



Demographic momentum and fertility responses to pronatalist policies:

The case of ethnic minorities in Russia

Konstantin Kazenin, Sergei Zakharov and Sunnee Billingsley



Demographic momentum and fertility responses to pronatalist policies:

The case of ethnic minorities in Russia

¹Konstantin Kazenin, ²Sergei Zakharov, ¹Sunnee Billingsley

¹*Stockholm University*

²*Strasbourg University Laboratory SAGE (Sociétés, Acteurs, Gouvernement en Europe),
Strasbourg, France*

Abstract

The paper considers the impact of the Maternal Capital policy, the pronatalist measure introduced in Russia in 2007, upon fertility of Russia's ethnic minorities. Russia's Maternal Capital policy increased total fertility rates after its start, stimulating much discussion on whether it would result in more births or only earlier births. Effects of that policy upon different ethnic groups of the population of Russia, however, have not received systematic attention so far. Varying demographic, socioeconomic and cultural characteristics of ethnic groups in Russia provide a unique lens to assess policy responsiveness, especially in light of the general expectation that women of economically more disadvantaged ethnicities or ethnicities with more "patriarchal" cultural backgrounds can be more responsive to pronatalist policies. We run discrete event history models using IPUMS microdata from the Russian Census of 2010, and consider changes in birth probabilities after the introduction of the Maternal Capital. The analysis concentrates on births of second children as this parity transition is the first to offer eligibility to the Maternal Capital benefit. These results do not conform to the expectation that women with lower SES would be more responsive to the Maternal Capital policy: effects were not stronger among ethnicities with lower levels of education or labor market participation among women. Overall, ethnicities with a more intense fertility decline in the period preceding the introduction of the policy showed a weaker reaction to it. This finding opens a new perspective for studying how minority groups respond to pronatalist measures. Our findings imply that the deep social changes that precipitate intense fertility decline override any sensitivity to pronatalist policies.

Keywords: Russia, fertility, ethnic minorities, pronatalist family policy ethnicities

Stockholm Research Reports in Demography 2024:51

ISSN 2002-617X

© Konstantin Kazenin, Sergei Zakharov and Sunnee Billingsley



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

1.Introduction

About 15% of the population of Russia currently consists of minority ethnic groups, most of which are of non-Slavic origin. These ethnic groups are mainly concentrated in the North Caucasus, Volga basin, Siberia and the Far East, where their ancestral homelands are found. In some regions of those geographical zones the non-Slavic ethnicities constitute a large proportion (sometimes more than 50%) of the population. A large part of the minority population is also scattered around regions where ethnic Russians are the majority. Economic development of the regions in which the minorities live varies widely: some of them are economically disadvantaged, but some others are among the leaders of economic development (see Section 3). The minorities also differ on social characteristics of women, such as educational and employment levels. Current fertility levels of the minorities also are quite different. However, what most of the non-Slavic ethnic minorities have in common is that fertility decrease among them started some decades later than among ethnic Russians (Bogojavlenski 2012; Kazenin & Kozlov 2023).

Large ethnic diversity in fertility rates persisted in Russia after the family policy reform in 2007. The main component of that reform was the Maternal Capital, a sizable financial allowance granted to families where a second or higher order child was born after December 31, 2006. The allowance can be used for several purposes relevant for a child's wellbeing. Although this measure resulted in an increase in the period total fertility rate in the years right after the policy was implemented, its long-term effect is still disputed.

In the present paper we assess whether ethnic groups responded differently to the Maternal Capital policy. Studies of effects of state pronatalist measures upon ethnic minority groups so far mainly concern migrants and their descendants (see Andersson et al. 2006, Mussino & Duvander 2016, Mussino et al. 2018, Biegel et al. 2021, Duvander & Koslowski 2023, Maes et al. 2023, Milewski & Brehm 2023, Mussino et al. 2023, and others). Non-migrant ethnic minorities, unlike migrants, have not been studied in this aspect so far (see Brünig 2023 as an important exception). In addition, parenthood support measures which are considered in the literature focusing on migrant and minority populations include only the measures adopted in highly industrially developed European countries, mainly parental leaves with allowance depending upon previous incomes of parents and formal childcare. Measures like the Russian Maternal Capital, which subsume financial support of families independent upon their previous incomes, have not been considered so far in the literature on migrants and minorities.

In our analysis we concentrate on second births because the Maternal Capital policy was mainly designed to support this birth order. We consider transitions to second children among ethnic Russians and the minority groups in 2001-2010. This allows us to compare trends before and after introducing the Maternal Capital for each ethnic group. After assessing trends that are standardized across socio-economic parameters, we consider possible explanations for interethnic differences in response to this pronatalist policy.

To compare the fertility response of women of different ethnicities to the pronatalist measures, we estimate discrete event history models based on IPUMS microdata from Russian Census 2010. Together with ethnic Russians, we include in our study only autochthonous ethnicities, i.e. those ethnic groups who have been living in their present area of residence for a long historical period. Other sizeable ethnic groups in Russia include individuals from other post-Soviet countries. We excluded these other ethnic groups because from the available Census data we do not know when women of these groups arrived in Russia and what part of their reproductive period was spent in the country.

2. Background: Russian fertility and policy developments

Fertility rates in Russia started to gradually decrease from the level of 7-8 children per woman in the 1920s and reached the level of two children per woman according to period fertility measures in the 1960s (Zakharov 2008). Subsequent fertility decrease caused the Soviet government to implement a number of pronatalist measures in the 1980s, which resulted in a short increase in period fertility, but hardly influenced the resulting fertility of cohorts (Andreev 2016). The collapse of the Soviet Union and the economic crisis of the 1990s were followed by a considerable fertility decrease, with TFR just slightly above 1 child per woman in 1999. The 1990s also gave start to important demographic changes that developed in the subsequent decades. These included an increase in mother's mean age at first birth, which had been nearly stable throughout the Soviet era, and an increase of births in non-marital unions (Perelli-Harris & Gerber 2011; Zakharov 2008, 2024).

The Maternal Capital was introduced in 2007 by the Federal government as a measure aimed to support childbearing. According to the original design, a special certificate was granted to a woman when she gave birth to or adopted her second child (or a subsequent child, if the certificate was not granted before). Births of second children, which the Maternal Capital was mainly supposed to support, underwent an especially deep decrease in Russia as well as in many other post-Communist countries after the collapse of the Soviet system (Billingsley et al.

2023). Funds guaranteed by each certificate amounted to an equivalent of about 11,000 USD in 2007 and were regularly indexed afterwards. Any time after the child reached three years, the funds could be spent only with the following purposes according to the 2007 regulations: (1) purchasing housing (starting from 2009, the funds could also be used for mortgage payments starting already from the birth of the child); (2) child's education; (3) investment in mother's pension fund.

At the country level, the start of the payments of the Maternal Capital was accompanied by a fertility increase which lasted until 2015. Different studies, however, reach different conclusions about the efficiency of that measure. Some research acknowledges positive effects of this measure on the period fertility increase after 2007 (Slonimczyk & Yurko 2014). Others, however, stress that the effect was very limited, noting, among other things, that the fertility increase actually started already in the years preceding the start of the payments of the Maternal Capital (Zakharov 2024 and references there). Sorvachev & Yakovlev (2020) show that effects of the Maternal Capital varied across regions, and were negatively correlated with regional housing prices.

3. The research question

The question which we attempt to answer is whether ethnic minorities differed from the majority population (ethnic Russians) in their reaction to the Maternal Capital policy. Since we use the 2010 Census as the data source, we limit this research question to the initial reaction to the pronatalist policy, observed in 2007-2010. We concentrate on transition to the second child, after which women became eligible for the Maternal Capital benefit. We do not consider transitions to higher parities because of very small proportions of women progressing to the third and subsequent children before and after the start of the policy in a number of ethnicities (in addition, effects of the Maternal Capital upon third and subsequent births could be considered only for women who had not received Maternal Capital after birth of the second child, as according to the regulations of 2007-2010, only such women could receive the Capital after the third or a subsequent birth).

After assessing interethnic differences on reaction to the Maternal Capital policy, we discuss whether these differences may be accounted for by difference in economic situation of the regions or according to educational level and labor market participation of women of different ethnicities. We finally consider previous dynamics of fertility decrease among the ethnicities as a possible correlate of their reaction to the Maternal Capital.

4. Interethnic differences in effects of pronatalist policies: theoretical expectations

Given the lack of relevant studies on reaction of minority populations on the type of fertility support represented by the Maternal Capital, we build our expectations related to Russian ethnic minorities' reaction to this policy on the general findings on family policy uptake according to couples' characteristics (Neyer & Andersson 2008).

Two of our expectations are related to socio-economic characteristics of the minorities. First, we expect that the impact of the Maternal Capital can be stronger among ethnic groups whose economic conditions are worse than in the country as a whole. For women from an economically disadvantaged ethnic group, the Maternal Capital policy may look especially promising as it gives access to additional financial resources. Although the Maternal Capital was not provided in cash, it gave families with low income opportunities that would otherwise be lacking, especially in improving their housing conditions.

