 1996) (Rosstat, 2013, pp. Table 3-01). For women age 35 to 39 in 2010, who turned 20 and started their fertility periods in 1991, at about the time of the breakup of the Soviet Union, the percent with a higher education was 34 percent.

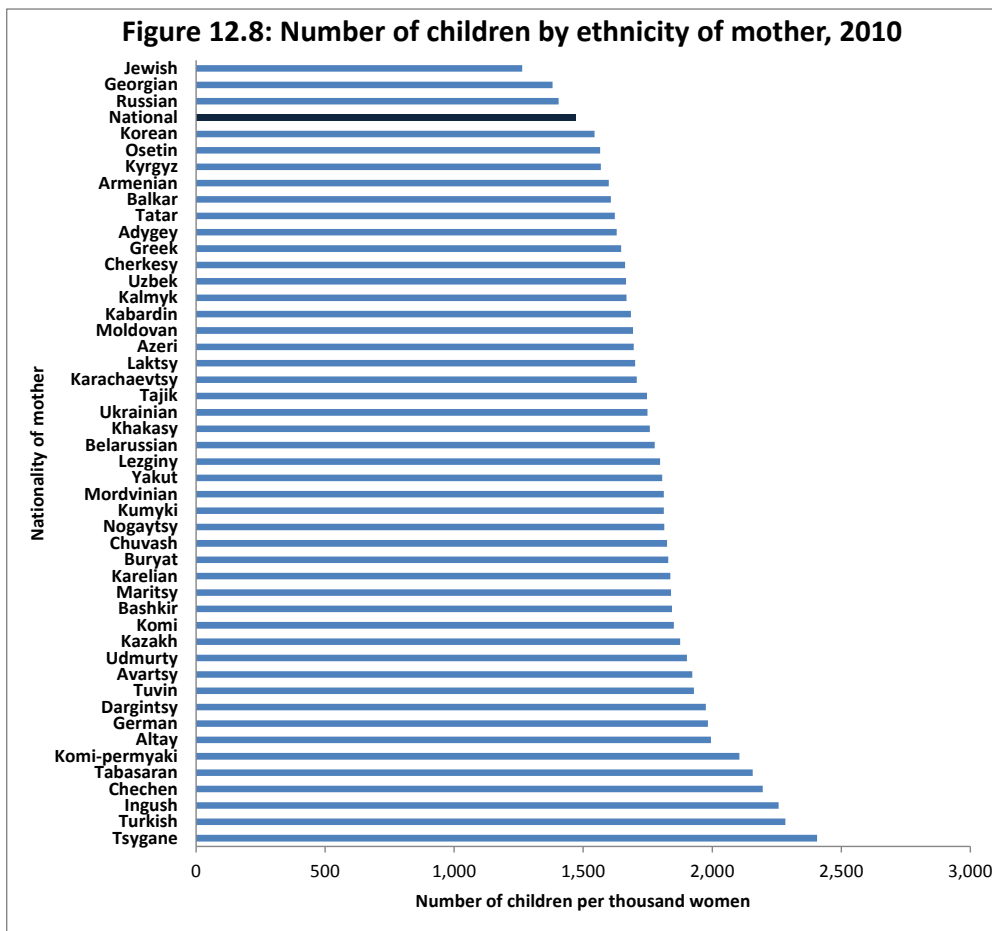
For those ages 30 to 34, the percent rose to 40 percent and for those ages 25 to 29, the percent rose even more to 44 percent. Thus, the link between fertility and education is not so much changing levels of fertility at different levels of education but more women pursuing higher education and thus moving into lower-fertility levels of education.



