

# A model of Russian economy on the base of social stratification

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**Abstract**—Further growth of Russian economy by increase in loading of old production capacities is already impossible, as their current loading is close to limit and can only decrease in process of capacities ageing. This paper presents a model of Russian economy based on explicit description of social stratification. Each stratum has its own demographic characteristics. Contribution of a stratum in gross national product is defined by its employment rate and labor force. One purpose of research consists in estimation of model parameters that give best fitting of economic macroindexes calculated by model to statistical time series for them. Identified model of Russian economy is used for forecasting of economic macroindexes. To identify the model for comprehensible time we use parallel calculations on cluster supercomputer on C++ programming language with technology of message passing interface. We determined parameters of the model by indirect way comparing calculated time series of model macroindexes with available statistical time series for them in 2001 - 2009. The time series are considered similar if they are close as functions of time. The closeness is measured by Theil index. Identified model is used to carry out scenario calculations and for the forecast of development of Russian economy. The similar pattern of social stratification is used in modeling of the regional economy based on the mathematical description of interactions between six strata of the Vyatka Region. Constructed model of economy taking into account social stratification allow not only do look-ahead calculations about development of Russian economy, but also allow to answer questions on who will be occupied in the program of modernization and how it will be done.

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