TARGET INDICATORS TO IMPROVE THE COMPETITIVENESS OF INDUSTRIES OF THE PROCESSING INDUSTRY IN THE RUSSIAN FEDERATION

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ABSTRACT

The elevation of competitiveness of the Russian manufacturing is of the key problems of the long-term national economic development. Further to this the "The Development and the Enhance of Competitiveness of the Industry" State Program of Russian Federation has been accepted and is executing. The paper analyses the changes of competitiveness indicators for various branches of manufacturing after the Program. It arguments their loose relationship with the competitiveness elevation objectives and provides an alternative approach of the authors to apprise the competitiveness of Russian manufacturing sectors and a classification of commodity groups of industrial goods basis their foreign market competitiveness.

KEYWORDS RUSSIAN ECONOMY, MANUFACTURING, COMPETITIVENESS, STATE PROGRAM, INDICATORS.

CRITICAL ANALYSIS OF TARGET INDICATORS OF THE STATE PROGRAM

В современном мире конкурентоспособностIn the modern world, the competitiveness of the national economy in the global market is a key factor in the sustainability of the country's socio-economic development, ensuring the high quality of life of the population, its defense capability and geopolitical positioning of the state. The concept of " competitiveness " has received many different interpretations. Thus, according to M. Porter, the company's competitiveness is "an opportunity to compete in the global market with a global strategy ", lawmakers associate it with a positive foreign trade balance, and some economists have low production costs per unit of output that are adjusted to the exchange rate [Porter M ., 2016]. In the economic literature and political discourse competitiveness means as presence of product advantages in the market, based on an assessment ratio " price - quality ". [2]

Currently, for the executive branch, the basic working document coordinating the efforts of the state to increase the competitiveness of domestic industrial production is the state program of the Russian Federation " Development of industry and increasing of its competitiveness ". This document presents a special thematic block " Target Indicators and Program Indicators " to assess the effectiveness of the activities declared in the program and quantify their expected results. In the program " Development of the industry and increase of its competitiveness " there is no clear definition of the concept " competitiveness ". In this capacity, we can consider the formulation of the goal : "... the creation in the Russian Federation of a competitive, sustainable, structurally balanced industry <...> capable of effective self-development based on integration into the global technological environment, the development and application of advanced industrial technologies aimed at the formation and development of new markets for innovative products that effectively solve the task of providing economic development of the country "[Resolution, 2014]. The authors of this

document are aware of the relationship of the competitiveness of national industrial products with its positioning in the market. Nevertheless, such an important property of competitiveness as the presence of market advantages is missed. Apparently, this is precisely why the program contains target indicators that allow only indirectly assess the success of the domestic industrial sector in increasing the competitiveness of its products.

Among the basic target indicators and indicators in the program there are:
- production index by type of economic activity "Manufacturing Production" in relation to the previous year;
- labor productivity index by type of economic activity "Manufacturing Production" in relation to the previous year;
- index of the physical volume of investments in fixed capital by type of economic activity "Manufacturing Production" in relation to the previous year;
- increase in high-performance jobs by type of economic

activity "Manufacturing Production" in relation to the previous year;
- energy intensity of manufacturing industries to the base year 2011;
- internal expenses for research and development within the framework of the program at the expense of budget funds;
- internal expenses for research and development within the framework of the program at the expense of extrabudgetary sources.

Target indicators of industry subprograms for the most part reproduce the logic of the above list, partly duplicating it, partly expanding it. These indicators, of course, have some value for assessing the dynamics of competitiveness of both individual sectors and the national economy as a whole. You can reduce the energy intensity of production, increase costs in research and development, increase labor productivity and even increase output, but at the same time lose competitiveness, losing market share or " becoming isolated " on the national economy through the establishment of high protectionist barriers. In other words,

the program includes indirect indicators of national (sectoral) competitiveness. For the formation of targets that are adequate to the needs of the long-term of socio-economic development of Russia in the modern world, we need direct indicators directly reflecting the demand for manufactured industrial products on the global market.