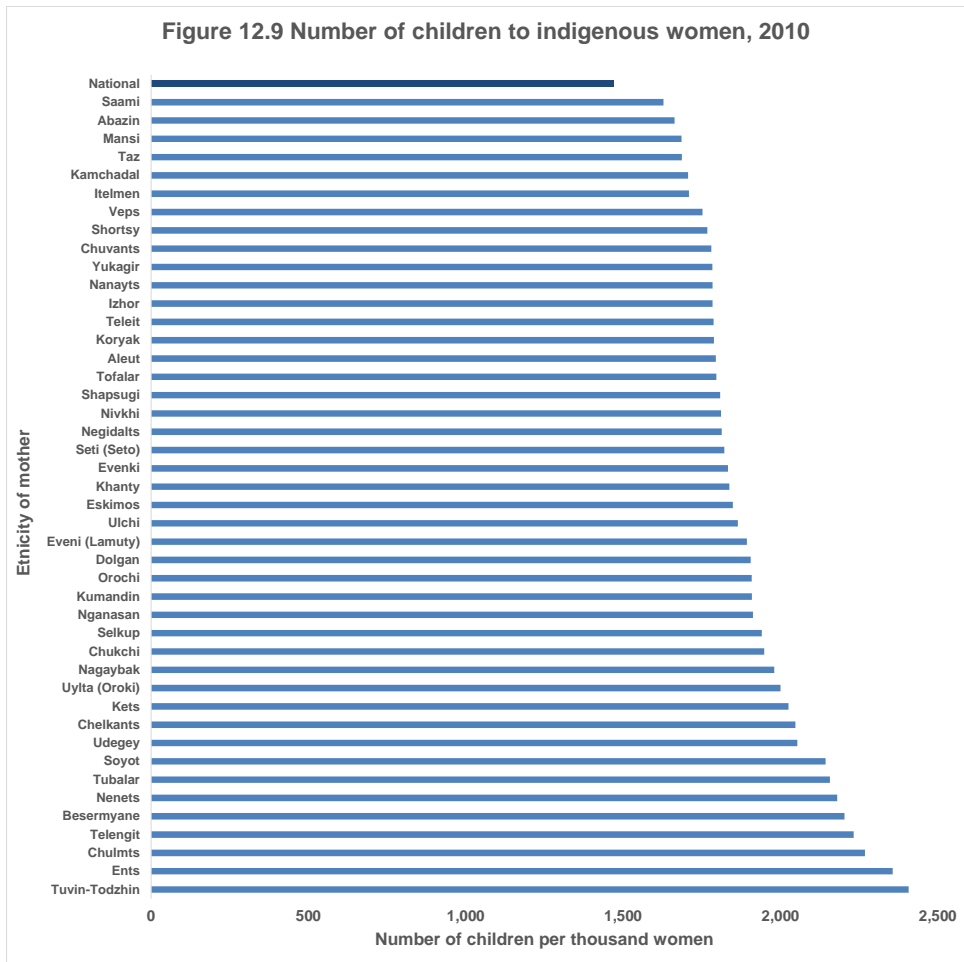
Children ever born by ethnicity of mother: There are significant differences in the number of children born by ethnicity of mothers, which help to explain both national and regional trends (figure 12.8). Of the forty-seven largest ethnicities in Russia, the number of children born to mothers by ethnicity ranged from Tsygane women who gave birth to an average of 2,406 children per thousand to Jewish women who gave birth to half that number, 1,264 per thousand women.² Women of Turkish, Ingush, Chechen, Tabasaran, and Komi-Permyaki ethnicities also had larger numbers of births, all over 2,000 per thousand women. The national

² In 2010, 5.4 percent of women did not indicate how many children they had given birth to. The ethnicity with by far the highest non-response to this question was Ingush women, of which 22 percent did not respond.

average was 1,469 births per thousand women in 2010 and only women from three ethnic groups, Russian, Georgian, and Jewish, gave birth to less than this number. Of course, the weight of Russian women, who make up nearly 80 percent of all women 15 years of age and older, greatly pulls down the national average. These ethnic differences in number of children explain differential rates of growth of ethnic groups at the national level with many of the non-Russian groups having significantly higher rates of fertility than Russian or the national average. As will be examined in the next section on regional trends, these ethnic differences in fertility explain much of the variation, especially in ethnic homelands where there are concentrations of high-fertility groups.



