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## SELECTIVE ALGORITHM FOR FORMING EFFECTIVE INDUSTRIAL PROFILE OF THE REGION (ON THE EXAMPLE OF PLASTICS AND SYNTHETIC RESINS INDUSTRY)

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**Abstract.** The issues of ensuring the competitiveness of a country and a region are among the key issues on the agenda of federal and regional authorities. When implementing industrial policy to ensure a dynamic, balanced industry, it is proposed to form an industrial profile as the center of the object of managerial influences. Industrial profile is a composition of the core and priority types of economic activities and industrial companies that contribute to the rapid growth of socio-economic indicators of the region, forming the current and strategic level of competitiveness. Formation of effective industrial profile includes selection types of economic activities and industrial companies which comply with criteria of advanced dynamics. In order to form an industrial profile we developed a selective algorithm which implies an assessment of the effectiveness of regional producers basic localization.

**Keywords:** region, industrial profile, structural decomposition, advanced dynamics, selective algorithm.

In the conditions of continuing global turbulence and macroeconomic crisis the issues of finding ways to develop new growth points are of particular relevance in the context of solving the problems of regional competitiveness and interregional balance. Industry as a basis of economic sustainability is one of the important components of the socio-economic system of the region. In order to ensure a dynamic, balanced and efficient industry, it is proposed to form an industrial profile as a central object of managerial influences [1, 2].

We understand an industrial profile as a composition of core and priority types of economic activities (at the meso-level) and industrial companies (at the micro level), contributing to the rapid growth of socio-economic indicators of the region at the macro level, forming the current and strategic level of its competitiveness [3].

For the purpose of forming a dynamic industrial profile of the region, it is necessary to proceed from the position of advanced growth and development. If an enterprise on its way of development overcomes all growth banks, fulfilling the advance conditions at

each level of the structural position from CL to NIL, such an enterprise can be considered anchor and can be included in the industrial profile of the region (Figure 1). The condition of advancing growth in this case can be expressed as follows:

$$cCL > cRL > cRIL > cIL > cNIL,$$

$cNIL_{p,ij}cNIL_{p,ij}$  - a component of the macroeconomic level of the manufacturing industry for the p-th production of the i-th region of the j-th type of economic activity;

$cIL_{p,ij}cIL_{p,ij}$  - a component of the macroeconomic level of type of economic activity for the p-th production of the i-th region of the j-th type of economic activity;

$cRIL_{p,ij}cRIL_{p,ij}$  - a component of the meso-level of the manufacturing industry for the p-th production of the i-th region of the j-th type of economic activity;

$cRL_{p,ij}cRL_{p,ij}$  - a component of the meso-level of type of economic activities for the p-th production of the i-th region of the j-th type of economic activity;

$cCL_{p,ij}cCL_{p,ij}$  - a component of the micro level of production for the p-th production of the i-th region of the j-th type of economic activity.

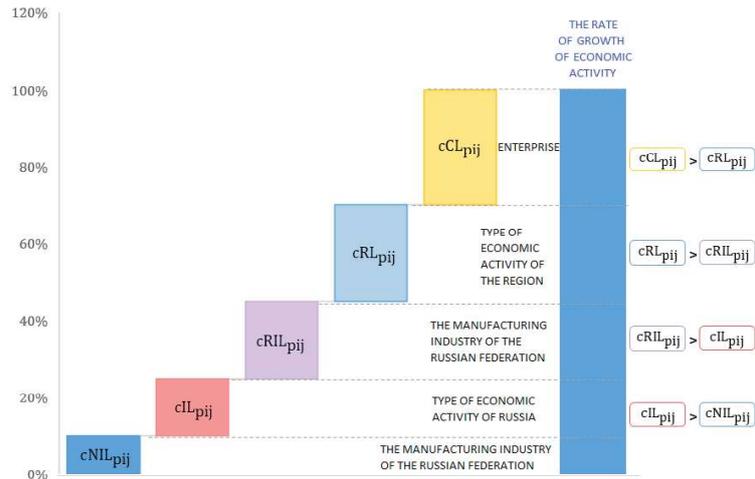


Fig. 1 The direction of development of the enterprise when the condition of priority development  
Source: author's approach

A selective algorithm involves the selection of subjects of economic activity when the condition of the leading dynamics is fulfilled. Schematically, the algorithm is presented in Figure 2.