The European approach to the assessment of competitiveness as an aspect of industrial policy can be described as "pro-market". Thus, in the EU industrial development concept paper "Industrial policy as a way to sustainable economic growth", one of the most important economic problems of the European macro-region is "the loss of market share by industrialized countries in favor of manufacturers from developing countries who " invade" an increasing number of sectors, not limited to traditional expansion in labor-intensive industries". According to the authors of this document, the high level of innovation spending in the United States and, as a result, a high level of productivity do not lead to solving the problem of unprecedented trade deficit. The European Union as a whole has a balanced foreign trade, but there is no significant increase in labor productivity. Against this background, emerging markets are showing significant success, " increasing the market share in both these regions". In such conditions, " it is necessary to follow the markets, " stimulating " types of economic activity and the business sector in the broad sense of the word, " rather than " growing champions, " as was done in the postwar decades [Aiginger K., 2014] .

An objective quantitative assessment of national competitiveness claim annual "Global Competitiveness Report " published by the World Economic Forum [5]. At first glance, it may seem that the concept of competitiveness is blurring here, since the task has been set to cover 12 factors: institutions, infrastructure, macroeconomic environment, healthcare and primary education, higher education and vocational training, efficiency of commodity markets, labor market efficiency, financial market development, level of technologies used, market size, entrepreneurial experience and innovation. Ultimately, however, the contribution of each of these factors is determined by the share of commodities (or the share of final products) in national exports. Thus, in the current international practice in solving the problem of improving the competitiveness of the industrial sector, the main targets are the final (market, commercial) results, rather than intermediate (scientific, technical, production).

In the state program of the Russian Federation " Development of industry and increase of its competitiveness " we can find indicators focused on the " commercial development " of the market, including the global one. However, they are represented haphazardly. Thus, among the target indicators and indicators of the program as a whole and subprogramme 1 in particular, they do not exist, and in subprogramme 2 they predominate:

the volume of shipped goods of own production, the volume of exports of means of production the number of produced and sold import-substituting means of production, the volume of shipped import-substituting means of production.

In addition, to solve the problem posed, not absolute, but relative indicators are more important. In the program, they are presented sporadically and vary from subprogram to subprogram. For example, in subprogramme 3, it is possible to detect the share of Russian products on the market. For subprogramme 4, the share of imports in the structure of consumption of products of the chemical complex of deep processing in the total amount of products of the chemical complex and the share of exports in the output structure of the chemical complex of deep processing in the total amount of domestic production are typical .

In other words, the target indicators and indicators formulated in the program can directly or indirectly indicate technological, economic, institutional, infrastructural and budgetary changes related to the functioning of individual industries. However, it is necessary to recognize that they do not provide an adequate systematic assessment of the competitiveness of the domestic industry, as the name of the state program itself "requires".

SUGGESTED TARGET INDICATORS FOR IMPROVING THE COMPETITIVENESS OF MANUFACTURING INDUSTRIES

Claiming the need to assess competitiveness exclusively from pro-market positions, we introduce the following basic indicators of the competitiveness of domestic products in the domestic and foreign markets.

Share of the cost of domestic products of a particular product group in the total value of these products sold on the domestic market. Indicator characterizes the level of competitiveness of domestic products in the domestic market and is defined as:

$$Q_{внутр.i} = (P_i - E_i)/(P_i - E_i + I_i),$$

where $Q_{dom.i}$ – is the share of the cost of domestic products of the i product group in the total cost of products sold on the domestic market; P_i – is the domestic production of i commodity group; E_i – is export of domestic products of i product group; I_i – is import of products of i product group. By grouping indicator values by product groups produced by the relevant manufacturing industry, one can get an aggregated characteristic of the competitiveness of the industry and the manufacturing industry as a whole.

Indicator may be a quantitative characteristic of the level of competitiveness of products of the sector (industry) of the manufacturing industry in the domestic market (Table 1) . Values

Table 1
The level of competitiveness of industrial products in the domestic market for some product groups (2011–2015), according to [Current materials, [b.g.] ; Russian, 2017]

Products	2011	2012	2013	2014	2015
Products of textile, clothing, leather and footwear industry	29	27	28	28	27
Chemical products	51	51	50	49	48
Metallurgical products	80	79	79	80	83
Machinery, equipment and vehicles	49	49	51	50	50

range from 0 (absolute dependence on imports) to 100% (absolute independence from imports).