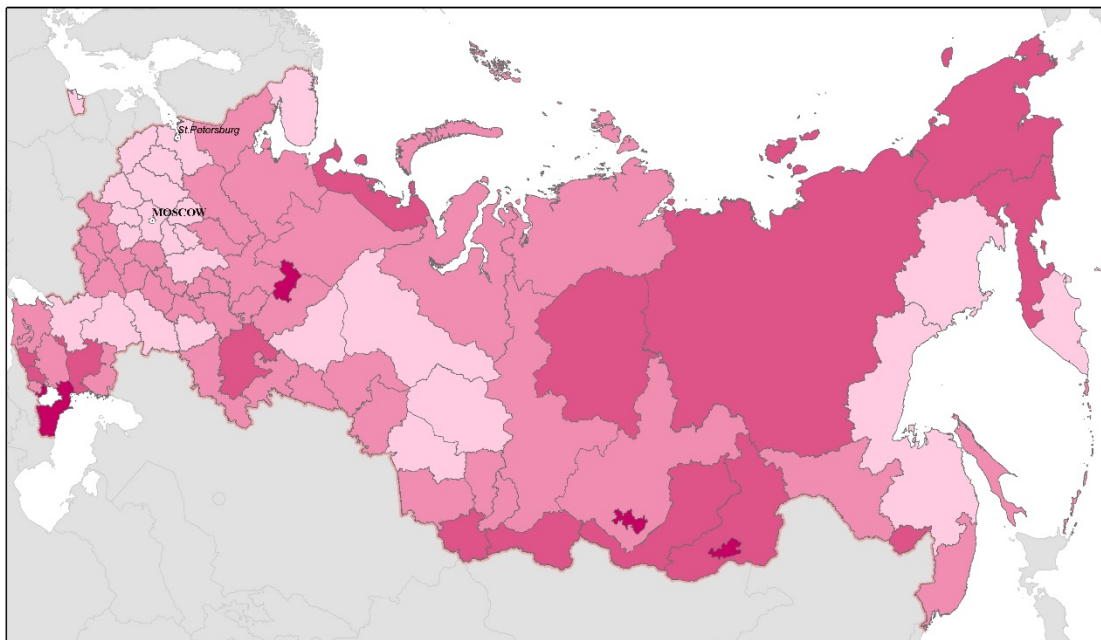
Children ever born to indigenous women: The number of children ever born to women of one of the forty-four indigenous ethnic groups ranges from 2,407 per thousand women for Tuvin-Todzhin women to 1628 for Saami women (figure 12.9). Only a small number of these groups have completed fertility above 2.1 children per woman and many have completed fertility well below this level. Women of all indigenous groups give birth to more women than the national average. While all are above the national average, the differences in the number of children ever born are not that much higher than the national average to significantly impact differential rates of population growth by ethnicity. The numbers of these groups are quite small and their overall contribution to the number of births in Russia is quite insignificant (only 0.3 percent of all births indicated in the census).



Oblast-level trends in fertility

There is significant regional variation in the number of children ever born to women. These regional differences are driven by the age structure of each region, especially the relative number of women in the reproductive ages, the ethnic composition of each region, and the level of urbanization. In 2002, the range was from 2,354 (Ingushetia) to 1,120 (St. Petersburg) children per thousand (map 12.1). The range stayed about the same in 2010, when the high was 2,341 and the low was 1,106 children per thousand women, with again Ingushetia having the highest and St. Petersburg the lowest (map 12.2). In 2002, ethnic homelands in Siberia, the Far East, and the Caucasus had the highest number of children ever born. In that year, only the Aga Buryat, Ust'-Orda Buryat, and Komi-Permyak autonomous okrugs, and Ingushetia and Dagestan had more than 2,000 children per thousand women, or above the level needed for a population to replace itself over the long run. A group of regions located in central Russia plus some periphery regions such as Murmansk, Khabarovsk, Khanty-Mansiy, Magadan, and Kamchatka had the lowest number of children ever born in 2002, all below 1,500 children per thousand women. The two regions with the absolute lowest number of children ever born were Moscow and St. Petersburg. As pointed out above, women living in urban areas have much smaller numbers of children than women in rural areas, a pattern that holds across much of the world.