Second, we expect that if women generally have lower educational and/or employment levels in an ethnic group relative to the country as a whole, the response to the Maternal Capital policy in that ethnic group may be stronger. This is due to lower opportunity costs of motherhood (Becker 1991), which might otherwise limit women's policy response.

A demographic perspective might provide two additional expectations about how ethnic minorities react differently to the Maternal Capital policy; we highlight the potential influence of how recently fertility decline occurred and how intensively it declined.

First, ethnicities with more *recent* fertility decrease may more readily react to the pronatalist policy. This expectation is based on the assumption that cultures that supported high fertility more recently in history are likely to be more susceptible to upward swings in fertility rates (the relation between cultural norms and fertility is known starting at least with the seminal works of Malhotra et al. 1995, Mason 1987; see Phan 2013 for an overview). This expectation would also be in line with a number of recent studies that emphasize the role of cultural legacy in demographic behavior (see e.g. Lesthaeghe & Neels 2002, Puur et al. 2012).

Second, the more *intensively* fertility of an ethnic group declines in a given period, the less responsive that ethnic group may be to pronatalist policies. This scenario is motivated by the knowledge that fast fertility decline normally is caused by very deep changes at the family and societal levels including urbanization, decline of patriarchal family order, growth of women's

labor market participation, etc. (see e.g. Bongaarts & Hodgson 2022). Although we are not aware of any studies on results of pronatalist measures introduced in the period of fast decreases of fertility, it can be expected that social forces causing such decreases may make reversal of fertility trends especially difficult for any policy.

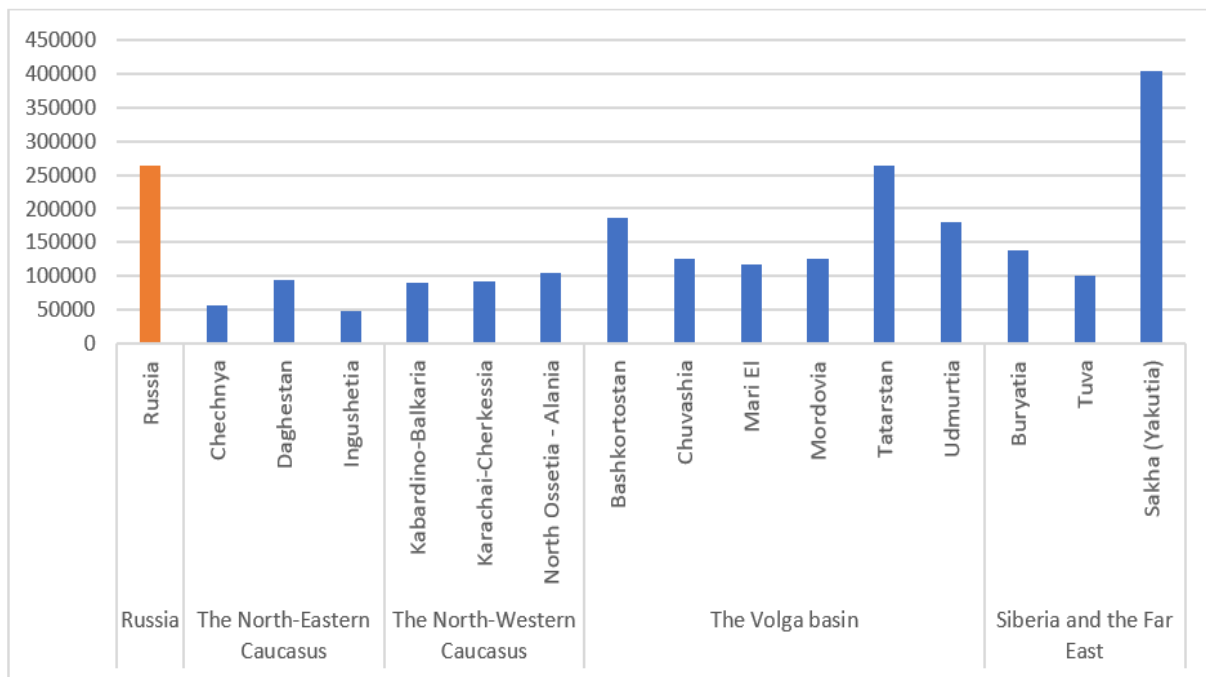
5. Russian ethnic minorities and their socio-economic characteristics

Autochthonous non-Slavic ethnic minorities of Russia are mainly concentrated in the Northern Caucasus, Volga basin, and Siberia with the Far East. Ethnicities of the eastern part of the North Caucasus and some ethnicities of Siberia constitute over 80% of the population in their regions (republics of Russian Federation). Other ethnicities reside in regions with a more mixed ethnic composition, where ethnic Russians also constitute a large proportion of the population. Table A1 of the Appendix contains data on total population of the regions where the ethnicities considered in our study are mainly concentrated and proportions of these ethnicities in regional populations.¹

In the time when the Maternal Capital policy started, the economic situation of the regions where non-Slavic minorities had the highest proportions in the population was very different, as their regional domestic products *per capita* of 2010 illustrate (Figure 1). Some of the republics, like Tatarstan in the Volga basin and Sakha (Yakutia) in the Far East were among the economically developed regions of Russia. Republics of the North Caucasus and the Republic of Tuva in Siberia, by contrast, had considerably lower regional domestic product than in Russia as a whole.

¹ These ethnicities include most of the largest ethnic minorities of Russia in terms of population size; see Section 6 for details on selection of ethnicities for the study.

Figure 1. Regional domestic products per capita of Russian regions with highest proportions of non-Slavic population, in roubles, 2010. Source: Russian State Statistical Agency (Rosstat).



The minority ethnicities also differed between each other on educational levels and labor market participation of women. Table 1 compares proportions of men and women who had tertiary education and who reported labor income at the 2010 Census. Labor participation of women was lowest among the ethnicities of the North-Eastern Caucasus. It was also below 50% among two of the ethnicities of the North-Western Caucasus (Kabardian and Karachai-Balkar) and one of the ethnicities of Siberia (Tuvan). The other ethnicities, including all the ethnicities of Volga basin, were close to ethnic Russians on this parameter. The table also compares educational levels of women across ethnicities, showing that they had a similar pattern of interethnic differences. Men seriously outranked women on both education level and labor market participation in the North-Eastern Caucasus, and only on labor market participation in the North-Western Caucasus. For the ethnicities of the other regions, educational levels of women were typically higher than those of men, and gender gaps in labor market participation were rather small. The table also shows that in all the minority ethnicities proportions of rural population were higher than among ethnic Russians.

Table 1. Socio-economic characteristics and total population of the ethnicities included in the study, Census 2010. Source: Russian State Statistical Agency (Rosstat).

Ethnicity	Rural population, %	Women with tertiary education, age 25-49, %	Men with tertiary education, age 25-49, %	Women who had labor income at the time of the Census, age 15-55 ² , %	Men who had labor income at the time of the Census, age 15-60, %
Russian	23.16	37.41	27.75	71.08	75.92
<i>The North-Eastern Caucasus</i>					
Avar	61.47	18.71	24.43	31.74	49.26
Chechen	63.63	13.90	19.72	25.15	43.27
Dargin	61.58	18.03	22.82	32.46	54.13
Ingush	59.72	25.79	29.13	23.84	41.13
Kumyk	49.45	24.54	25.81	41.14	57.77
Lezgian	49.92	25.56	30.52	37.14	55.07
Tabassaran	53.80	17.51	28.96	30.25	53.30
<i>The North-Western Caucasus</i>					
Kabardian	53.93	27.95	29.07	48.73	62.74
Karachai	49.52	40.04	38.68	42.51	53.79
Ossetic	35.66	43.55	37.07	52.22	62.61
<i>Siberia and the Far East</i>					
Buryat	52.94	43.94	29.68	58.48	59.16
Tuvan	51.11	26.33	12.44	48.90	43.11
Yakut	59.57	42.77	25.14	63.31	61.97
<i>The Volga basin</i>					
Bashkir	53.77	24.90	15.97	62.92	69.95
Chuvash	50.95	25.47	16.67	70.10	72.44
Mari	57.41	19.51	11.18	66.64	69.36
Mordovian	49.03	26.32	18.21	72.10	75.45
Tatar	32.28	32.63	23.54	69.62	75.23
Udmurt	55.41	23.28	13.10	75.91	75.67

² The different age limits for men and women correspond to different ages when men and women started to be eligible for labor pension in Russia in 2010.

6.Data

For the descriptive outline of fertility trends among women of different ethnicities of Russia before and in the initial period after the start of the Maternal Capital policy, aggregated data from the 1979 and 1989 Soviet Censuses and from the 2002, 2010 and 2021 Russian Censuses was used (Section 8)³. The ethnicity parameter in these data reflected women's answers on the direct question about their ethnical identity. To follow up changes in completed fertility, for the ethnicities included in the subsequent analysis we calculated mean number of children of women aged 45-49 at the time of the Census.

