

SYSTEM OF INDICES FOR THE EVALUATION OF THE IMPLEMENTATION OF STRATEGIC PROGRAMS AND PLANS FOR THE PRODUCTION OF THE SCIENCE CONSUMING PRODUCTION

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Abstract. *Strategic programs and plans of production of the science consuming items are implemented by industrial enterprises of different branches of Russian economics. Most such programs and plans have been approved at the level of relevant ministries and agencies and have been agreed with the Government of Russia. Naturally, results obtained in the course of its implementation, as well as revealed problems year by year attract more and more attention from governing organs of enterprises, the directorship of branch ministries and agencies, the Government of the country, as well as from socially active citizens. Main efforts, referred to the implementation of strategic programs and of plans of production of science consuming items, are directed to the formation of fundamental bases for the development of the industrial potential of Russian economics. For the purpose of the active involvement of regions in entities of the Russian Federation in the solution of this task was created the extensive industrial infrastructure. In comparison with the year 2012 the number of regional industrial parks (RIP) has increased in 4 times. Nowadays in the territory of such 110 RIP are functioning more than 2,5 thousands of Russian and foreign industries. More than 3 thousands of other companies are releasing high technology production in 45 industrial technical parks. Mentioned measures, as well as some other ones have contributed to the prompt solution of the task of the increase of production of high technologic items. During last 5-6 years this trend has shown a range of positive results. Anyway, its existence keeps on the acuteness of the evaluation of the efficiency of spending of provided funds and of the implementation of several measure within frames of strategic programs and plans. This article will offer the system of indices, which can be used for the solution of the studied problem.*

Keywords: *science consuming production, production, system of indices, evaluation of the implementation, strategic programs and plans.*

Introduction. Measures within frames of strategic programs and plans for the production of science consuming items are being implemented provided the solution of certain tasks and the achievement of certain goals, which are established by the Government of Russia. First of all, let's highlight such goals as: development of the competitive ability; increasing quality and scopes of the home made production, its correspondence to world

standards; protection of the development and stimulation of national manufacturers to produce the science consuming production; provision for the economic safety of the state; replacement of imported items, completing parts and technologies by the home made production with its following access to foreign markets [1].

It is expected that in 2020 the developed infrastructure will allow to increase the num-

ber of enterprises, orientated to the innovative production of science consuming items. Just the development and the implementation of latest technologies will finally contribute to the creation of new working places for qualified experts. Besides that, it is planned to fully terminate the development of the complex of technical regulations and national standards in order to overcome barriers in the field of foreign trade, as well as to increase the number of patented technologies for the purpose of its implementation in production activities. The implementation of the totality of mentioned factors will adhere to the increase of the production of science consuming goods by enterprises from different branches of Russian economics. The accounting of such processes will require to generate the system of indices for the evaluation of the level of the implementation of strategic programs and plans of the production of science consuming items.

Research purpose. The main purpose of this research is to substantiate the system of indices, allowing to evaluate the degree of the implementation of both strategic programs and plans of production of science consuming goods in the context of different management levels, starting from a certain enterprise and continuing by the general level of economics.

Research results. In the course of the implementation of strategic programs and plans of production of science consuming items in certain branches of Russian economics were obtained some positive results, what showed, first of all, in the decrease of purchases of the import equipment and of completing parts. Anyway, nevertheless, Russian economics still highly depend from supplies of the imported production and equipment [2, 3]. From these considerations the management of the growth of the production of science consuming items in the real sector of Russian economics is not possible without the development of methodic instruments, allowing to carry out the comprehensive analysis of the level of implementation of strategic programs and plans for the production of science consuming items.

The high applicability of such problems caused the high number of publications of national scientists, offering different ap-

proaches to the solution of this problem. Most of it draw the attention to the fact, that the implementation of strategic programs and of plans of production of science consuming goods in some branches of the Russian economics depends not only from the achievement of established goals, but also from functional peculiarities of the use of all kinds of resources (labor, financial, material & technical, informational etc.) [4, 5, 6]. With that modern researchers do not much encompass substantiations of the economic expedience of certain measures and projects while evaluating the efficiency of the implementation of certain measures within frames of strategic programs and plans. For example, authors of the work [7, p. 166] consider the efficiency of measures within frames of the implementation of strategic programs and plans of the production of science consuming goods in some branches of Russian economics as a complicated economic category. It see its main purpose as the provision for the national security, which can be achieved by the rational replacement of the imported equipment and completing parts by the home made production, which price, quality and functional characteristics can compete with foreign made analogues.

