PUBLIC INVESTMENTS IN FERTILITY AND THE COST OF RAISING A CHILD: A COMPARATIVE ANALYSIS

Oksana Shubat – Andrey Setyaev

Abstract

One of the key problems of modern Russia is depopulation, which is observed against the backdrop of a declining birth rate. The ongoing efforts of the state related to financial support for families do not give a positive result. The purpose of the paper is to assess and comparatively analyze government investments in fertility and expenditures on children by families. To conduct the research, we used data from official Russian population and labor market statistics, results of national sample observation of reproductive plans of the population, open data of the Federal Tax Service of Russia. The analysis produced estimates of the amount of public investment in the birth and maintenance of a child up to the age of 17 years. We also obtained estimates of expenditures on children by families (for different numbers of children in the family). The material costs of the family are not compensated (financially) in the future and are not covered by the state from the profits from investments in fertility. Based on the results obtained, ways to improve the effectiveness of government measures aimed at increasing the birth rate were proposed.

Key words: birth rate, investments, raising a child, economic theory of fertility

JEL Code: J13, H72

Introduction

One of the key problems of modern Russia is depopulation, which is observed against the backdrop of a declining birth rate. Over the past 5 years, the population has decreased by 0.5 million people — from 146.9 million people in early 2018 to 146.4 million people in early 2023; after 2015, the total number of births has been decreasing annually – in 2015, this figure was 13.3 children per 1000 population, whereas in 2022, only 8.9 children (Demographic indicators, 2023). The difficult demographic situation is observed in almost all regions of the country. In 2021, only 13% of Russian regions had a positive difference between fertility and mortality, thus having a natural population increase (UIISS, 2023). Migration growth in the

country is insignificant and will not drastically change the situation in the near future. In addition, researchers argue that labour migration poses serious risks for the state, escalating ethnic conflicts and problems of social and national tension in Russian society (Mojina, 2019).

To address demographic problems, the Russian government is pursuing an active pro-natalist policy, a range of programmes (mainly economic) aimed at increasing the birth rate. It seems however that the programmes do not produce the results expected, and their implementation and potential effectiveness constantly become the object of research and criticism.

There are several main reasons why the programmes aimed at increasing the birth rate are unsuccessful. First of all, financial incentives provided by these programmes are inadequate; they do not significantly influence the income level of families with children. Secondly, the legal framework of state programmes aimed at increasing the birth rate is underdeveloped. For instance, Russia has not adopted a law on large families; at the same time, it is large families that the government is primarily interested in, as they can help to prevent depopulation. Another important reason for the poor effectiveness of state fertility support programmes is the stereotypes in Russian society. People born in the post-Soviet period usually consider a large family as poor or low-income (Koneeva et al., 2021), which undoubtedly has a negative impact on the reproductive plans of the population.

We argue that to increase the birth rate and overcome depopulation trends in a post-industrial urbanised society, such as Russia, it is necessary to consider children in a family as an economic resource as well, which brings economic benefits to its owners. In other words, having children in a family should be economically advantageous both for the state and the family.

To add, an "economic perspective" on human beings is neither unique nor new. As early as 1662, W. Petty considered people as part of wealth, along with land and capital. He was perhaps the first to attempt to measure human capital quantitatively (Petty et al., 1997). In the 1960s, the theory of human capital was actively developed in the works of T. Schultz (Schultz, 1961), who defined human capital as an additional source of income that is provided by a person's knowledge, skills, and abilities. He believed that investments in human capital are key for economic growth.

The economic theory of fertility developed in the studies of Leibenstein (1957), Becker (1960) and a number of other economists and demographers. Their models of fertility choice were based on a negative relationship between income and fertility, as well as between women's labour force participation and fertility. Contemporary researchers base the economic theory

of fertility on other models including factors determining the compatibility of women's career and family goals as key drivers of fertility (Doepke & Kindermann, 2019). Demographic studies examine various economic determinants of fertility, such as the level of population income (Stanczyk, 2020), financial benefits (Cowan & Douds, 2022), unemployment rate (Kristensen & Lappegård, 2022), as well as employment stability and its flexibility for potential parents (Marynissen et al., 2020).

