

ОТРАСЛЕВЫЕ И МЕЖОТРАСЛЕВЫЕ КОМПЛЕКСЫ

UDC 332.133.42 + 321.21

V. S. Antonyuk, E. R. Vansovich

ASSESSMENT OF REGIONAL INDUSTRY-SPECIFIC SHIFTS

This paper reveals the contents of the category of «regional industry-specific shift» by which, unlike existing treatments, a qualitative change in the sectoral structure of the region, leading to increase or decrease of its production specialization is meant. A methodical approach is proposed for the delineation of the categories of «regional industry shift» and «regional industrial change», based on the use of criterion interval averages of industry changes. This indicator reflects the transition «to regional industry changes» in the «regional industry shift». A method for evaluation of regional industrial structure and typology of Russian regions, depending on changes in industrial specialization, was elaborated. The paper presents the criteria of monospecialization and polyspecialization of the region, using which the subjects of the Russian Federation are distributed to monospecialized and polyspecialized. A comparison of monospecialized and polyspecialized regions validated the dependence of economic development entities of the Russian Federation on the territory of the diversified industrial structure. An innovation is the author's proposal for the development of measures of structural policy in the monospecialized regions of Russia, differentiated according to the identified trends in the manufacturing field in the region.

Keywords: industry-specific shift, manufacturing specialization of the region, structural policy

The crisis manifestations in the economy of Russia and its regions are largely determined by the deformation of the industrial structure. Currently, the Russian economy is inherent a significant differentiation of industrial specialization, high intensity of industrial shifts of the territories, the existing discrepancy between the sectoral structure of production and the needs of innovative development, the dominant development of the extractive industries at the expense of manufacturing. All this attests to the need to take into account the regional shifts in the industrial practice of formation of the targeted priorities and structural policy of the subjects of the Russian Federation.

The start of theoretical studies on industry-specific economic structure was made in the works of F. Quesnay and L. Walras who considered the role of individual sectors in the economic system and the main factors determining the sectoral structure of production [9, 12]. Proceedings of John Bates Clark on economic dynamics laid the foundation of the theory of structural changes. A great contribution to the development of cross-sectoral issues of structural changes with the use of math-

ematical methods was made by such economists as L. V. Kantorovich, V. S. Nemchinov, V. V. Leontiev and others [5, 11]. Among modern researchers and economists, involved in the modeling of industry shifts and analysis of industry changes, A. R. Belousov, A. V. Buzgalin, H. H. Gizatullin, A. G. Granberg, L. A. Dedov, K. L. Inozemtsev, L. S. Kazinets, O. Ju. Krasilnikov, A. A. Romanova, A. I. Tatarin, Ju. V. Yaremenko and others should be noted [1, 4, 6, 7, 8, 10, 11, 13, 15, 16 and 18]. Questions of structural policy were covered in the works of V. Bezrukov, G. O. Gref, V. I. Kushlin, P. G. Nikitenko, A. K. Rassadin, A. V. Suvorov, S. N. Trunina, E. G. Yassin and others [17, 19].

However, the problems of industry-specific shifts and structural policies are not fully developed in the economics literature. Thus, it is necessary to identify the concepts of «regional industry-specific change» and «regional structural shift» as well as to study their characteristics in regions with varying degrees of industrial specialization.

Under the influence of territorial and sectoral division of labor, a branch structure of the regional economy is formed, which is a set of proportions

between sectors — the participants of economic activities in the region [3].

In our point of view, regional industry-specific shift takes place when there is such an industry-specific change of aspect ratios, which leads to strengthening or weakening of the industrial specialization of the region.

The objects of the regional industry-specific shift are sectors of industrial specialization in the region, as well as complementing industries, i.e. support complex which is service industries of specialization, satisfying only the internal needs of the territory in a certain amount of economic benefits.

Of the various types of regional industry shifts, we should highlight the following changes: 1) the nature of the industry (in the sectors of industrial specialization and complementary industries); 2) depending on the specialization of the region (in monospecialized and polyspecialized regions); 3) on the reach of the industry (in fact sectoral and cross-sectoral).

The industry-specific shift itself is a shift taking place within the particular industry in the industrial structure of the region, not taking into account changes in other industries. Inter-sectoral shift is a shift taking place across the industry structure. A calculation of properly industry-specific and inter-industrial shifts using the flow method is represented in Table 1.