The aggregated Census data did not allow to follow up birth histories of individual women. Birth histories used for the statistical analysis (Section 9) were retrieved from IPUMS database on Russian Census 2010⁴, which contains microdata on 5% of households registered by the Census. Microdata of the 2021 Census were not available at the time of the study either from IPUMS or from any other source. The 2010 Census IPUMS database provides information on relationships between mothers and children within households calculated using the Own Children Method (Cho et al. 1986) and ages of all household members in complete years. Using the parameter of children ever born to a woman, it is possible to sort out women with whom all their children resided in one household at the time of the Census. For such women the data allow us to reconstruct complete birth histories.

Women were selected from the IPUMS database who had exactly one child and were of reproductive age at least at some point of time in 2001-2010; henceforth we refer to such women as being at risk of the second birth. This allows us to compare how risks (a technical term denoting the “relative risk” obtained from the statistical models) of the second births changed in different ethnicities after introduction of the pronatalist policy compared to the years shortly before it.

The twenty autochthonous ethnicities that were most numerous among women at risk for the second child in the IPUMS sample are included in the analysis. Apart from ethnic Russians, these include ethnic groups of the North-Eastern Caucasus (Avar, Chechen, Dargin, Ingush, Kumyk, Lezgian, Tabassaran⁵), the North-Western Caucasus (Kabardian, Karachai-Balkar,

³ Data on the Censuses earlier than 2010 are taken from www.demoscope.ru, and the data of the 2010 Census from the official website of Russian State Statistical Agency (Rosstat).

⁴ [IPUMS International](http://www.ipums.org).

⁵ The Tabassaran ethnic group, residing predominantly in the southern part of the Republic of Dagestan (North-Eastern Caucasus), was not included in the descriptive results in Section 8 because data on this ethnic group were

Ossetic), the Volga basin (Bashkir, Chuvash, Mari, Mordovian, Udmurt, Tatar), and Siberia and the Far East (Buryat, Yakut, Tuvan)⁶.

Only those women from the IPUMS dataset were considered who resided in one household with all their children at the time of the Census (for these women, reported total number of children ever born was equal to the number of household members attributed as their children by the Own Children Method). This solution was motivated by the fact that birth histories reconstructed by the Own Children Method for those women whose children resided outside the household may not be complete.

The proportion of women with all children in their household naturally was smaller among older age groups. Among women who were not older than 45 at the time of the Census, that proportion was 87.1%, whereas the proportion decreased considerably when raising the upper limit of age. That is why we limited the analyzed data to women aged 15-45 at the Census. This implies a certain loss of women at risk in the earlier annual periods. For example, in 2001 only those women are at risk in our analysis who became 36 or less than 36 in that year. However, since fertility above that age was small in Russia in the 2000s, this is not expected to produce a serious distortion.

absent from the available aggregated results of Censuses 1979, 1989 and 2002 on ethnic fertility. Nevertheless, we included Tabassarans in the analysis, because they were of special interest in light of our expectations regarding the relation between the response to pronatalist policies and preceding fertility trends. As results of sample studies, including Russian Microcensus of 1994, have shown, Tabassarans were among ethnic groups of Russia with the latest start of fertility decline. A possible reason for this was that economical demand for children in Tabassaran households remained high for a longer time compared to the neighboring ethnicities: during most part of the Soviet period a large proportion of Tabassaran families produced decorative carpets for sale, and teen-aged girls were actively involved in that work by their parents (Kazenin & Soroko 2021).

⁶ To some of the ethnicities, women of less numerous, linguistically closely related and geographically proximate minor ethnicities were added in the analysis of the IPUMS data. Three minor ethnic groups from the southern part of the Republic of Daghestan – Agul, Rutul and Tsakhur – were treated together with Lezgians, the largest ethnic group of that area (languages of the four ethnicities are closely related, and historical areas of their residence are close). About 10 minor ethnicities of Daghestan closely related to Avars were treated together with Avars (part of respondents of those ethnic groups actually identified themselves as Avars at the Census, see Kazenin & Soroko 2021 for details). Balkar and Karachai, two Turkic ethnicities of the North-Western Caucasus mainly residing in two different regions (the Republic of Kabardino-Balkaria and the Republic of Karachai-Cherkessia, respectively), were partly registered at the Census as speaking Karachai-Balkar language, and partly as speaking Balkar or Karachai (the two languages are very close, even though sometimes considered as separate ones). Since Balkar and Karachai reside in different regions and are not viewed as a single ethnicity, we sorted out women who reported their native language as Karachai or Karachai-Balkar and who were born and/or resided in the time of the Census in the Republic of Karachai-Cherkessia. In this way the Karachai-Balkar language label which we use mainly refers to ethnic Karachais. Women who identified themselves as Sakha were treated as Yakut, as these are two different names for one and the same ethnic group of the Far East. To Mordovian women, women who identified themselves as belonging to subethnic groups within that ethnicity, Erzya(n) and Moksha, were added. To Mari, women who identified themselves as Hill Mari were added.

The IPUMS database included 695,229 women of the studied ethnicities that were aged between 15 and 45 in the time of the Census and had exactly one child at least at some period between 2001 and 2010 according to birth histories built by the Own Children Method. From those women, 3,893 were excluded as their first and second children in the household were of the same age, potentially because they were twins. An additional group of 4,245 women were excluded because their age at birth of their eldest child residing in the household was below 15, which suggested that there was a mistake either in the Census data itself or in application of the Own Children Method. Further, 36,569 were excluded because their first child was born only in 2010. This left 650,522 women. However, 83,949 (13%) of them resided separately from at least some of their children in the time of the Census, which shows that their available birth history was incomplete (see above). This resulted in 566,573 women and 3,392,206 person-years included in the final risk sample for second births. Table A4 of the Appendix shows the distribution of women between the ethnicities in the risk sample for the second births.

7.Method

In order to compare the probability of a second birth before and after the start of the Maternal Capital program, we follow birth histories of all women at risk of the second birth during the 10 years before the date of the Census (between October 16, 2000 and October 15, 2010, as the Census data provide parameters relevant for the latter date). Age of the first and the second child in complete years allows us to refer to each child's birth within a one year period: births of children who were ten are located between October 16, 1999 and October 15, 2000, of those who were nine – between October 16, 2000 and October 15, 2001, etc. Births of second children are assigned to such periods in a similar way. Presenting the results, we simply refer to the period between October 16, 1999 – October 15, 2000 as the year 2000, to the period October 16, 2000 – October 15, 2001 as the year 2001, etc.

Discrete event history analysis is used to estimate the relative risk of transitioning to a second child. A person-year dataset was constructed where each observation corresponds to a one year period in which the woman is at risk of having a second birth. Logistic regression with robust standard errors estimates the conditional probability of the second birth, given that it has not occurred before the studied time period (Allison 1982). We approximate a piecewise constant hazard model by including a parameter for time since the previous childbirth as the baseline time-scale. This parameter distinguishes the following periods: the first year after the first birth,

the second and third years, the fourth and fifth years, the sixth to the tenth years, the eleventh to the fifteenth years, and the sixteenth and subsequent years.

Risks of transition to the second child are studied for every woman starting from the one year period following the year of the first birth. If the first child was born before 2001, the risk period starts with the year of the first birth and they enter the risk set contributing to the specific period. Observations are censored in the year when the second child was born or after the period October 16, 2009 – October 15, 2010, if the woman had only one child at the time of the 2010 Census.

The calendar year parameter, taking the values 2001, 2002,... 2010, is included in the models and interacted with the ethnicity parameter. This allows us to compare second parity progression trends among ethnic Russians and the minorities both before and after the pronatalist policy started. The ethnicity parameter is based on mother tongue reported at the Census (respondents in the Census were also asked directly about their ethnicity by self-identification, but that parameter was not provided by IPUMS). According to officially published results of the Census, only 6.2% of respondents reported a mother tongue that was different from the language of their reported ethnicity, so the mother tongue parameter can be considered as a valid proxy for ethnicity.

Time-constant controls include woman's age at the first birth (categorized as younger than 21, 21-24, 25-29, 30+), ethnicity, rural/urban residence at the time of the Census, and educational level as reported at the Census. It is possible to use education as a time-constant variable for studying second births as continuing education after having the first child was not typical for women in Russia in the considered period. Marital status could not be accommodated in the models because any changes during the observation period are unknown. As a robustness check, models were run where a dummy was added showing whether a woman resided in the "homeland" region of her ethnicity or in some other region at the time of the Census. Adding this dummy did not seriously change the estimates we are interested in (the models with the dummy are available from the authors).