So, for 2015 we can state:
- serious problems with competitiveness in the textile, clothing, leather and footwear industry (27%);
- the need for control by the regulator in the production of chemical products (48%), machinery, equipment and vehicles (50%);
- relatively high competitive position of the metallurgical industry in the domestic market (83%).

The level of competitiveness of products in the domestic market is undoubtedly an important target benchmark of the state industrial policy. At the same time, in the context of sustainable (in essence, long-term) economic development, the presence or absence of competitive advantages of products in the external (global) market is much more important.

The share of the value of export products of a specific commodity group of the manufacturing industry in the total value of these manufactured products. Indicator characterizes the level of competitiveness of domestic production in the domestic market and is defined as:

$$Q_{dom.i} = E_i/P_i,$$

where $Q_{dom.i}$ – is the share of the value of export products of a specific commodity group of the manufacturing industry in the total value of these manufactured products.

This indicator quantitatively characterizes the level of competitiveness of export products of the sector (industry) of the manufacturing industry in the foreign market (Table 2). Indicator can take values from 0 (absolute dependence on imports) to 100% (absolute independence from imports).

Index of foreign trade turnover of domestic products in the foreign market. Calculated as follows:

$$C_{for.i} = (E_i - I_i)/(E_i + I_i),$$

where $C_{for.i}$ – is the index of foreign trade turnover of domestic products of the i product group in the foreign market. Index characterizes the position of domestic products in the global market and is calculated as the ratio of the difference in the values of exports and imports to the volume of trade, characterized by their sum. For clarity, this ratio is expressed as a percentage. This indicator is indicative, since its value can vary in the range from −100% (absolute noncompetitiveness) to 100% (absolute competitiveness) (Table 3) .

As of 2016, commodity sectors and sectors with a low degree of industrial processing remain stably competitive:
- fuel and energy products (98%);
- mineral products (96%);
- precious stones and metals, as well as articles thereof (91%);
- wood and pulp and paper products (49%);
- metals and articles thereof (+43%).

Key manufacturing industries, by contrast, proved to be uncompetitive. For example, in textile and footwear production, we can state a situation close to absolute noncompetitiveness (−85%). The situation is slightly better in the production of leather raw materials, furs and products thereof (−51%), comparatively better in the chemical industry (−24%). "Confidently" noncompetitive in the foreign market is the production of machinery, equipment and vehicles (−56%), the classic core of the manufacturing industry. Connection between the low competitiveness of industries in the foreign market (see

Table 2
Share of export products of manufacturing industries in the total volume of their production,%, according to [Current materials, [b.g.] ; Russian, 2017]

Industry	2014	2015
High-tech industry		
Pharmaceutical production	8	8
Manufacture of office equipment and computing equipment	7	3
Manufacture of electronic components, equipment for radio, television and communications	4	5
Manufacture of medical products; measuring instruments, control, management and testing; optical devices, photo and film equipment, watches	7	6
Production of aircraft, including space	26	33
Total	14	17
Medium tech industry *High level*		
Chemical production	40	42
Manufacture of machinery and equipment	5	6
Manufacture of electrical machinery and electrical equipment	4	4
Manufacture of cars, trailers and semi-trailers	4	5
Manufacture of other vehicles	5	4
Total	16	19
Low level		
Production of coke and petroleum products	50	44
Manufacture of rubber and plastic products	4	4
Manufacture of other non-metallic mineral products	4	4
Metallurgical production	35	35
Manufacture of finished metal products	4	6
Construction and repair of ships	16	12
Total	36	34
Low-tech industry		
Food production, including drinks	3	5
Textile production	18	5
Manufacture of clothing, dressing and dyeing of fur	2	3
Manufacture of leather, leather goods and footwear	10	16
Wood processing and manufacture of wood and cork products, except furniture	40	40
Total	9	9

Tables 2 and 3) and the similar situation in the domestic market (see Table 1) looks quite natural .