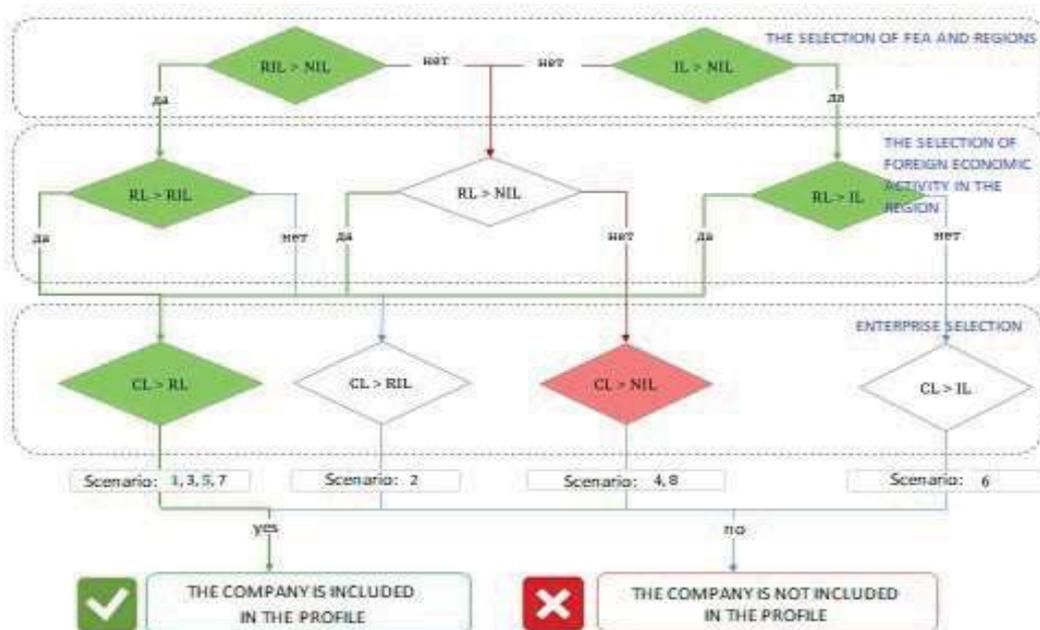


Fig. 2 Selective algorithm of forming an effective regional industrial profile [4]  
Source: author's approach

Fulfillment the condition of advanced development provides the necessary growth trajectory of the enterprise in the event of its inclusion in the industrial profile of the territory. The production is considered in two aspects: regional and industrial, verifying the fulfillment of the required conditions both at the macro, meso and micro levels, and at the industrial level - a type of economic activity. Due to the variability of possible combinations, the general scheme of the selective formation algorithm assumes the following condition: each of the levels of the hierarchy must be ahead of the next level in growth rates, thereby acting as an industry growth driver. In general, the selection criterion is as follows: the growth rate of the micro-level is ahead of the growth rate of the meso-level, which is ahead of the growth rate of the macro-level. In total, there are 8 possible scenarios within the framework of the selection of enterprises, for each of which a number of conditions are fulfilled. For each scenario, two outcomes are possible: either inclusion in the profile when fulfilling the above criteria, or refusal to include. The decision on the inclusion is made at the third stage of the selective algorithm, when selecting manufacturers on the basis of specified advance conditions [4]

In order to test the proposed hypothesis and the developed algorithm, the approbation was carried out on the example of the type of economic activity "Production of plastics and synthetic resins" (OKVED 20.16).

Table 1

#### Results of a selective industrial profile formation algorithm

Manufacturing enterprise	Regional scenario	Industrial scenario
BSK	1	5
KAZANORGSYNTEZ	1	5
KUYBYSHEVAZOT	4	6
STAVROLEN	2	6
ZAVOD NOVYH POLIMEROV SENEZH	4	6
DAU IZOLAN	1	5
POLYOM	1	5
SAYANSKHIMPLAST	2	6

Source: author's approach.

The application of the selective algorithm to the type of economic activity "Production of plastics and synthetic resins" significantly distinguishes the manufacturers of this type of economic activity. This difference is typical both for the scenario selection and for the structural decomposition of dynamics, where a significant component is shifting from the macroeconomic level (cNIL) to the level of type of economic activity of the Russian Federation (cIL). In terms of algorithmic selection, enterprises have different types of scenarios. Kuibyshevazot and the New Polymers Plant Senezh relate to scenarios 4 and 6. The regional 4 scenario characterized by the fact that the advance conditions are not fulfilled at the macro and mesolevels, which is why this scenario is considered the least preferred. The industry level 6 scenario assumes the fulfillment of the first level condition; however, at the next levels, the advance condition is not met and enterprises cannot be included in the industrial profile. Stavrolen and Sayanskhimplast enterprises are also referred to as Scenario 6 in the sector, in the regional - as Scenario 2, which is characterized in a similar way by the implementation of the first stage of selection and the failure to follow. The enterprises of BSK, Kazanorgsintez, DAU Izolan and Poliom are assigned to scenarios 1 and 5 - the most preferred scenarios in terms of the selective selection of enterprises in the formation of an industrial profile. At the third level, Kazanorgsintez enterprises and DAU Izolan enterprises also showed a negative result when verifying compliance of manufacturers with the advance condition at the third level, and, as a result, these enterprises cannot be recommended for inclusion in the industrial profile of the region during the analyzed period. In the plastics market, two manufacturers are exceptions, both for this market and for the analyzed enterprises of other foreign economic activities. BSK and Poliom, which are characterized by alternative scenarios, rather than competitors of this market, have an excellent structural decomposition with a predominance of the regional level of foreign economic activity in determining the dynamics and direction of the enterprise. The noted producers are assigned to scenarios 1

and 5 in the regional and sectoral sections, respectively. BSK and Poliom fulfill the condition of advancing at the third selection level, thereby obtaining a recommendation for their inclusion in the industrial profile of the Republic of Bashkortostan and the Omsk Region. These enterprises, in their dynamics, are ahead of the growth rates of local foreign economic activities, which, in turn, are ahead of the manufacturing industry of the Russian Federation.

The results of selective selection allow not only to determine the profile production for the regions, but also to highlight the industry leaders in order to study in detail the factors that increase their efficiency in localization in these regions.

A selective algorithm for the formation of an industrial profile allows for an analysis of the current profile of a region in terms of its structural conformity with the objectives of the long-term dynamic development of industry. Another aspect of the application of the algorithm is the formation of macroeconomic and mesoeconomic benchmarks. The anticipated development condition laid in the basis of the algorithm makes it possible to form a stable framework of the industry of the regions and ensure long-term growth due to the advanced development of production.

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