Map 12.1: Children ever born by region, 2002



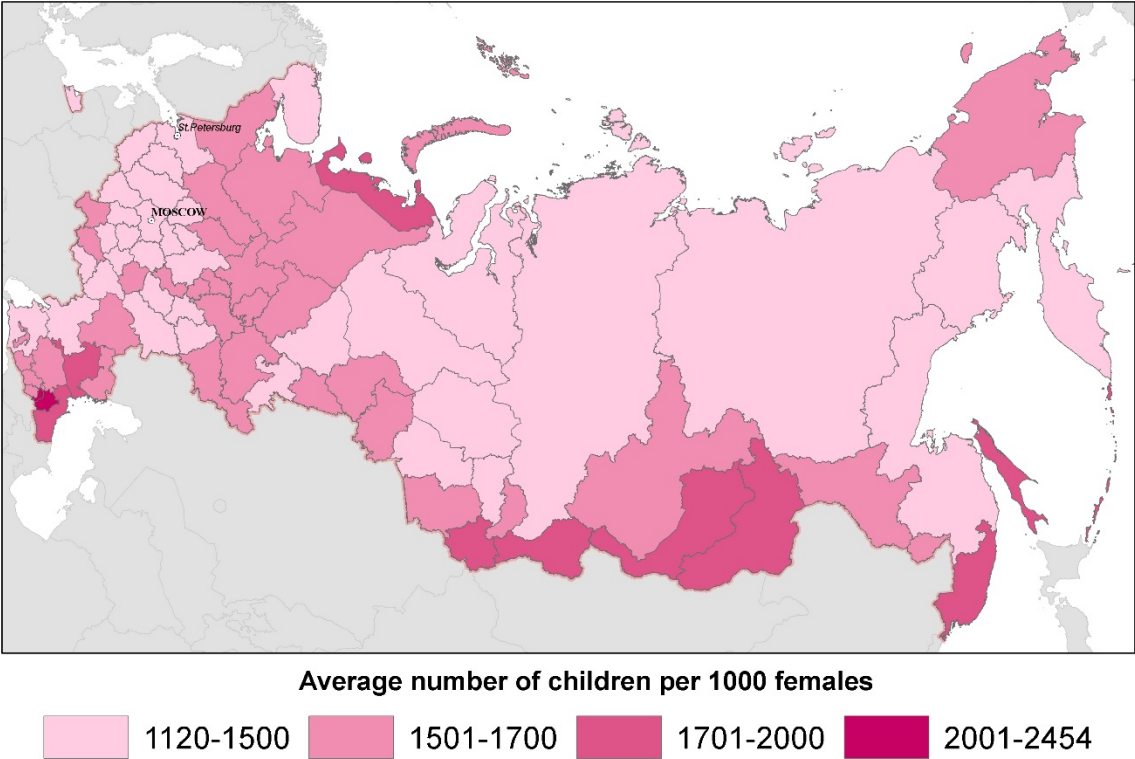
Average number of children per 1000 females



The same regional pattern held in 2010 as there was a strong positive correlation between the numbers of children per thousand women by in 2002 as in 2010. Maps 12.1 and 12.2 are shown using the same class intervals to facilitate comparison. While the regional pattern of children ever born was similar between the two censuses, the decline by region can be clearly seen by comparing the two maps. Moscow and St. Petersburg again have the smallest number of children ever born along with a number of other regions in central Russia and a few periphery regions. The same group of periphery ethnic homelands had the highest number of children ever born in 2010, with only Ingushetia Republic and Checheniya having more than 2,000 children per thousand women. Between 2002 and 2010, nationally the number of children ever born declined slightly from 1,513 to 1,469 children per thousand women and the number of children

ever born fell in all but a few regions. The largest decline was in Dagestan, a high-fertility region in the Caucasus where the number of children fell from 2,069 to 1,899 children per thousand women.