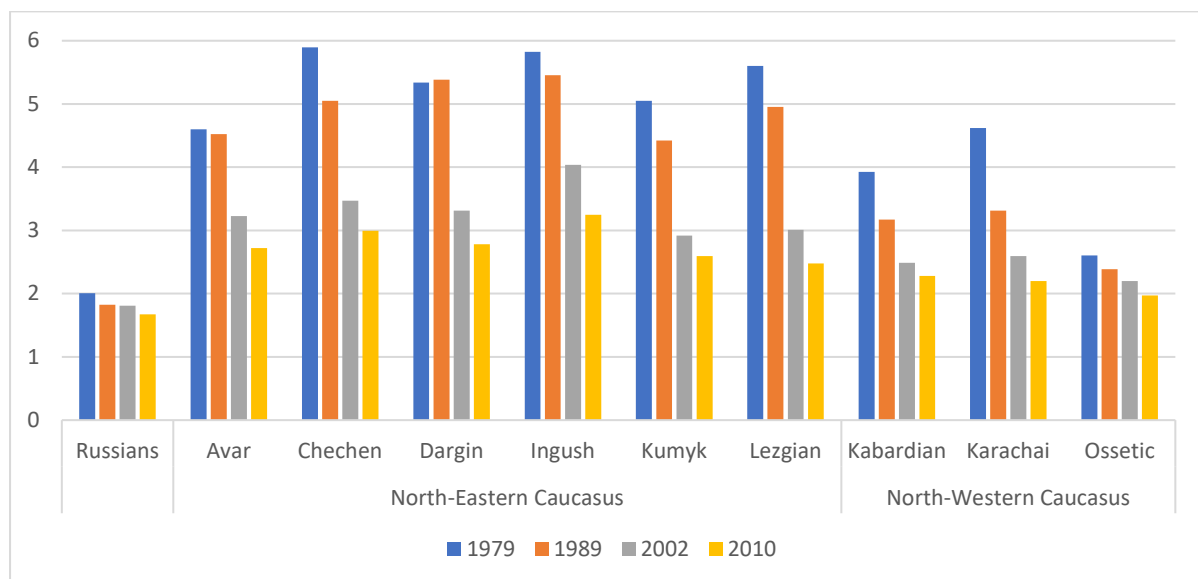
Predicted probabilities of second births for each ethnicity and calendar year at the means of all the other variables were calculated based on the discrete event history model. This allowed us to compare effects of the ethnicity parameter across the years, standardizing for all the control variables. "Directly" considering risk ratios from the models would make interpretation of the results more complex because of interactions of the parameters in the model. Confidence

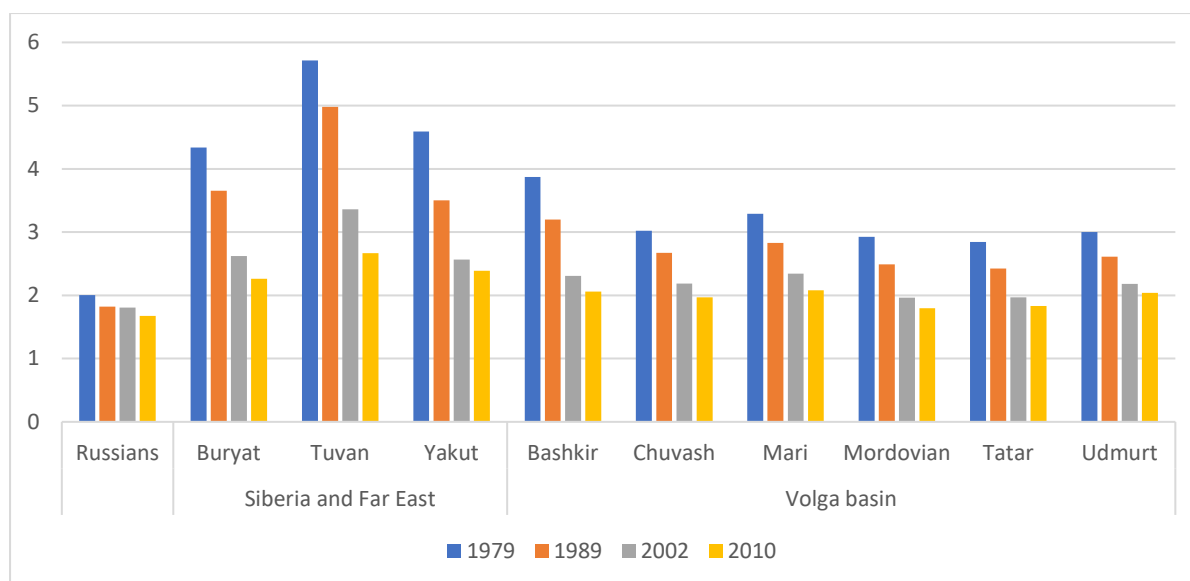
intervals at the 87.5 level were used in presenting the predicted probabilities, in order to more easily identify when two estimates statistically differ (for two point estimates not to overlap with 95% probability, 87.5% CIs of these estimates should not overlap with each other (Payton et al. 2003)).

8. Descriptive results

Now we turn to fertility trends among autochthonous non-Slavic ethnicities. All of them fell behind ethnic Russians in fertility decline. To compare how resulting fertility of women in the end of their reproductive period changed for these ethnicities, Figure 2 shows the average number of children ever born for women aged 45-49 of the ethnicities included in our study and for ethnically Russian women according to the Censuses of 1979, 1989, 2002 and 2010 (for a detailed follow-up of recent trends of accumulated fertility among the ethnicities, Appendix 2 offers mean numbers of children of 40-44, 45-49 and 50-54 age groups according to 2002, 2010 and 2021 Censuses). The mean number of children was higher than two in 1979 for all the ethnicities except Russians. Most of the ethnicities of the North-Eastern Caucasus and some ethnicities of the North-Western Caucasus and Siberia/Far East had an average number of children even higher than five in 1979, which suggests that they started the fertility decrease later than the others. By 2010, most of the ethnicities outside the North-Western Caucasus had fertility close the level of two children per women, still considerably outranking ethnic Russians on fertility levels.

Figure 2. Children ever born per woman aged 45-49, by ethnicities, Censuses 1979, 1989, 2002, and 2010 (calculated using the data of Russian State Statistical Agency (Rosstat))





Since one of our expectations listed in Section 4 concerns the slope of fertility decrease before introducing the pronatalist policy, we look more carefully at fertility change between the two censuses preceding the start of the Maternal Capital payments, 1989 and 2002. In Table 2 the ethnicities are ranked according to percent changes of total number of children of women aged 45-49 in 2002 compared to 1989 by ethnicities. It is seen that generally the decrease during this period was the strongest among the ethnicities of the North-Eastern Caucasus and one ethnicity of Siberia, Tuvan, and the weakest among the ethnicities of the Volga basin and one ethnicity of the North-Western Caucasus, Ossetics. The other ethnicities of the North-Eastern Caucasus and Siberia and the Far East took the positions in the middle of the ranking.

Table 2. Change in number of children ever born to women aged 45-49 in the 2002 Census compared to the 1989 Census, by ethnicities, %

	Ethnicity	Location	Change between 1989 and 2002, %
1.	Lezgian	North-Eastern Caucasus	-39,27
2.	Dargin	North-Eastern Caucasus	-38,44
3.	Kumyk	North-Eastern Caucasus	-33,94
4.	Tuvan	Siberia and the Far East	-32,52
5.	Chechen	North-Eastern Caucasus	-31,33
6.	Avar	North-Eastern Caucasus	-28,65
7.	Buryat	Siberia and the Far East	-28,25
8.	Bashkir	Volga basin	-27,96
9.	Yakut	Siberia and the Far East	-26,73
10.	Ingush	North-Eastern Caucasus	-25,95
11.	Karachai	North-Western Caucasus	-21,65
12.	Kabardian	North-Western Caucasus	-21,60
13.	Mordovian	Volga basin	-21,04
14.	Tatar	Volga basin	-18,84

15.	Chuvash	Volga basin	-18,29
16.	Mari	Volga basin	-17,20
17.	Udmurt	Volga basin	-16,49
18.	Ossetic	North-Western Caucasus	-7,91
19.	Russians		-0,77

9. Analytical results

The predicted probabilities of second births for each ethnicity and for each year 2001-2010 are plotted in Figure 3⁷. The minority ethnicities on the figure are grouped by the geographical zones. Under the different theoretical expectations outlined in Section 4, one could foresee different dynamics of the predicted probabilities across the geographical zones.

First, if the response to the Maternal Capital policy is stronger among ethnicities residing in economically less developed regions, the strongest increase in predicted probabilities after 2006 should occur among the ethnicities of the North-Eastern Caucasus. In contrast, ethnicities in the Volga basin as well as Yakuts in the Far East would demonstrate the weakest change in the predicted probabilities (see Figure 1 comparing regional domestic product).

Second, if lower levels of education and labor market participation of women moderate the policy response, the increase in predicted probabilities will be strongest in the North-Eastern Caucasus and for separate ethnicities of the other regions (Kabardian, Karachai, Tuvan; see Table 1); the weakest increase in predicted probabilities in this case is expected among the ethnicities residing around the river of Volga.

Third, if having had a more recent fertility decrease is associated with a more positive response to pronatalist policies, the ethnicities of the North-Eastern Caucasus and some ethnicities of the other regions who had highest fertility levels in 1979 and 1989 (Tuvan, Karachai) should react to the introduction of the Maternal Capital most actively, whereas the ethnicities of the Volga basin should show the weakest reaction to the policy (see Figure 2).

