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Research Article

**INDUSTRIAL PRODUCTION AS A FACTOR OF
SUSTAINABLE DEVELOPMENT OF THE TERRITORY****Olga Berezhnaya¹, Tatiana Ivchik², Aleksander Zbritskiy², Elena Berezhnaya¹,
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Article Received: February 2019**Accepted:** March 2019**Published:** April 2019**Abstract:**

Industrial production is a driver and a major factor in the stability and well-being of modern society. Sustainable development of industries is due to a set of conditions, causes and factors, among which increasing the volume of investments in fixed production capital, using efficient innovative technologies, automating and informatization of business processes, positive transformations in the social and labor sphere, increasing the level of employment in region. The article substantiates a scientific approach that allows to identify the main indicators that positively affect the sustainable development of industrial production; The interrelation of various socio-economic factors with the level of development and efficiency of industry in the regions has been established and evaluated. As a result of the research, the main provisions for the further development of industries have been formulated.

Keywords: *industry, industries, industrial management, regions, municipal areas, employment, sustainable development of the region.*

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INTRODUCTION:

The increase in the volume and expansion of the range of industrial products is an objective condition for further innovative growth of the municipal territory and the most important factor in the socio-economic development of the region. The urgency of this problem is due to the legitimate need for intensive growth of regional socio-economic systems, positive transformations of innovative regional policies, and a further increase in industrial output.

This predetermines the emphasis of scientific attention on the territorial aspect of the solution of the problem. Moreover, at present, the principles and features of the regional formation of industrial product commodity markets have not been sufficiently studied. All noted causes the need to improve the methodological approach to the socio-economic differentiation of regions and municipal areas in terms of the formation and development of the industrial complex.

MATERIAL AND METHODS:

It is generally accepted that industries and industrial enterprises, as a rule, are investigated as part of the fuel and energy, engineering, metallurgical, chemical and forest complexes. In relation to these complexes, the development of various business processes and business planning systems in the industry can be evaluated in relation to the power industry, oil and gas, coal, metallurgical, engineering, processing and other industries.

Currently, the share of industrial enterprises and organizations in the total number in all regions and Federal districts of the Russian Federation accounts for about 9%. At the same time, according to the data for 01.01.2017, the share of industrial production in the gross regional product is 15.1%; the share of employed in industries is 19.2% (mainly workers of processing enterprises); the volume of fixed assets of industrial production industries occupies a third of the total cost of the entire economic complex of the country.

An important indicator that can characterize the efficiency of industrial production in General or in the context of its branches, can serve as the volume of shipped goods of own production, performed works and services on their own by activity per 1 employed (or calculated the same specified volume per unit of fixed assets of the industry, or per unit cost).

In addition, the index of industrial production (as a percentage of the previous year) as an average value for a number of years (usually 3 years) can be used as the main indicator characterizing the development of industries in the regions.

In accordance with the adopted statistical methodology, this indicator accumulates the average value of the growth rate of industrial production in the context of its following main sectors:

- mining (coal, crude oil and natural gas, metal ores and other minerals);
- processing and processing industries (production of food products, textiles and chemical products, wood processing, production and repair of machinery, equipment, etc.);
- production, transmission and distribution of electricity;
- water supply of the population, as well as the organization of collection and disposal of products.

To adequately assess the level of industrial development of the region should use the scientific apparatus of clustering regions according to the relevant criteria. At the same time, it is necessary to operate with such indicators as coefficients: asymmetries, polarization, differentiation of territories and other statistical values derived from them.

RESULTS AND DISCUSSION:

The economic and statistical analysis conducted by us on the results of the socio-economic development of the regions of the Russian Federation on average for 2015-2017 allowed us to identify the following patterns:

1. According to the level of development of the industrial products market, the federal districts of the Russian Federation (and they, as a rule, are industrial macroregions in their status) can be divided into two spatial groups differing in the value of the industrial production index.

2. The first territorial group includes industrial and processing enterprises of the Siberian, Far Eastern, Southern, Volga and North Caucasus federal districts, in which the indicated indicator averaged over a specified period to 101.7%. The second group is formed by industrial organizations of other districts (Central, North-West and Ural) with the same indicator - 103.3%. Accordingly, in the studied groups of regions, the average integral index of economic development was determined respectively at the level of 1.13 and 1.28.

3. At the same time, from the first group of regions to the second increases the value of the index for the introduction of fixed assets (from 114.3 to 122.7%),

the average monthly cash income of an employee increases (from 25.8 to 29.1 thousand rubles), the gross regional product per capita (from 382.4 to 461.5 thousand rubles) and the level of employment of the population increases (from 63.9 to 65.2%). In other words, there is a direct relationship between the economic development of the territory and the industrial products market.

Currently, the scale of industrial development is dominated by organizations of Moscow and the Moscow region (the industrial production index left 109.2% over the same period as against the previous year), the Yaroslavl region - 110.3, the Arkhangelsk region - 114.7, and the Rostov region 106.2, of the Republic of Dagestan - 113.1, of the Karachay-Cherkess Republic - 111.7, of the Republic of Mordovia - 108.4, of the Primorye Territory - 113.8, of the Khabarovsk Territory - 112.7%.

