

# FORMALIZATION OF THE OPTIMIZATION MODEL OF STRUCTURAL SHIFTS IN THE ECONOMY OF THE COUNTRY BASED ON INPUT-OUTPUT BALANCE

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The article is devoted to the use of mathematical modelling of economic processes in the study of structural shifts in the economy of a country. The author generalized three ways of building optimization models of input-output balance. The study is based on a methodological approach that envisages that there are branch priorities in the resource allocation and thus the redistribution of resources between types of economic activity is carried out. The work gives a generalized scheme of building a model of structural shifts in the economy of the country. In the proposed scheme, three main components of the model have been distinguished: information sources, six stages of model formalization, and results that the researcher has to obtain at each stage.

In order to construct a model of optimization of structural shifts from the model of input-output balance, we transform the basic equation of balance into inequality, which will allow forming the space of strategies, and for the target functions, we will obtain those macroeconomic indicators that can be calculated by means of input-output balance, namely: gross domestic product,

gross production output, production costs necessary for the corresponding gross production output.

It is proposed to improve the methodology of constructing these models by using an incremental approach. Such an approach allows transforming a static economic-mathematical input-output model (or Leontief model) into optimization one.

Calculation results according to the proposed model are a set of several variants of the national economic optimal forecast. The scientific novelty lies in the following: the author further developed the methodology of using the input-output balance for the optimization of structural shifts in the economy that will lead to the improvement of the main macroeconomic indicators of the country; new proposals of methodical nature for the economic-mathematical model formalization are developed and implemented.

The practical significance of the conducted research lies in the fact that the model built in this way can be used in the future for the optimization of other macroeconomic indicators, which are directly related to the input-output model.