By contrast, if we expect that a steeper slope of recent fertility decrease is related to a weaker response to the Maternal Capital, the ethnicities of the North-Eastern Caucasus will have the smallest increase of the predicted probabilities, whereas for most of the Volga basin ethnicities

⁷ The scales at the graphs of Figure 3 are chosen in the way that makes comparison between the graphs easy, but also makes observable the fertility trends of the ethnicities with lower fertility: the shorter scale is used for ethnic Russians and for the ethnicities of the Volga basin and Siberia and the Far East, and the longer scale for the ethnicities of the North-Eastern and the North-Western Caucasus (except Ingush, for whom the exclusive scale is used due to especially high levels of the predicted probabilities).

and for Ossetics in the North-Eastern Caucasus the increase will be most noticeable (see Table 2).

As Figure 3 shows, for ethnic Russians the positive effect of the Maternal Capital is very clearly seen, as, after the plateau of 2004-2006, predicted probabilities of second births start to grow from 2007. Before that, the predicted probabilities were considerably lower for ethnic Russians than for most of the minorities, what agrees with lower resulting fertility of ethnic Russians compared to the minorities at the 2002 and 2010 Censuses (Section 8).

The ethnicities of the Volga basin are closer to ethnic Russians than the other minority ethnicities in the dynamics of second birth in the considered decade. It is especially clearly seen for four of the ethnicities, Tatar, Bashkir, Chuvash and Mordovian, which had a clear statistically significant increase of predicted probabilities during the 2007-2010 period. The difference between predicted probabilities in 2007-2010 and in the preceding years is not regularly statistically significant for the Volga basin ethnicities with smaller samples (Mari, Udmurt). However, for the latter three ethnicities, an increase of probabilities after 2006 also is quite discernable, despite the large variance of the predicted probabilities in 2001-2006 and rather wide confidence intervals.

Quite a different situation is observed in the North-Eastern Caucasus, where no regular growth of predicted probabilities in 2007-2010 compared to the earlier period is detected. A growth, though not statistically significant, was only observed for the year 2008 compared to 2007 for most of the ethnicities of this group, but it changed to a decrease in 2009-2010. For all the other years, both before and after the start of the Maternal Capital program, this group of ethnicities showed no consistent trend in second birth probabilities. Importantly, the lack of a statistically significant increase in probability for the period 2007-2010 is witnessed even for those ethnicities of the North-Eastern Caucasus whose sample sizes are quite comparable to sample sizes of the Volga basin ethnicities for which strong effects of the Maternal Capital have been detected, cf. Bashkir and Chuvash of the Volga basin vs. Avar and Chechen of the North-Eastern Caucasus. This suggests that the difference observed between the ethnicities of the two groups cannot be explained away by smaller sample sizes for the ethnicities of the North-Eastern Caucasus.

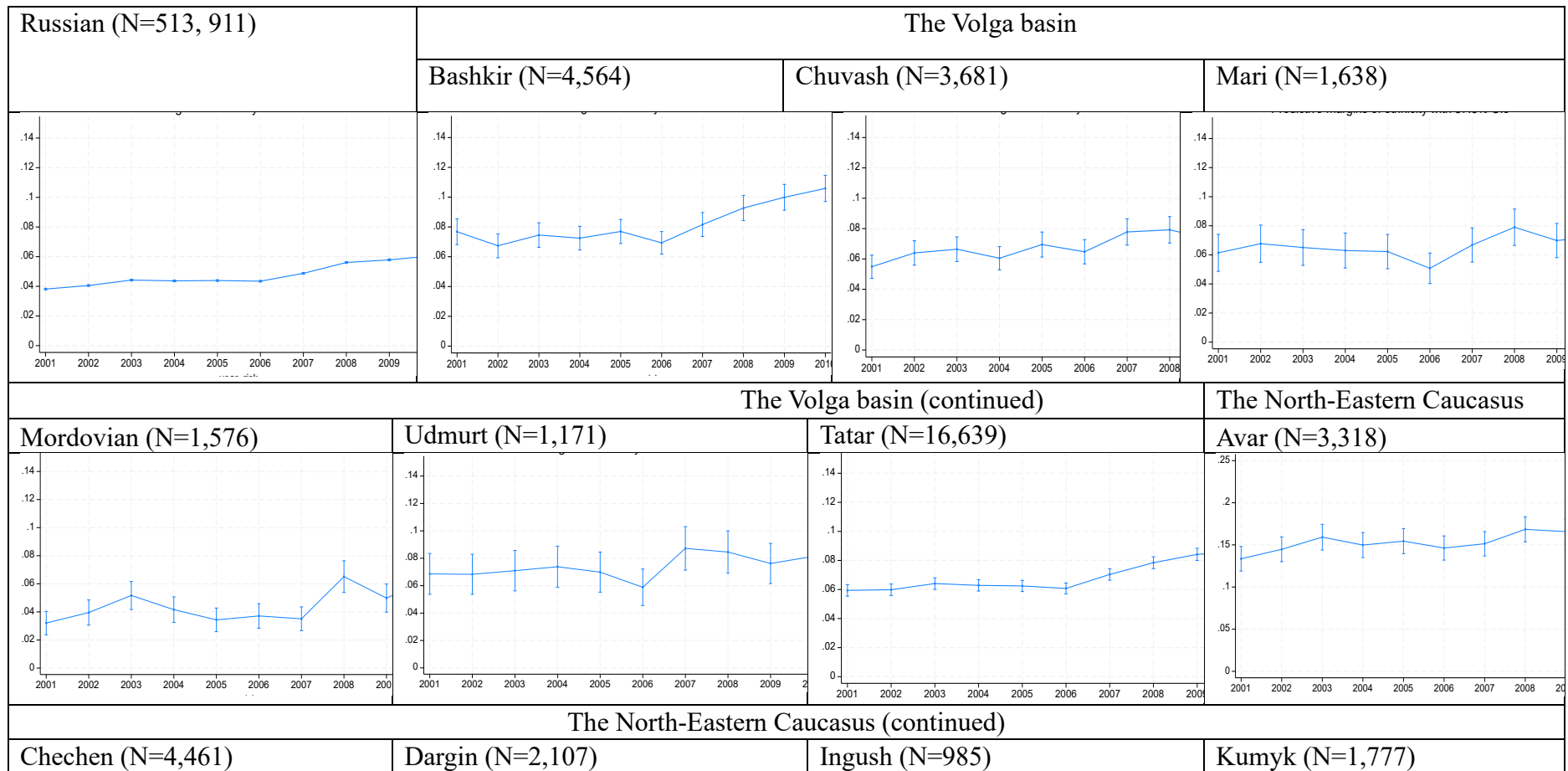
For the other two geographical areas, the results are more divergent. For two ethnicities of the North-Western Caucasus, Kabardian and Ossetic, the predicted probabilities after 2006 are consistently higher than before that year, and the growth was statistically significant compared

to several years between 2001 and 2006. Karachai-Balkar, however, followed the “North-East Caucasian” pattern with a small peak in 2008 and no statistically significant differences in predicted probabilities throughout the observed period.

Finally, among the ethnicities of Siberia and the Far East included in the study, only Buryat show a regular and statistically significant (for 2009-2010) increase of probabilities after 2007, following multidirectional dynamics in the preceding years. Tuvan demonstrate the “North-East Caucasian” probability trajectory with a peak in 2008 and subsequent decrease. For Yakut, despite having the largest sample among the ethnicities of this area, no significant effects of the Maternal Capital are detected.

The results support only one of the theoretical expectations put forward in Section 4: the effects of pronatalist policies become weaker with a higher intensity of fertility decrease in the preceding period. Comparing the results of the analysis with the ranking of the ethnicities in Table 2, we find that among the ethnicities taking the highest ten rankings on the speed of fertility decline between 1989 and 2002, only two, Buryat and Bashkir, showed a statistically significant increase of predicted probabilities of second births after 2006. By contrast, among the 10 ethnicities ranked lowest in intensity of fertility decline in Table 2, only one, Karachai, did *not* show a statistically significant increase of predicted probabilities after 2006. The ranking of the ethnicities on pace of recent fertility decrease appears to be a relatively strong predictor of policy reaction compared to the other explanatory alternatives considered here.