The factors influencing the regional industry shift are those that affect the change of the industrial specialization:

Group I — objective factors:

1) the level of technology development in the sector of industrial specialization;

2) economic factors: a) the stage of the life cycle of the production specialization industry; b) access to productive sectors of specialization to economic resources: labor (availability of appropriate skills); investments (the presence of firms producing the necessary equipment and raw materials); natural (land availability, forest, water and other natural resources, including minerals, as well as the development of new territories and the development of new mineral deposits); information (availability of appropriate market infrastructure: information, consultation and innovation centers); c) the investment attractiveness of the production specialization industry;

3) social factors: a) the level of demand for output in the sector of industrial specialization; b) the level of qualification and their professional mobility; c) the migration processes that contribute to the inflow of labor in the sector of industrial specialization;

4) the level of regulatory institutions of structural policies: a) the institutions of the federal and regional level; b) the structure of civil society (business, industrial, engineering and scientific associations and unions);

5) other (maturation of a new branch within the existing production specialization industry, the union of several branches into a single profiling branch, regional sectoral shifts in the supplement-

Table 1

Characteristics and indicators of calculation of properly industry-specific and inter-industrial shifts

Types of regional industry-specific shifts on the reach of the industries	Content	Indicator	Formula
Properly industry-specific	The shift that occurs within the particular industry in the industrial structure of the region, not taking into account changes in other industries. It shows the relative increase in the share of the industry in relation to the base period	The growth rate of the share of the industry	$K'_{y_i} = \frac{y_{i2} - y_{i1}}{y_{i1}} 100$
Inter-industrial	The shift that takes place throughout the industry structure. It shows how coefficients (tempos) of industry growth densities deviate in the average from their mean values equal to one (100%), that is, what is the average relative deviation of specific gravities. It characterizes the intensity of changes of the sectoral structure in the region and provides a relative measure of the variation rate of the industry growth	Quadratic coefficient of relative structural shifts	$\sigma_{\frac{y_2}{y_1}} = \sqrt{\sum_{i=1}^n \frac{(y_{i2} - y_{i1})^2}{y_{i1}}} 100$ *

* where y_{i1} and y_{i2} are percentages of the i -industry in the first and second periods of time.

ing industries the emergence of new industries as a result of STP).

Group II — subjective factors, including:

1) the structural policy of the state, carried out in the fields of industrial specialization of regions;

2) industry-specific and special types of policies: industrial, agricultural, infrastructural, services, investments, innovational etc.;

3) the level of financial development of the country and the region (banking system, taxation and intergovernmental transfers etc.).

Often in the economic literature the concepts of «regional industry shift» and «regional industry-specific change» are identified as the same. Indeed, the shifts and changes are a common cause of formation — regional changes in the social division of labor. However, methodologically appropriate is to distinguish between these categories. In our view, the concept of «industry changing» is a broader concept of «sectoral shifts»; they are understood, as a rule, as any changes in the state of the industry production structure by introducing new features into the ratio of industries in the region and the position of a particular industry [10].

In addition, the main criterion in distinguishing changes in an industry-specific and sectoral shift is that the sectoral shift reflects not only quantitative but also qualitative changes in the sectoral structure of production, namely the strengthening or weakening of industrial specialization in the region.

In order to distinguish the categories of «regional industry shift» and «regional industry-specific change», a methodical approach is suggested, based on the use of criterial interval of average indicators of industry-specific change.

In the first stage, distribution of the regions into sub-groups by type of their industrial specialization was held. To do that, the coefficient of specialization of production was calculated (K_c)¹ [3]:

$$K_c = \frac{O_p / \Pi_p \times 100}{O_c / \Pi_c \times 100}, \quad (1)$$

where O_p is volume of production of this industry in the region, in gross terms; O_c — volume of production of the same industry in the country as a whole, in gross terms; Π_p — the entire volume of

production in this region in gross terms; Π_c — the entire volume of production in the whole country, in gross terms.

If $K_c \geq 1$, then this branch is the branch of regional industrial specialization. As a result, the regions with production specialization in a particular form of activity (agriculture, hunting and forestry, fishing, farming, mining, manufacturing etc.) were identified.