We consider it appropriate to supplement the program block " Target indicators and indicators of the program " with the competitiveness indicators, which are used in their reports by the authoritative international United Nations Industrial Development Organization (UNIDO):
- share of value added created in the high-tech manufacturing sectors in the total value added created in the manufacturing industry as a whole;
- share of value of products of high-tech sectors in the total value of exports.

Thus, the application of our proposed target indicators of competitiveness in the industrial sector will contribute to a more adequate assessment of its competitiveness, which, in turn, is crucial for the implementation of an effective industrial policy.

Table 3
Index of foreign trade turnover of domestic products in the foreign market by main product groups (2011-2016),% , according to [Current materials, [b.g.]]

Customs Union Commodity Classification of Foreign Economic Activity Code	Product group	2011	2012	2013	2014	2015	2016
01–24	Food products and agricultural raw materials (except textiles)	−52	−42	−45	−36	−24	−19
25–26	Mineral products	95	96	96	96	96	96
27	Fuel and energy products	97	98	98	98	97	98
28–40	Chemical products, rubber	−17	−20	−24	−23	−14	−24
41–43	Leather raw materials, furs and products thereof	−60	−52	−43	−51	−45	−51
44–49	Wood and pulp and paper products	25	24	25	33	46	49
50–67	Textiles, textile products and shoes	−89	−92	−90	−87	−85	−85
71	Precious stones, precious metals and articles thereof	89	90	88	82	86	91
72–83	Metals and articles thereof	36	33	30	35	47	43
84–90	Machinery, equipment and vehicles	−70	−71	−68	−68	−53	−56
68–70, 91–97	Other goods	−32	−40	−34	−29	−17	−12
	Total	26	25	25	27	31	22

CLASSIFIER OF BRANCHES OF INDUSTRIAL PRODUCTION IN THE RUSSIAN FEDERATION BY THE LEVEL OF COMPETITIVENESS OF PRODUCTS IN THE FOREIGN MARKET

Indicator "index of foreign trade turnover of domestic products on the foreign market" can be used as a criterion for the classification of industrial production sectors of the domestic economy according to their competitiveness. Depending on its value, we rank all branches of industrial production:

• uncompetitive industry: [–100%; –67%);
• mostly non-competitive industry: [–67%; –33%);
• moderately uncompetitive industry: [–33%; 0);
• moderately competitive industry: [0; 33%);
• mostly competitive industry: [33%; 67%);
• competitive industry: [67%; 100%].

We selected 83 out of 97 commodity items according to the code of the Commodity Nomenclature for Foreign Economic Activity of the Eurasian Economic Union related to export-import flows of industrial goods. Approximately 23% of them (19 positions) can be attributed to the production of high-tech or medium-tech products of high level.

Table 4 shows the distribution of commodity groups of industrial products to the level of their competitiveness in the foreign market.

Results of the ranking of commodity groups gives a kind of industry "cut" of competitiveness of domestic industrial production. So, only 15 out of 83 industries (18%) demonstrate more or less confident competitiveness ("mostly competitive" and "competitive") in the international economic arena. By themselves, these figures would not yet be the basis for pessimistic conclusions, but only 1 of these 15 industries is high-tech, and that is also related to the production of military products (weapons and ammunition), not civilian. In other words, an analysis of the competitiveness of products manufactured by the high-tech manufacturing sector shows a low competitiveness of the sector.

Thus, the classification we have developed allows us to quickly assess the level of competitiveness of both the entire industrial complex of the Russian economy and individual industries in the foreign market. In this regard, we hope that this classification will be used as a tool in the development of public policies aimed at improving the competitiveness of domestic industrial production.

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Table 4
Classification of domestic industrial product groups by the level of competitiveness in the external market , according to [Current materials, [b.g.]]

Уровень	Number of industrial product groups		Number of product groups of high-tech products and high-tech medium-level products	
	Abs. number, units	Rel. number, %	Abs. number, units	Rel. number, %
Uncompetitive	32	39	10	53
Predominantly uncompetitive	16	19	3	16
Moderately uncompetitive	11	13	2	11
Moderately competitive	9	11	3	16
Predominantly competitive	5	6	0	0
Competitive	10	12	1	5
Total	83	100	19	100