Figure 3. Predicted probabilities of second births by ethnicities and calendar years, at the means of the control variables



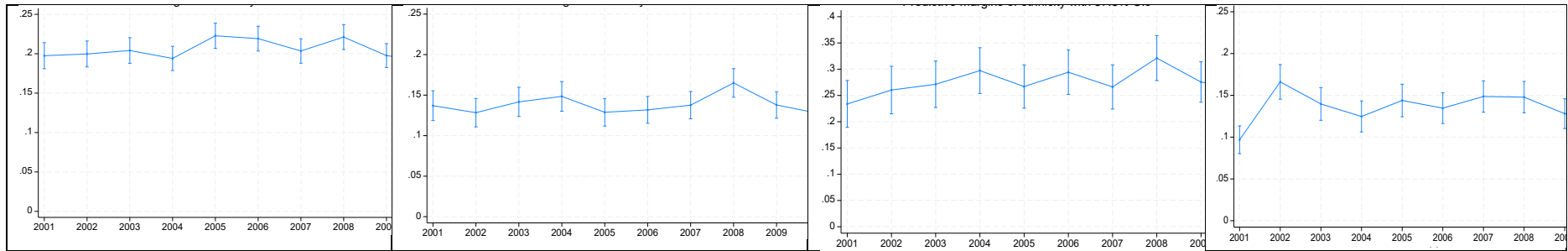
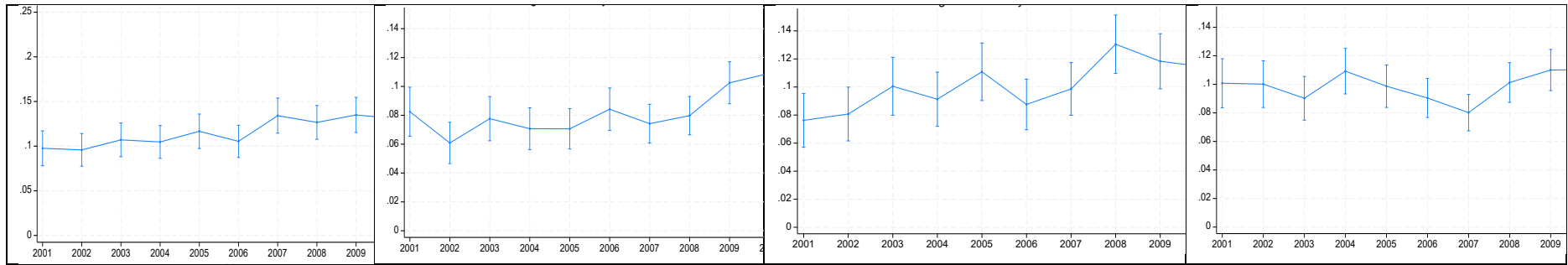


Figure 3 (continued)

The North-Eastern Caucasus (continued)		The North-Western Caucasus	
Lezgian (N=1,609)	Tabassaran (N=540)	Kabardian (N=1,709)	Karachai (N=989)
The North-Western Caucasus (continued)	Siberia and the Far East		
Ossetic (N=1,431)	Buryat (N=1,499)	Tuvan (N=1,102)	Yakut (N=1,866)



10. Discussion

We have studied the reaction of different autochthonous ethnicities of Russia to the pronatalist measures introduced in the country in 2007. In the context of current research on minority group responses to state measures of fertility support, our study is innovative in two aspects. First, we considered native ethnic minorities who resided in the country for centuries rather than migrants and their immediate descendants. Second, the policy we studied is rather unusual compared to fertility support policies most often considered in current research on fertility of migrants and minorities (see references in Section 2.2): the Maternal Capital in Russia was granted to families after childbearing independently upon their previous incomes, a measure which has not been used in the recent decades in other low fertility countries. With these two distinct contributions to current studies on effects of family policy among minorities, we attempt to enrich current knowledge in this field.

As the analysis has shown, it is not the case that the reaction to the Maternal Capital was stronger among the ethnicities concentrated in economically disadvantaged regions or among the ethnicities where educational levels and labor market participation of women were weaker. Moreover, the results were somewhat contrary to these expectations. This becomes especially clear if we compare the results for the ethnicities of the two geographical areas that contrast each other most sharply on economic development and on education/employment of women according to the data presented in Section 5: the ethnicities of the Volga basin, who are mainly concentrated in economically more developed regions and characterised with high labor market participation and education of women, and the ethnicities of the North-Eastern Caucasus, residing in economically much less prosperous regions and having lower levels of women education and employment. The analysis has shown that the reaction to the Maternal Capital was the strongest among the ethnicities of the Volga basin, who basically resembled ethnic Russians in their reaction. On the contrary, for the ethnicities of the North-Eastern Caucasus, the impact of the Maternal Capital upon second births was hardly observable. At most, the introduction of that policy was followed by a one-year increase of progressions to the second parity in 2008 for some ethnicities of the North-Eastern Caucasus, which means that some couples probably just shifted planned births to an earlier period as they were interested in fastest access to the Maternal Capital.⁸

⁸ The weakest reaction of the ethnicities of the North-Eastern Caucasus contrasts the findings of Sorvachev & Yakovlev 2020, who have shown that growth of birth numbers after the introduction of the Maternal Capital was negatively related to housing prices across regions. The regions of the North-Eastern Caucasus (Republics of

Our other expectations concerned previous fertility trends as factors shaping the reaction to the pronatalist policy. The expected better response to the policy from ethnicities with later start of fertility decrease was not detected by our analysis. However, the expectation was borne out that reaction of the ethnicities towards the Maternal Capital is negatively related to pace of fertility decrease in the period preceding the introduction of the policy.

To illustrate possible mechanisms underlying this relation, we consider the example ethnicities of the Republic of Dagestan in the North-Eastern Caucasus (Avar, Dargin, Kumyk, Lezgian and Tabassarans in our IPUMS data), which, according to our analysis, did not react to the Maternal Capital by a noticeable increase of second birth probabilities. Historically all of them (except Kumyk) resided in mountainous areas. Their migration towards the valley part of the republic and especially to its towns was observed already in the middle of the 20th century, but strongly intensified only in the 1980s and especially after the collapse of the Soviet system in 1991 (Belozarov 2005; Eldarov et al. 2007; Kazenin 2011; Kazenin & Kozlov 2023). This migration resulted in very deep social changes (Karpov & Kapustina 2011; Starodubrovskaja 2019), such as increased educational levels of women and their input to family incomes, the decreased role of extended families, higher autonomy of younger people from their parents in planning their life, etc. These social changes were accompanied with a considerable fertility decrease, as the change of fertility levels between 1989 and 2002 has shown us. It can be suggested that when fertility decreases under pressure of such radical social changes, the potential of state pronatalist measures to stop this decrease is very limited: they cannot over-ride the social forces suppressing fertility.

As a contrasting case, Ossetics can be considered as an ethnicity whose area of residence is quite close to Dagestan, but whose reaction to the Maternal Capital was very pronounced. This ethnic group started intensive urbanization much earlier than other ethnicities of both the North-Eastern and the North-Western Caucasus. At the time of the 1989 Census, the proportion of urban population among Ossetics was 63%, whereas among the ethnicities of Daghestan it ranged between 28 and 45%. As expected in the context of urbanization, fertility decrease among Ossetics also started much earlier than among their neighbors in the Caucasus, as total fertility of Ossetic women aged 45-49 in the 1979 Census was about 2.5 children per women (Figure 2). In fact, Ossetics resembled the ethnicities of the Volga basin on fertility levels and

Chechnya, Daghestan and Ingushetia) belonged to Russian regions with lowest housing prices in the 2000s, but in these particular regions this did not result in a growth of second birth probabilities in 2007-2010.

pace of fertility change, and reacted to the Maternal Capital policy similar to how Volga ethnicities reacted.

The role of preceding fertility trends has not been attended to in past research on ethnic minorities' reactions to pronatalist policies. Our findings do not support the assumption that ethnic minority groups' reaction to pronatalist policy measures may be related to their disadvantaged economic status or to the status of women in minority communities. Whether this finding is unique to Russia or to the particulars of the policy design is worth exploring further. We identified a few outliers to the overall trend we uncovered that provide useful opportunities for deeper study of the conditions affecting fertility in a context of newly introduced pronatalist policies.

One potential alternative to our interpretation of the results is that ethnicities with a relatively high intensity of transitions to the second child before the policy was introduced had fewer women who were potentially not going to have a second birth and could therefore be influenced by the policy. However, it is worth noting that even the ethnicities with higher second birth probabilities before 2007 experienced a considerable decline in progressions to the second child in the preceding decades. As Table A4 of the Appendix shows, even for the ethnicities of the North-Eastern Caucasus, characterized with highest progression rates to the second parity, that rate showed a 5-10% decrease between 1979 and 2002, so that after 2002 these ethnicities had the potential for a reversal⁹.

Also, one cannot exclude reasons for interethnic differences that were not purely demographic in nature. A possible explanation could relate to different levels of trust in the state pronatalist measures, which, in turn, could arise from different access to getting the financial allowance across regions or ethnic groups. Although a number of studies has confirmed that levels of trust to the policy varied among the population of Russia and were the lowest among the middle class, who prefer to rely on their own resources and capabilities (Borozdina et al. 2014; Temkina 2016), they give no evidence that this variation in some way correlated with ethnicity. Moreover, a qualitative survey undertaken in several regions where some of the ethnic groups with weaker reaction to the pronatalist policy reside have shown that families in those regions did not complain about any problems with access to the Maternal Capital (Kazenin 2022). Respondents in that survey acknowledged good implementation and general effectiveness of

⁹ Table A4 shows progression rates for women aged 40-44 at the Censuses. These women were close to completing their reproductive period at the time of the Censuses, but at the same time the rates calculated for them reflect more recent fertility trends than e.g. the rates calculated for the 45-49 age group.

the policy in their regions, although they did criticize pronatalist policies introduced separately by some regions for problems in access to them. It should be stressed, however, that this survey was undertaken in 2021 and does not reflect the realities of 2007-2010. Nevertheless, if problems with access to the Maternal Capital were serious at the start, they might be reflected in attitudes to this policy in the same regions in the later periods of time. More research is needed to explore the role of trust in the state policy for fertility outcomes.