The study aims at evaluating and comparing government investments in fertility and family-related expenses associated with childbirth and child-rearing. Additionally, it seeks to assess the profitability of and returns on these investments for both Russian families and the state in general.

1 Data and Methods

For the purpose of this study, we applied the following data:

- Statistical data from the Russian Federation Pension and Social Insurance Fund on the allocation of maternity capital in the country. Maternity (family) capital is a state support measure for Russian families raising children. It represents a significant monetary amount provided by the government to families for each child born. This amount is differentiated depending on the birth order and is provided only once for each child.

- Data from the Russian Federation Pension and Social Insurance Fund on the monthly allowance payments related to childbirth and child-rearing.

- Statistical data from the Federal State Statistics Service of Russia on natural population movement, population size and composition, and average salaries.

- Data of the Federal Tax Service of Russia on mandatory charges (taxes, fees and other compulsory payments) to the Russian budget system.

The data mentioned is publicly available and can be accessed through the Unified Interdepartmental Information and Statistical System of the Russian Federation (UIISS, 2023). We utilised data as of the beginning of 2023 or the end of 2022.

As an additional source of information, we also used legislative acts of the Russian Federation establishing the retirement age in the country (Federal Law, 2018) and the amount of alimony (Family Code, 2023).

We carried out a comparative analysis, applied descriptive statistics methods, calculated coefficients, summary, and specific indicators.

2 Results

During the analysis, we obtained estimates of direct costs incurred by the government related to childbirth and child-rearing. In our assessments, we considered two key categories of government expenses. Firstly, the state allowance that is provided to Russian families due to the birth and upbringing of a child. This allowance is paid until the child reaches the age of 17. According to official data, federal and regional expenses for such allowances amount to 1.972 trillion roubles (€18.424 billion) for the current year. As of 2023, the population aged 0 to 17 years accounts for approximately 30.8 million people. Therefore, the average amount of state allowances per child is:

$$18.424 \text{ billion} \div 30.8 \text{ million} \approx €597.9 \text{ per year } (€49.5 \text{ per month}).$$

Over a period of 17 years, this amount will average

$$€597.9 \cdot 17 = €10165$$

It is important to note that according to Russian legislation, the state allowance is only provided to low-income families. Therefore, the actual number of the allowance recipients is less than 30.8 million people. However, for the purpose of obtaining average estimates of government expenses per child, this factor is not significant and does not distort the average figure.

The second category of direct government expenses related to childbirth and child-rearing is maternity (family) capital. According to official data, the government spent €3 billion on maternity capital payments in 2022. That year saw 1.304 million births; therefore, the government's expenses related to maternal (family) capital payments per child were:

$$€3 \text{ billion} \div 1.304 \text{ million births} \approx €2322$$

As noted previously, this amount is provided only once for each child and is differentiated based on the birth order. In our calculations, we did not take into account this differentiation, as it is not a significant factor for obtaining an averaged estimate and does not distort its value.

Thus, on average, the total direct costs of the state associated with compensation of family costs for the birth and upbringing of a child amount to:

$$€10165 \text{ (allowances)} + €2322 \text{ (maternity capital)} = €12487$$

It is important to note that other types of financial assistance to families with children are also being implemented in Russia. For example, these are various benefits that are usually established for low-income families. However, the amount of these benefits is extremely

insignificant in the total amount of government spending on supporting families with children. Taking this amount in account will practically not change the estimate we received.

Further analysis estimates the economic benefit to the state from the birth of each child. We based our calculations on the idea that the state receives direct income in the form of taxes from an average citizen. According to official statistics, the average monthly salary in Russia in 2023 is €710. With this level of salary and the current tax burden, a working citizen contributes an average of €5419 in taxes to the state budget per year.

