THE STUDY OF NON-EQUILIBRIUM PROCESSES IN THE MONETARY ECONOMY BY IMMERSION INTO THE DIFFERENTIAL PROCESS

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The work is devoted to solving various model problems of studying non-equilibrium processes in the monetary economy by immersion in the differential process as an effective tool of theoretical and practical economics. The problem statement with initial data for the study of non-equilibrium processes in the monetary economy is carried out in the framework of the basic Friedman and Fisher model and equations for the dependence of price on time. Various variants of the method of immersion in a differential process are proposed depending on the value of the adaptation parameters: a regular process, a singular process (Tikhonov process), a mixed-type singular process and a method of immersion in a fractional differential process. After reducing the problem to dimensionless parameters, a nonlinear problem with initial data for a system of partial differential equations of hyperbolic type is obtained. The work considers a singular model problem, a stationary model problem, a model problem for partial differential equations of the first order, and also dimensionless systems of the equation of monetary economy taking into account nonlinear dynamics for the price. The proposed problem statements after immersion in the differential process are solved by standard methods of computational mathematics. The uniqueness of the solution of the model problem, which describes free oscillatory processes in a non-equilibrium system using a special "potential" function, is proved.

Keywords: non-equilibrium process, monetary economy, immersion method into the differential process, regular process, singular process, fractional non-equilibrium process.

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