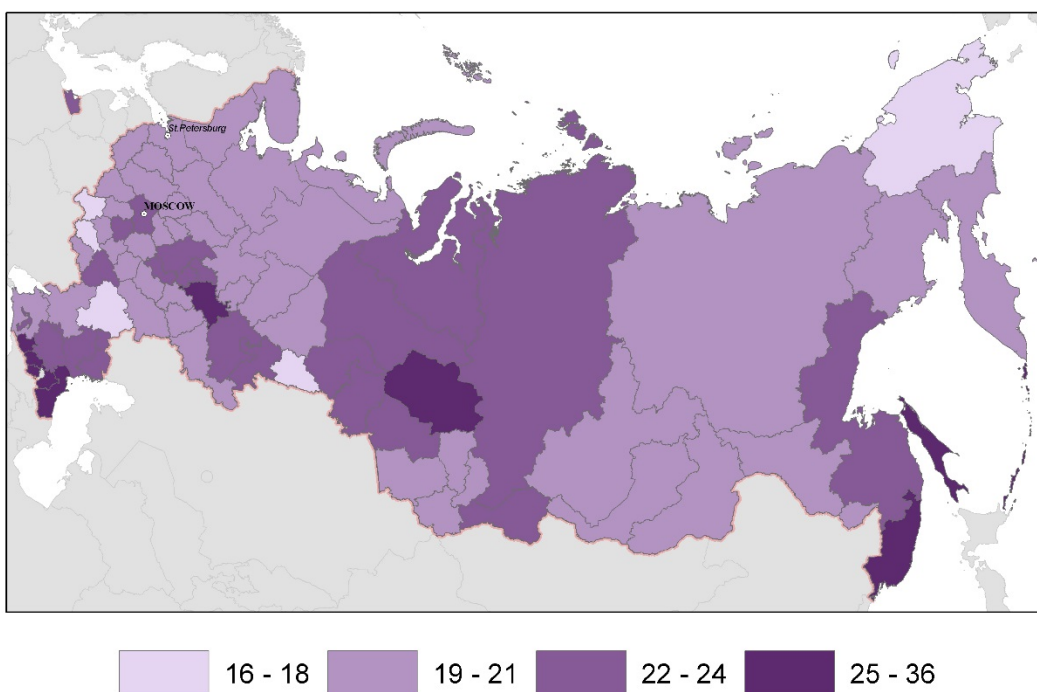
Map 12.2: Children ever born by region, 2010



In 2010, nationally 21 percent of women 16 and older had never had children. The range for the regions was between 36 and 16 percent (map 12.3). The regions with the highest percent of childless women were a group of ethnic homelands in the Caucasus, Yakutia, the predominantly Muslim republics of Tatarstan and Bashkortostan along the Volga, and Moscow and St. Petersburg. The explanation behind the large number of childless women in the Muslim homelands in the Caucasus and elsewhere has to do with the age structure of the populations and

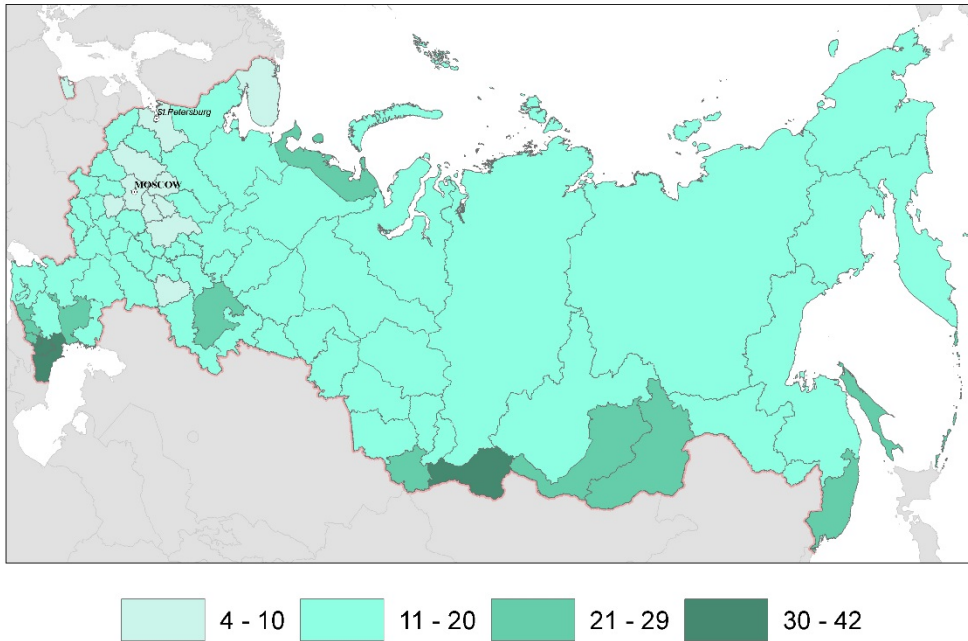
delayed start of marriage and childbearing. With younger age structures, these regions have larger numbers of women who had not yet started having children. For instance, in Dagestan which had 32 percent of women were childless, nearly all women below the age of 20 were childless. This percent drops to 69 percent childless at ages 20 to 24 and continue to drop to just 7 percent childless at age 45 at the end of a woman’s childbearing period. In St. Petersburg, where 26 percent of women were childless, at ages 20 to 24, 83 percent of women had still not had children and at age 45, 11 percent had not had children. In Dagestan, 36 percent of women older than 15 are in their peak childbearing years of 20 to 34, while in St. Petersburg, 26 percent are in these years. Regions with the smallest number of childless women were a mix of regions in central Russia and periphery regions.

