

MATHEMATICAL MODELING OF THE CONSUMER LOAN MARKET IN RUSSIA UNDER SANCTIONS

Trusov N.V.

*Federal Research Center "Informatics and Management" of the Russian Academy of
Sciences, Moscow, Russia*

*Moscow Institute of Physics and Technology, Dolgoprudny, Moscow Region, Russia
M. V. Lomonosov Moscow State University, Moscow, Russia*

*Moscow Center of Fundamental and Applied Mathematics, Moscow, Russia
trunick.10.96@gmail.com*

The consumer credit is an important element of economic relations in Russia. It is a mechanism for social adaptation of the population to the risks of income instability. The consumer credit is a highly profitable asset for commercial banks. A big amount of borrowers in Russia have low real incomes and their demand for consumer credit is not elastic with the interest rate. This distinguishes the domestic consumer credit market from classical market models. The current situation may turn into a financial pyramid, and borrowers in the mid-term will not be able to pay off the taken consumer loans. This will give a rise to a crisis in the banking system. Nowadays, the problem of growing debt on consumer loans has sharply aggravated. The sanctions aim to exacerbate social tension, reduce the effectiveness of government at the federal level and cause the disintegration of the power. The question arises: how will the consumer loan market change under the current circumstances and will it be able to perform the function of social adaptation in combination with direct transfers from the budget?

The modeling of the households' economic behavior is based on the Ramsey-type model [1]-[4]. The model is identified according to Russian statistics. A specialized software has been developed with the help of which the data of household surveys collected by the Federal State Statistics Service have been studied. The model is used to analyze the problem of maintaining consumer credit under the current conditions as a mechanism for social adaptation of the households.

The work has been supported by RFBR, project no. 20-07-00285.

REFERENCES

1. *A. Shaninin, M. Tarasenko, N. Trusov* Consumer loan demand modeling of households in Russia // *Computational Mathematics and Mathematical Physics*, 2021, 61(6), P.1030-51.
2. *A.A. Shaninin, M.V. Tarasenko, N.V. Trusov* Consumer Loan Demand Modeling // *Mathematical Optimization Theory and Operations Research: Recent Trends. CCIS*, 2021, 1476, P.417-28.
3. *A.A. Shaninin, N.V. Trusov* The household behaviour modelling based on Mean Field Games approach // *Lobachevskii Journal of Mathematics*, 2021, 42(7), P.1738-52.
4. *A.A. Shaninin, N.V. Trusov* Mathematical modeling of the consumer loan market in Russia under sanctions // *Doklady Mathematics*, 2022, 507(6), P.71-80.