On the other hand, in some regions there is an insufficient level of industrial development. These are the Oryol Region - 99.8%, the Orenburg Region - 101.3%, the Tomsk Region - 99.5%, the Sakhalin Region - 100.1%, the Republic of Kalmykia - 99.6%, the Republic of Tatarstan - 100.1%.

Research has confirmed the direct relationship between the industrial production index in a particular region (Y indicator) and the main indicators of its socio-economic development:

- X_1 - index of investment in fixed assets,%;
- X_2 - index of input of fixed assets,%;
- X_3 - average per capita cash income per month, thousand rubles;
- X_4 - the level of employment in the region,%;
- X_5 - integral indicator of the social development of the territory, coefficient;
- X_6 is an integral indicator of the development of retail turnover in the region, a coefficient;
- X_7 is an integral indicator of the development of processing industries.

Based on the SPSS statistical information processing program, the following was established:

First, in the constituent entities of the Russian Federation, there is a rather high degree of correlation between the indicated factors and the studied productive feature. This indicates the direct influence of the level of development of the industrial products market on the socio-economic development of the territory (total determination coefficient $D = 78.3\%$).

Secondly, the correlation relationship between these factors varies on average from 0.338 to 0.755. Economic indicators such as regional employment and average per capita money income of the

population ($R = 0.685$), gross regional product per capita and retail turnover (0.704) are most correlated among themselves. The latter factor, in addition, is not only the cause, but also a consequence of the development of industrial production in the region.

Thirdly, the main indicators of the scale of industrial development in the constituent entities of the Russian Federation are: input index of fixed assets ($R = 0.412$), average per capita cash income per month (0.523), employment in the region (0.644).

Among the federal districts of Russia, the Southern Federal and North Caucasus Federal Districts occupy a special place. As of January 1, 2017, 14.3% of municipalities and 15.4% of the population were concentrated here, about 8% of the country's GRP was produced.

As the analysis has shown, at present, among the specified subjects of the South of Russia, there is a differentiation in the level of development of industrial production in the regions. Differences occur in the efficiency of business activities in industrial enterprises. This, in particular, is evidenced by the polarity index of the territories as the ratio of the maximum and minimum values for the studied parameters. It varies from 2.4 to 4.5, which indicates a clear spatial differentiation in the level of development of industries.

The corresponding economic and statistical analysis, carried out at the level of the subjects of the South of Russia, confirmed a similar relationship between the integral indicator of the efficiency of industrial production and the socio-economic development of the territories. So, for the Republics, territories and regions of this macro-region, the correlation coefficient was 0.657, and for the regions of the North Caucasus Federal District (as less developed economically) - only 0.486. This indicates that with the increase in the efficiency of functioning of the regional complex, its influence also increases on the development of the industrial products market.

Within the regions of the Southern Federal District and the North Caucasus Federal District, the closest correlation between the integral index of industrial production development is observed between this index and:

- the level of employment of the working-age population ($R = 0.693$);
- gross regional product per capita (0.587);
- index of investment in fixed assets (0.519).

In turn, the socio-economic development of territories is determined in macroregions not only by

the development of the industrial goods market, but also by indicators such as: the share of employed in small enterprises and organizations in the total number of workers ($R = 0.424$), the development index of the manufacturing industries (0.522).

The level of development of industrial production has a positive impact, first of all, on the quantitative growth of the most profitable organizations in the regions and the volume of gross regional product per capita (the correlation coefficient is +0.527 and +0.634, respectively); characteristic is the reverse process of the mutual influence of these factors.

Thus, due to the development of the industrial products market, both in the Russian Federation as a whole, and in its individual regions and federal districts, the social and economic well-being of the territories increases. Therefore, the activities of the socio-economic development of the subjects should be formed and implemented taking into account their spatial and territorial differences.

CONCLUSION:

The transition of modern society to innovative technologies provides for the growth and further development of branches of industrial production, which is the driver of technical and technological modernization of fixed capital, a fundamental factor in the competitiveness and sustainability of business structures.

The level of formation and development of industrial production affects, first of all, the quantitative growth of profitable organizations in the regions and the volume of gross regional product per capita; characteristic is the reverse process of mutual influence of factors. The correlation interrelation of the industrial production index in a single region and the integral indicator of the socio-economic development of the territory is established.

Thanks to the development of the industrial complex, both as a whole throughout the Russian Federation, and in its individual regions as a whole, the economic well-being of municipal territories is increasing. The reverse process is also logical: the higher the level of socio-economic development of the region, the more attention is paid in this territory to the introduction of innovative technologies in organizations and enterprises of industrial sectors. An important means of increasing the economic efficiency of industrial production in the regions is an increase in the volume of investments in fixed capital and technical re-equipment of production equipment, an increase in the level of employment in the region, a priority for the development of processing industries and further

automation of production processes.

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