Basing on peculiarities of the management of the production of science consuming items at industrial enterprises from different branches of Russian economics it is considered expedient to offer the approach, while highlighting three levels of management, each of which is solving its spectrum of problems and undertakes all necessary efforts in order to achieve established targets.

First of all, that's the microlevel, determining the efficiency of the implementation of certain measures within frames of the implementation of strategic programs and of plans of the production of science consuming goods relating to a certain industrial enterprise. At the meso-level the efficiency of the implementation of strategic programs and of plans of production of science consuming goods will be determined in relation to the measurement of values of estimates, to the formation of technologic chains of value with the finalized cycle of the production of final items at the branch level, as well as to the

structure and the path dependency of the reproductive system at the regional economic level. At the microlevel the efficiency of the implementation of strategic programs and of plans of production of science consuming goods will be determined, basing on the increase of the national safety level, the growth of the competitive ability and of the investment appeal of the home made production at world sales markets.

The offered approach, based on the highlighting of three hierarchic levels for the evaluation of the efficiency of the implementation of strategic programs and of plans of production of science consuming items with the following adoption of managerial solutions at its basis, is determined by following considerations. At the microlevel the full absence of the implementation of innovations while implementing strategic programs and plans of production of science consuming goods can cause the sharp decrease of the competitive ability of the production, released by an enterprise, if it refers to such branch or production area, which is already functioning or can be transferred to the innovative model of development. In such a situation the enterprise will have to leave the market some time

or over. At the mesolevel the low level of the implementation of strategic programs and of plans of production of science consuming goods in the branch industry can cause the decrease of rates of the branch growth, as well as the decrease of the industrial production in the region. Its surmounting will require considerable investments in the development of the regional economics, which are often linked to the cardinal reconstruction of its infrastructure. At the macrolevel the decrease of innovative activities at the implementation of strategic programs and plans of production of science consuming items will cause the decrease of the national competitive ability and safety, especially provided modern external challenges. Anyway, in order not to allow negative consequences at the level of the whole national economics, we will require much more expenses than at the mesolevel and. Moreover, at the level of a certain industrial enterprise, having systemized scientific works of Russian scientists, we have offered the following system of indices for the evaluation of the implementation of strategic programs and of plans of production of science consuming items according to management levels (table).

Table. System of criterial indices of the evaluation of the efficiency of the implementation of import substitution strategies by management levels

Index	Settlement order
At the microlevel (enterprise)	
Dependence coefficient (actual measurement)	Relative share of names of imported completing parts in the total quantity of all names of completing parts, necessary for the production of the certain industrial production
Coefficient of production dependence from the import of completing parts (in monetary terms)	Proportion between the cost of imported completing parts and the total cost of all completing parts, determining the calculation value of a certain industrial production (items)
Actual import coverage ratio (actual measurement)	Ratio of the quantity of national and imported completing parts, used for the manufacturing of the industrial production (items)
Actual import coverage ratio (cost measurement)	Ratio of the cost of national and imported completing parts, used for the manufacturing of the industrial production (items)
Actual potential import coverage ratio (actual measurement)	Ratio of the quantity of national and imported completing parts, which can be replaced at the manufacturing of the industrial production (items)
Potential import coverage ratio (cost measurement)	Ratio of the cost of national and imported completing parts, which can be replaced at the manufacturing of the industrial production (items)

Import substitution ratio (actual measurement)	Ratio of the quantity of national and total amount of completing parts, used for the manufacturing of the industrial production (items)
Import substitution ratio (cost measurement)	Ratio of the quantity of national and total cost of completing parts, used for the manufacturing of the industrial production (items)
At macro- and meso- levels (branch, region, national economics)	
Import load ratio	Ratio of the volume of the import of this kind of the industrial production and GDP value
Import priority ratio	Proportion between ratios of the import variation of this kind of the industrial production and ratios of the export variation of this kind of the industrial production
Import substitution ratio	Ratio between the cost of national resources (labor, financial, material & technical etc) and the total cost of resources, used for the manufacturing of the industrial production (items)
Ratio of the price advantage of the external trade	Ratio of export and import prices for this kind of the industrial production (items)
Industrial production index (in monetary terms)	Ratio between the cost of the manufactured industrial production in 2020 and the cost of manufactured industrial production in 2015.
Industrial production index (natural measurement)	Ratio between the quantity of the manufactured industrial production in 2020 and the quantity of the manufactured industrial production in 2015.
Investment index	Ratio between the volume of investments in the fixed capital of enterprises and organizations of the branch (region) in 2020 and the volume of investments in the fixed capital of enterprises and organizations of the branch (region) in 2015.
Export volume in the external turnover	Ratio between of the export volume in the external turnover of the branch (region) in 2020 and the export volume in the external turnover of the branch (region) in 2015.
Volume of investments to enterprises of a branch (region), which have obtained state support measures for the mastering of import substituting kinds of production for 2015÷2020	Ratio between the volume of investments to enterprises of a branch (region), which have obtained state support measures for the mastering of the production of import substituting kinds of production for 2015÷2020 and the total volume of investments in the fixed capital of enterprises
Specialization index	Ratio between the volume of export of certain kinds of production (leaders) and the total volume of export of all kinds of production
Import dependence index	Ratio between the volume of import of certain kinds of production (leaders) and the total volume of import of all kinds of production