Another important limitation of our study is that the “observation window” includes only the very initial period after the start of payments of the Maternal Capital. After 2010 fertility in Russia changed by a rather complex trajectory (Zakharov 2024), and differences between ethnicities in fertility of that period still need to be studied. On the other hand, a longer time horizon can make it difficult to separate a policy effect from other developments. It is also important to note that this study cannot contribute to the discussion of whether the Maternal Capital policy affected quantum or only timing of births among the considered ethnicities. It may be that the groups that showed a stronger policy response simply had the second child earlier than they would have in the absence of the policy, whereas the policy may not have made any difference to those who never planned to have a second child. Other limitations of our study come from data restrictions: we could include only a small number of individual socio-economic parameters in our study and we had to restrict the study to women residing in the same household with all their children in the time of the Census. In terms of interpreting our findings, mechanisms related to geographical or ethnic differences in how easily the Maternal Capital benefit was to receive might be at work as well. No research has explored whether ethnic minorities had a harder time accessing the Maternal Capital benefit or whether they had lower trust in accessing the benefit in comparison to ethnic Russians. But these mechanisms could contribute to a weaker policy response overall among ethnic minorities.

One more limitation is produced by the restriction of our study to transition to the second child. As mentioned in Section 1, the Maternal Capital in the studied period could be granted to families after the third or subsequent birth if it had not been granted at the second birth. It may be that in the minorities with fertility considerably higher than among ethnic Russians, third births reacted to the policy measure more actively than second births.

These limitations, however, do not put into question the general conclusions of the present study, which is among the first attempts to consider ethnic differentials in how state pronatalist policies influence fertility. Our findings suggest in the case of Russia that interethnic

differences in reaction to such policies are not best understood through socio-economic characteristics of minority ethnicities, including their potentially disadvantaged status, or by the value of high fertility in their culture. The efficiency of state support of fertility among ethnic minorities may depend seriously upon processes of fertility change observed among minority populations in the period before pronatalist measures were introduced.

REFERENCES

- Allison, P.D. (1982) Discrete-time methods for the analysis of event-histories. *Sociological Methodology*, 13, 61-98.
- Andersson, G., Hoem, J. M., & Duvander, A. Z. (2006) Social differentials in speed-premium effects in childbearing in Sweden. *Demographic Research*, 14(4), 51–70. <https://doi.org/10.4054/DemRes.2006.14.4>
- Andreev, E.M. (2016). The Final Effects of Russia's Demographic Policies of the 1980s. *Universe of Russia*, 25 (2), 68-97.
- Becker, G. S. (1991). *A treatise on the Family* (2nd edition). Harvard University Press.
- Belozеров, V. S. (2005). *The ethnic map of the North Caucasus*. Moscow: O.G.I. (In Russ.).
- Biegel, N., Wood, J., & Neels, K. (2021). Migrant-native differentials in the uptake of (in) formal childcare in Belgium: The role of mothers' employment opportunities and care availability. *Journal of Family Research*, 33(2), 467–508. <https://doi.org/10.20377/jfr-463>
- Billingsley, S., Härkönen, J. & Hornung, M. (2023). The Sensitivity of Family-Related Behaviors to Economic and Social Turbulence in Post-Socialist Countries, 1970-2010. *Comparative Population Studies*, 48. <https://doi.org/10.12765/CPoS-2023-19>
- Bogojavlenski, D. (2012). Census 2010: the ethnic dimension. *Demoscope Weekly*, No. 531-532. <http://demoscope.ru/weekly/2012/0531/index.php> (In Russ).
- Bongaarts, J., and Hodgson, D. (2022). *Fertility transition in the developing world*. Springer Cham.
- Borozdina, E., Rotkirch, A., and Zdravomyslova, E. (2014). Using maternity capital: Citizen distrust of Russian family policy. *European Journal of Women's Studies*, 1(1), 1-16. <https://doi.org/10.1177/1350506814543838>
- Brünig, B. (2023) *The Fertility of Migrants and Minorities in Europe: Fertility Intentions of Turkish Migrants in Germany and the Turkish Minority in Bulgaria Compared*. Springer.
- Cho, L.J., Retherford, R.D. & Choe, M.K. (1986) *The Own-Children Method of fertility estimation*. Honolulu: The East-West Center.
- Duvander, A.-Z., & Koslowski, A. (2023). Access to parenting leaves for recent immigrants: A cross-national view of policy architecture in Europe. *Genus*, 79(1). <https://doi.org/10.1186/s41118-023-00187-9>

- Eldarov, E. M., Holland, E. C., Abdulagatov, Z. M., Aliev, S. M. & Ataev, Z. V. (2007). Resettlement and migration in post-Soviet Dagestan. *Eurasian Geography and Economics*, 48(2), 226–248.
- Karpov, Y. & Kapustina, E. (2011). *Highlanders in the lowlands: Migrations in Dagestan in the 20th and the early 21th centuries, their social, ethnic and cultural consequences and prospects*. StPetersburg: Peterburgskoe Vostokovedenie (in Russ.). 486 p.
- Kazenin, K. I. (2011). “*Elements of the Caucasus*”: *Land, power and ideology in the republics of the North Caucasus*. Moscow: REGNUM (in Russ.). 211 p
- Kazenin, K.I. (2022). COVID-19 and fertility intentions: a qualitative study in six regions of Russia. *Population and Economics*, 6(4): 107-122. <https://doi.org/10.3897/popecon.6.e93480>
- Kazenin, K. & Kozlov, V. (2023). Ethnicity and fertility of descendants of rural-to-urban migrants: the case of Daghestan (North Caucasus). *Journal of International Migration and Integration*, 24(1), 69-93. <https://doi.org/10.1007/s12134-021-00848-8>
- Kazenin K. & Soroko E. (2021). Demographic modernization and age at first marriage of peoples of the North Caucasus. *Demographic Review*, 8(2), 95-122 (in Russ.). <https://doi.org/10.17323/demreview.v8i2.12784>
- Lesthaeghe, R. & Neels, K. (2002). From the first to the second demographic transition: an interpretation of the spatial continuity of demographic innovation in France, Belgium and Switzerland. *European Journal of Population*, 18, 325–360.
- Maes, J., Neels, K., Biegel, N., & Wood, J. (2023). Uptake of formal childcare among second generation and native mothers in Belgium: Can increasing local childcare availability narrow migrant-native gaps? *Genus*, 79(1). <https://doi.org/10.1186/s41118-023-00186-w>
- Maholtra, A., Vanneman, R., & Kishor, S. (1995). Fertility, Dimensions of Patriarchy, and Development in India. *Population and Development Review*, 21(2), 281-30
- Mason, K. O. (1987). The Impact of Women's Social Position on Fertility in Developing Countries. *Sociological Forum*, 2(4), 718-745.
- Milewski, N., & Brehm, U. (2023). Parental leave policies, work (re)entry, and second birth: Do differences between migrants and non-migrants in Germany increase? *Genus*, 79(1). <https://doi.org/10.1186/s41118-023-00198-6>
- Mussino, E., & Duvander, A.-Z. (2016). Use it or save it? Migration background and parental leave uptake in Sweden. *European Journal of Population*, 32(2), 189–210.
- Mussino, E., Duvander, A.-Z., & Ma, L. (2018). Does time count? Immigrant fathers’ use of parental leave for a first child in Sweden. *Population*, 73(2), 363–382.
- Mussino, E., Kraus, E. & Milewski, N. (2023). Introduction to the Thematic Series: Use and consequences of family policies among migrants and their descendants in Europe. *Genus* 79. <https://doi.org/10.1186/s41118-023-00204-x>
- Neyer, G. & Andersson, G. (2008). Consequences of Family Policies on Childbearing Behavior: Effects or Artifacts? *Population and Development Review*, 34(4), 699–724. <https://doi.org/10.1111/j.1728-4457.2008.00246.x>