According to Russian legislation, the retirement age for women is 60 years and for men is 65 years, while individuals can start full-time employment at the age of 16. However, in reality, the average citizen enters the workforce at the age of 18. Therefore, the duration of the working activity, during which the state receives tax payments, is 42 years for women and 47 years for men. On average, this figure is 45 years. Consequently, an average citizen, through their work, provides the state with income (in the form of tax revenues) amounting to:

$$€5419 \cdot 17 = €243852$$

To note, if we consider direct costs of the state associated with the birth and upbringing of a child as investments in fertility, it becomes evident that the return on such investments is several times higher than the highest interest rates on deposits in Russian banks. Indeed, an investment of €12487 (the total direct costs of the state associated with the childbirth and child-rearing) over 45 years allows to return €243852. Thus, the rate of return is over 41% per annum. In 2023, the highest interest rate offered by the country's state bank on deposits is 12% per annum. Therefore, the return on state investment in fertility exceeds the return on the most profitable deposits in the state bank by more than 3 times.

Further analysis assesses the expenses of an average Russian family associated with the birth and upbringing of a child. Importantly, estimates of such expenses are very different because researchers use various sources of data, methods for collecting necessary information, and calculation techniques. There is no generally accepted methodology for obtaining such estimates.

As a benchmark for estimating the minimum level of such expenses, we use legally established alimony payments. They represent a certain percentage of the parent's income and allocate 25% for one child, 30% for two children, and 50% for three children. Taking into account the average salary in Russia in 2023, parents spend €355 per month for one child, €426 for two children, and €710s for three children. Until the children reach the age of 18, when they can start working and support themselves, parents' expenses amount to €76 687, €92 019, and €153 374, respectively.

Tables 1 and 2 present the estimates obtained for an average Russian family and the state. The calculations were carried out for families with 1-5 children. Note that if there are more than three children, it is up to the court to decide on the amount of alimony. In our calculations, we used the arithmetic average of the alimony amounts for previous children.

Tab. 1: Expenses estimates for average Russian family associated with birth and upbringing of children, euro

Number of children in the family	Family expenses associated with the birth and upbringing of children	Family expenses associated with the birth and upbringing of children reimbursed by the state	Uncompensated financial loss
1	76 687	12 487	-64 200
2	92 019	24 964	-67 055
3	153 374	37 371	-116 003
4	199 379	49 928	-149 452
5	247 588	62 411	-185 177

Source: authors' calculations

Tab. 2: Estimates of direct government expenses and income associated with the birth and upbringing of a child, euro

Number of children in the family	Direct government expenses associated with the birth and upbringing of a child	Government income received during the period of a citizen's employment	Government profit received during the period of a citizen's employment
1	12 487	243 851	231 364
2	24 964	487 703	462 739
3	37 371	731 555	694 184
4	49 928	975 407	925 479
5	62 411	1 219 258	1 156 847

Source: authors' calculations

Calculations show that the state benefits from human resources in the country (i.e., from increasing the number of citizens who will generate state income in the form of taxes in the future). However, it is the family that bears the main financial burden associated with childbirth and child-rearing. The state does not cover the material costs of the family from the profit of investments in fertility.

3 Discussion and Conclusions

The research conducted raises a number of controversial questions. First and foremost, we acknowledge that our calculations are approximate. A multifaceted socio-psychological phenomenon, parenthood is undoubtedly a complex and difficult-to-quantify research subject. However, our estimates still show the huge difference in expenses borne by the state and a family in relation to the birth and upbringing of children. Moreover, families have to bear uncompensated expenses, which is one of the most important reasons for the inefficiency of government measures aimed at increasing fertility.

We argue that there are two ways to improve the effectiveness of these measures. Firstly, the development of a special government programme for investing in the reproduction of human resources, where the family should be considered as an investment partner of the state, bearing certain costs associated with childbirth and child-rearing. Such a joint investment project in the reproduction of human resources should obviously be mutually beneficial.

Surely, the detailed development of this investment project needs further research. It appears that family's expenses for the birth and upbringing of children within such a project should be reimbursed primarily in two directions. Firstly, it should provide large families with an opportunity to solve their housing problem. For example, when a family has a third child, the expenses for their upbringing should be reimbursed in such an amount that allows the family to afford decent housing (for instance, in 2023, a 100 sq. m apartment in a regional centre can cost up to 112 000 €). Secondly, it is crucial to prioritise the expenses compensation for the birth and upbringing of third and subsequent children, as only such birth numbers can stop depopulation in society. Therefore, parents who raised three or more children should receive a monthly financial reward that is significantly higher than €49.5 currently paid per child (the average monthly amount of state child benefits). According to some expert estimates, this amount should be approximately €450 per child and €1350 for three children, which represents around 9-10% of the average working citizen's total tax contributions to the state budget.