While approaching offered instruments for the making of substantiated managerial solutions, referred to the evaluation of the efficiency of the implementation of measures within frames of strategic programs and of plans of manufacturing of science consuming

production at all levels of management in regard to method, it can be affirmed that it is integral and optimal enough in the part of use of the restricted number of indices for each management level. With that each index, included in the offered system of indices can be

quite easily calculated on the basis of the existing statistic information.

So, it is expedient to evaluate the efficiency of the implementation of strategic programs and of plans of the production of science consuming items in the real sector of the Russian economics, basing on the structural & hierarchic perception of the process of the management of the implementation of included measures, oriented to the development of the innovative potential at all levels of management (micro-, meso- and macro-). Besides that, the offered approach allows to take into consideration the mutual dependence of evaluations of the efficiency of the implementation of strategic programs and of plans of manufacturing of the science consuming production be volumes of the home made production (in natural and monetary terms), competitive at external markets and able to substitute supplies of the imported equipment and completing parts at each of above mentioned levels.

Conclusion. Following opinions can be made on the basis of results of the performed research:

1. Certain industrial enterprises are provided with considerable amounts of financial resources for the implementation of developed strategic programs of the science consuming items by branches of Russian economics and

certain measures from the national budget, as well as by means of attraction of funds from other sources (extra-budgetary funds, venture financing, private investments). The need for the obtaining of reliable estimates concerning its spending allows the development of universal and simple instruments, able to provide the obtaining of such estimates of its efficient spending, that means, the implementation of mentioned programs and plans for the manufacturing of the science consuming production.

2. In order to estimate the efficiency of the implementation of both strategic programs and plans for the production of science consuming goods by branches of Russian economics was substantiated the methodic multi-level approach and was offered the system of indices for each level, allowing to obtain relevant estimates on the basis of the existing static information.

3. Offered instruments, comprised in the methodic approach, as well as systems of indices, do not pretend for the completeness and finish relatively to its use for the obtaining of estimates of the efficiency of the implementation of strategic programs and plans for the production of science consuming items by branches of Russian economics at considered management levels and assumes the need for following researches in this area.

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СИСТЕМА ПОКАЗАТЕЛЕЙ ДЛЯ ОЦЕНКИ РЕАЛИЗАЦИИ СТРАТЕГИЧЕСКИХ ПРОГРАММ И ПЛАНОВ ПРОИЗВОДСТВА НАУКОЕМКОЙ ПРОДУКЦИИ

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***Аннотация.** Реализация стратегических программ и планов производства наукоемкой продукции осуществляется промышленными предприятиями различных отраслей российской экономики. Большинство таких программ и планов утверждены на уровне соответствующих министерств и ведомств и согласованы с Правительством России. Естественно, что полученные в ходе их реализации результаты и выявленные проблемы с каждым годом привлекают все больше внимания со стороны органов управления предприятиями, руководства отраслевых министерств и ведомств, Правительства страны, а также социально активных граждан. Основные усилия по реализации стратегических программ и планов производства наукоемкой продукции направлены на формирование фундаментальных основ для развития индустриального потенциала российской экономики. Для активного вовлечения в решение этой задачи регионов в субъектах Российской Федерации была создана разветвленная промышленная инфраструктура. По сравнению с 2012 годом в 4 раза выросло количество региональных индустриальных парков (РИП). Сегодня на территории 110 таких РИП функционируют свыше 2,5 тыс. российских и иностранных производств. Еще более 3 тыс. компаний осуществляют выпуск высокотехнологичной продукции в 45 промышленных технопарках. Указанные и ряд других мероприятий способствовали оперативному решению задачи наращивания производства высокотехнологичной продукции. За последние 5-6 лет в этом направлении появился ряд положительных результатов. Однако их наличие не снимает остроты проблемы оценки эффективности расходования выделяемых средств и реализации отдельных мероприятий в рамках стратегических программ и планов. В данной статье будет предложена система показателей, которая может быть использована для решения исследуемой проблемы.*

***Ключевые слова:** наукоемкая продукция, производство, система показателей, оценка реализации, стратегические программы и планы.*