- Payton, M.E, Greenstone, M.H., & Schenker, N. (2003). Overlapping confidence intervals or standard error intervals: What do they mean in terms of statistical significance? *Journal of Insect Science*, 3, 34.
- Perelli-Harris, B. & Gerber T. P. (2011). Non-marital childbearing in Russia: second demographic transition or pattern of disadvantage? *Demography*, 48(1), 317-342. <https://doi.org/10.1007/s13524-010-0001-4>
- Phan, L. (2013). Women's empowerment and fertility changes. *International Journal of Sociology of the Family*, 39(1/2), 49–75.
- Puur, A., Rahnu, L., Maslauskaitė, A., Stankuniene, V. & Zakharov S. (2012). Transformation of Partnership Formation in Eastern Europe: The Legacy of the Past Demographic Divide. *Journal of Comparative Family Studies*, 43(3), 389-417.
- Slonimczyk, F. & Yurko, A. (2014). Assessing the impact of the maternity capital policy in Russia. *Labour Economics*, 30, 265-281. <https://doi.org/10.1016/j.labeco.2014.03.004>
- Soroko, E.L. (2014). Ethnically mixed families in the Russian Federation. *Demographic Review*, 1(4), 96-123. <https://doi.org/10.17323/demreview.v1i4.1804> (in Russ.)
- Sorvachev, I., & Yakovlev E. (2020). Short and Long-Run Effects of a Sizable Child Subsidy: Evidence from Russia. *IZA Discussion Paper Series*. No.13019.
- Starodubrovskaja, I.V. (2019). The crisis of traditional North Caucasian family in the post-Soviet period and its social consequences. *The Journal of Social Policy Studies*, 17(1), 39-56. <https://doi.org/10.17323/727-0634-2019-17-1-39-56> (in Russ.)
- Temkina, A. (2016). Russian middle-class intimacy and family life. The life project and its constraints. In: K. Jõesalu and A. Kannike (Eds.) *Cultural Patterns and Life Stories* (Chapter 11): Tallinn University Press, 305-330.
- Zakharov, S. (2008). Russian Federation: from the first to second demographic transition. *Demographic Research*, 19, 907-972. <https://doi.org/10.4054/DemRes.2008.19.24>
- Zakharov, S. (2024). Three Decades on Russia's Path of the Second Demographic Transition: How Patterns of Fertility are Changing Under an Unstable Demographic Policy. *Comparative Population Studies*, 49, 25-54. <https://doi.org/10.12765/CPoS-2024-02> .

Appendix 1.

Table A1. Characteristics of the regions of residence of the ethnicities under study

Region	Population, 2010	Regional domestic product per capita, 2010, roubles	Ethnic group proportion in the region, 2010
<i>The North-Eastern Caucasus</i>			
Republic of Chechnya	1,268,989	55,995.7	Chechen – 95.3%
Republic of Dagestan	2,910,249	94,883.6	Avar – 29.4% Dargin – 17.0% Kumyk – 14.9% Lezgian – 13.3% Tabassaran – 4.1%
Republic of Ingushetia	412,529	48,239.2	Ingush – 93.5%
<i>The North-Western Caucasus</i>			
Republic of Kabardino-Balkaria	859,939	89,668.3	Kabardian – 57.2%
Republic of Karachai-Cherkessia	477,859	91,782.3	Karachai – 41.0%
Republic of Northern Ossetia – Alania	712,980	105,781.6	Ossetic – 64.4%
<i>The Volga basin</i>			
Republic of Bashkortostan	4,072,292	186,522.0	Bashkir – 29.5% Tatar – 25.4%
Republic of Chuvashia	1,251,619	125,843.0	Chuvash – 67.7%
Republic of Mari (Mari El)	696,459	118,110.4	Mari – 41.8%
Republic of Mordovia	834,755	125,975.2	Mordovian – 40.0%
Republic of Tatarstan	3,786,488	264,561.7	Tatar – 53.2%
Republic of Udmurtia	1,521,420	180,316.9	Udmurt – 28.0%
<i>Siberia and the Far East</i>			
Republic of Buryatia	972,021	137,564.9	Buryat – 29.5%
Republic of Tuva	307,930	99,999.9	Tuvan – 82.0%
Republic of Sakha (Yakutia)	958,528	403,658.5	Yakut – 49.9%

Table A3. Number of women in the risk sample for transition to the second child, by ethnicities

Ethnicity	N
Russian	513,911
<i>The North-Eastern Caucasus</i>	
Avar	3,318
Chechen	4,461
Dargin	2,107
Ingush	985
Kumyk	1,777
Lezgian	1,609
Tabassaran	540
<i>The North-Western Caucasus</i>	
Kabardian	1,709
Karachai-Balkar	989
Ossetic	1,431
<i>Siberia and the Far East</i>	
Buryat	1,499
Tuvan	1,102
Yakut	1,866
<i>The Volga basin</i>	
Bashkir	4,564
Chuvash	3,681
Mari	1,638
Mordovian	1,576
Tatar	16,639
Udmurt	1,171
Total	566,573

Appendix 2.

Table A2. Mean number of children born per women by ethnic groups, ages 40-44, 45-49 and 50-54, Censuses 2002, 2010 and 2021

	Age	2002	2010	2021
Russian	40-44	1.755	1.542	1.578
	45-49	1.809	1.675	1.520
	50-54	1.770	1.783	1.509
<i>The North-Eastern Caucasus</i>				
Avar	40-44	2.903	2.558	2.586
	45-49	3.227	2.719	2.576
	50-54	3.614	2.933	2.582
Chechen	40-44	3.130	2.869	2.723
	45-49	3.469	2.995	2.585
	50-54	3.857	3.148	2.525
Dargin	40-44	2.959	2.565	2.525
	45-49	3.315	2.782	2.532
	50-54	3.892	3.057	2.543
Ingush	40-44	3.617	2.912	2.729
	45-49	4.038	3.247	2.954
	50-54	4.439	3.553	3.159
Kumyk	40-44	2.760	2.451	2.518
	45-49	2.920	2.596	2.456
	50-54	3.206	2.743	2.418
Lezgian	40-44	2.716	2.318	2.306
	45-49	3.009	2.476	2.303
	50-54	3.438	2.729	2.340
<i>The North-Western Caucasus</i>				
Kabardian	40-44	2.371	2.147	2.043
	45-49	2.487	2.283	2.026
	50-54	2.616	2.401	2.045
Karachai	40-44	2.350	2.037	2.187
	45-49	2.595	2.198	2.106
	50-54	2.845	2.396	2.102
Ossetic	40-44	2.060	1.825	1.766
	45-49	2.199	1.971	1.766
	50-54	2.253	2.089	1.777
<i>Siberia and the Far East</i>				
Buryat	40-44	2.401	2.071	2.230
	45-49	2.624	2.263	2.125
	50-54	2.840	2.505	2.090
Tuvan	40-44	2.880	2.455	2.495
	45-49	3.362	2.666	2.422

	50-54	3.739	3.057	2.344
Yakut	40-44	2.428	2.286	2.433
	45-49	2.568	2.391	2.360
	50-54	2.600	2.503	2.315
<i>The Volga basin</i>				
Bashkir	40-44	2.125	1.983	1.897
	45-49	2.306	2.061	1.896
	50-54	2.434	2.194	1.899
Chuvash	40-44	2.052	1.839	1.887
	45-49	2.185	1.969	1.854
	50-54	2.255	2.136	1.851
Mari	40-44	2.176	1.945	1.959
	45-49	2.344	2.081	1.940
	50-54	2.435	2.257	1.971
Mordovian	40-44	1.885	1.665	1.630
	45-49	1.966	1.798	1.606
	50-54	2.065	1.916	1.630
Tatar	40-44	1.888	1.732	1.717
	45-49	1.969	1.833	1.709
	50-54	2.014	1.932	1.764
Udmurt	40-44	2.093	1.920	2.012
	45-49	2.183	2.040	1.973
	50-54	2.268	2.166	1.975

Table A4. Progression rates to the second child among women aged 40-44, by ethnicities, Censuses 1979, 1989, 2002, and 2010 (calculated using the data of Russian State Statistical Agency (Rosstat))

	1979	1989	2002	2010
Russian	0,696	0,656	0,666	0,537
<i>The North-Eastern Caucasus</i>				
Avar	0,934	0,930	0,893	0,873
Chechen	0,942	0,916	0,899	0,882
Dargin	0,942	0,940	0,892	0,881
Kumyk	0,935	0,923	0,883	0,857
Ingush	0,951	0,932	0,929	0,878
Lezgian	0,963	0,959	0,916	0,870
<i>The North-Eastern Caucasus</i>				
Kabardian	0,894	0,873	0,851	0,831
Karachai	0,913	0,900	0,850	0,806
Ossetic	0,857	0,814	0,808	0,760
<i>Siberia and the Far East</i>				
Buryat	0,890	0,832	0,802	0,745
Tuvan	0,938	0,929	0,869	0,809
Yakut	0,909	0,853	0,800	0,782
<i>The Volga basin</i>				
Bashkir	0,900	0,845	0,820	0,759
Chuvash	0,855	0,830	0,806	0,711
Mari	0,856	0,842	0,820	0,739
Mordvovian	0,857	0,811	0,772	0,643
Tatar	0,842	0,782	0,762	0,683
Udmurt	0,843	0,809	0,815	0,748

Stockholm Research Reports in Demography
Stockholm University,
106 91 Stockholm,
Sweden
www.su.se | info@su.se | ISSN 2002-617X



Stockholm
University

Demography Unit