The second way to enhance the effectiveness of government programmes aimed at increasing fertility is related to changes in the state's demographic information policy. It is necessary to develop coherent and interconnected tools that will create and strengthen a positive image of large families in Russian society.

Acknowledgment

The study was conducted as part of the project “Russian Pro-Natalist Policy Support Institutions: Potential and Prospects for Influencing Birth Rate Growth” supported by the Council for Grants of the President of the Russian Federation for State Support to Leading Scientific Schools of the Russian Federation. (SS-1327.2022).

References

Becker, G. S. (1960). An Economic Analysis of Fertility. In: Demographic and Economic Change in Developed Countries, pages 209-240, National Bureau of Economic Research, Inc.

Cowan, S. K., & Douds, K. W. (2022). Examining the Effects of a Universal Cash Transfer on Fertility. *Social Forces, 2*(101), 1003-1030. https://doi.org/10.1093/sf/soac013

Demographic indicators of the Federal State Statistics Service. URL: https://rosstat.gov.ru/folder/12781 (accessed on 20.08.2023).

Doepke, M., & Kindermann, F. (2019). Bargaining over Babies: Theory, Evidence, and Policy Implications. *American Economic Review*, 9(109), 3264-3306.

Family Code of Russia. URL: http://pravo.gov.ru/proxy/ips/?docbody&nd=102038925 (accessed on 10.09.2023).

Federal Law No. 350-FZ On Changing Certain Legal Acts of Russia Related to Appointing and Granting Pensions (adopted on 3 October 2018). URL: http://publication.pravo.gov.ru/Document/View/0001201810030028 (accessed on 23.08.2023).

Koneeva, E.V., Chizhikova, E.S, & Serebryanskaya, V.N. (2021) A large family and its image in modern youth. *Human Capital, 12*(156), 108-112. DOI: 10.25629/HC.2021.12.10

Kristensen, A. P., & Lappegård, T. (2022). Unemployment and fertility: The relationship between individual and aggregated unemployment and fertility during 1994–2014 in Norway. *Demographic Research, 46*, 1037–1064. https://doi.org/10.4054/demres.2022.46.35

Leibenstein, H. (1974). An interpretation of the economic theory of fertility: Promising path or blind alley? *Journal of Economic Literature, 12*(2), 457-479.

Marynissen, L., Neels, K., Wood, J., & Van de Velde, S. (2020). Ready for parenthood? dual earners’ relative labour market positions and entry into parenthood in Belgium. *Demographic Research, 42*, 901–932. https://doi.org/10.4054/demres.2020.42.33

Mojina, N.V. (2019). Adaptation of migrants in Russia: a challenge of time, or the risk of loss of its identity. *Bulletin of Bashkir State Medical University, 2*, 190-196.

Petty, W., Hull, C. H., & Graunt, J. (1997). *The economic writings of sir William Petty*. Routledge/Thoemmes Press.

Schultz, T.W. (1961). Investment in Human Capital. *The American Economic Review*, *51* (1), 1-17.

Stanczyk, A. B. (2020). The dynamics of U.S. household economic circumstances around a birth. *Demography*, *57*(4), 1271–1296. https://doi.org/10.1007/s13524-020-00897-1

UIISS: Unified Interdepartmental Information and Statistical System of the Russian Federation. Retrieved from: https://fedstat.ru/organizations/ (accessed on 25.08.2023).

Contact

Oksana Shubat
Ural Federal University
Mira st., 19, Ekaterinburg, Russia, 620002
o.m.shubat@urfu.ru

Andrey Setyaev
Ural Federal University
Mira st., 19, Ekaterinburg, Russia, 620002
asetyaev@yandex.ru