Map 12.3: Percent of women childless by region, 2010

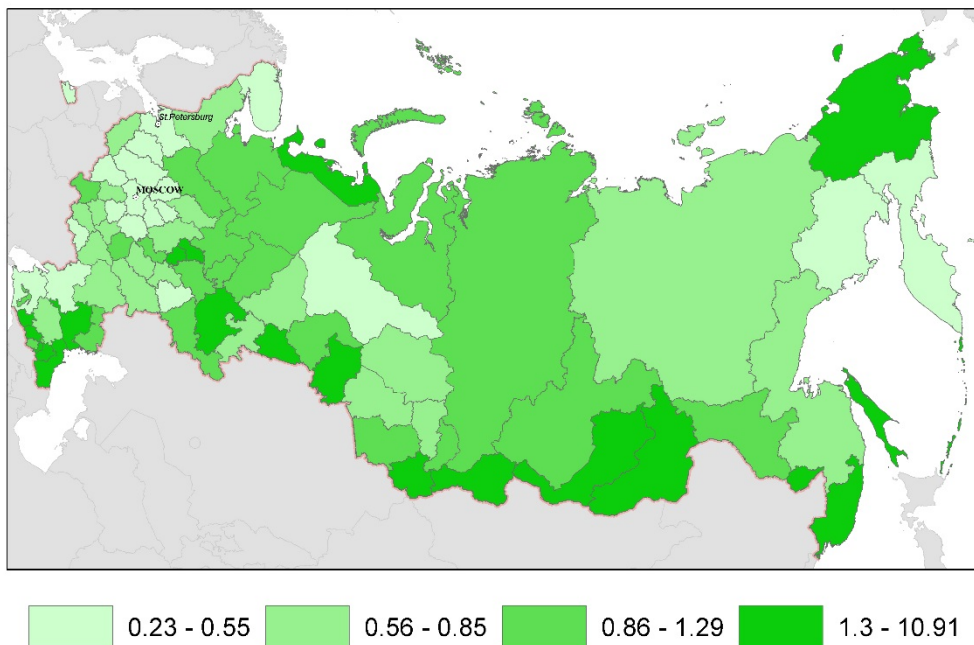


As shown above, having a third child is increasingly rare in Russia but many of those same regions with high shares of childless women are the same ones with larger families eventually as there are larger cohorts of younger women, who have larger numbers of children. In Ingushetia, Checheniya, Dagestan, and Tuva, 30 percent of more of women have three or more children (map 12.4). A number of other ethnic homelands in the Caucasus, Siberia, and the Far East, there are also large shares of women having three or more children. Regions with the smallest shares of women with three or more children, are concentrated in central Russia. Moscow and St. Petersburg with just 5 and 4 percent of women respectively having three or more, are the lowest in the country. This is explained by the overall lower fertility of women living in urban areas and the difficulty of having such large families given the smaller size of apartments in those cities and also the high levels of education of women in these cities. Obviously, the same regional pattern holds of percent of women with six or more children as with three or more children. The same four regions have the highest shares of women with six or more children, with Ingushetia (11 percent), and Chechnya (7 percent) having the highest shares (map 12.5). In Moscow city and oblast, Murmansk, St. Petersburg and Leningrad oblast, a woman having six or more children is rare indeed as less than 0.3 percent of women give birth to this many children.

Map 12.4: Percent of women with three or more children by region, 2010



Map 12.6: Percent of women with six or more children by region, 2010



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