In the second phase, a criterion is proposed which reflects the transition of the regional industry-specific changes into the regional industry-specific shift. To this end, in each branch of industrial specialization, an average interval of industry-specific changes was calculated, beyond which the regional sectoral shifts (criterial interval) begin. The choice of the average value is due to the fact that the average value reflects the common and typical, which is typical for the industry-specific changes in the various regions, selected on the basis of a specific characteristic.

Criterial interval is calculated for: a) the actual industry-specific change as a range of values of growth rates tempos, weighted based on the nature of industry-specific changes (negative or positive); b) inter-sectoral change as the interval from zero to the average value of the quadratic coefficient of the relative change².

To enhance the objectivity of determining the rate of change in industrial structure and the neutralization of possible deviations brought by sectors of industrial specialization, the latter are excluded from industries in the assessment of changes in inter-industry change.

In our view, industry changes, which values deviate from the criterial interval, are being transformed into a qualitatively new state — the industry shift, in which the change of industrial specialization of the region is observed: the importance of industry-specific changes of more criterial interval means increasing of the industrial specialization, lower — its weakening (Fig. 1).

Intersectoral change, the value of which exceeds the criterial interval, is also an indicator of the sectoral shift in the entire industrial structure of the region, because there are significant fluctuations in densities of all branches, and a change in industrial specialization of the region by strengthening or weakening of complementary industries. Within the

¹ It is similar to the index (ratio) of economic specialization in a certain region of the given industry (as by V. V. Kistanov): $K_c = \frac{y_o}{y_p}$, where y_o — share of the region in the country on production of goods of the industry; y_p — share of the region in the country for all products.

² It is calculated based on the formula of the quadratic coefficient of relative structural changes (Table 1).

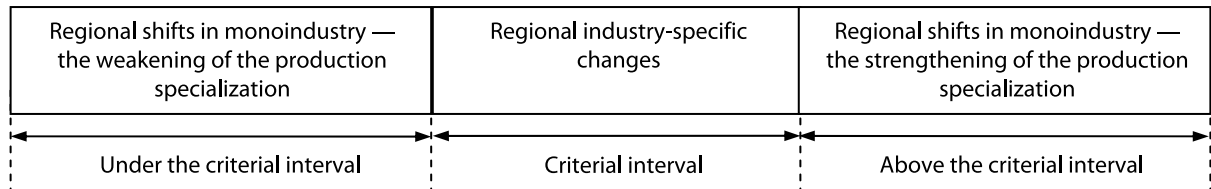


Fig. 1. Criterial interval of regional industrial changes and regional sectoral shifts

criterial interval, production specialization in the region remains.

Introduction of the concepts of criterial range and deviations from it allows us to derive values for the properly industry-specific and cross-industry-specific shifts in different types of specialized regions (monospecialized and polyspecialized), which, in turn, makes it possible to carry out a typology of regions based on the combination of the values of the properly industry-specific and cross-industry shifts, and hence on the dynamics of industrial structure. From a practical point of view, this methodological approach allows us to develop options for structural policies for monospecialized regions in different types of industry-specific shifts (Fig. 2).

Properly industry-specific shifts whose values are above or below the criterial interval, lead to different consequences. So, for monospecialized regions, where proper industry-specific shifts are below the criterial interval, are characterized by: a decline in production, technological backwardness in the field of industrial specialization, aging of the industry (the final stage of the life cycle), restructuring of production, by virtue of which happens a long period of recovery and adaptation of the regional economy to the new position of industries.

However, this value of the properly industry-specific shift suggests that, perhaps, diversification of production begins to increase.

Properly the industry shift interval above criterial also has negative consequences: increasing of industrial specialization, which leads to the growth dependence of the region on fluctuations in economic conditions of production markets, the industry specialization, the decline in production in the supplement industry. However, there are positive aspects that appear in the technical and technological progress in the field of industrial specialization.

The set of properly industry-specific shifts leads to a result that reflects inter-industry shifts. In frames of the criterial interval in monospecialized regions, they indicate that there is a static industry structure, low intensity of changes of specific weights of industries — the position of industries changes within the average performance. In the long term development, options on development of weak complementary industries as new branches of specialization in the region are considered. However, inter-industry shifts above criterial interval mean a high intensity interval of changes in industry structure with the exception of changes in industry of production spe-

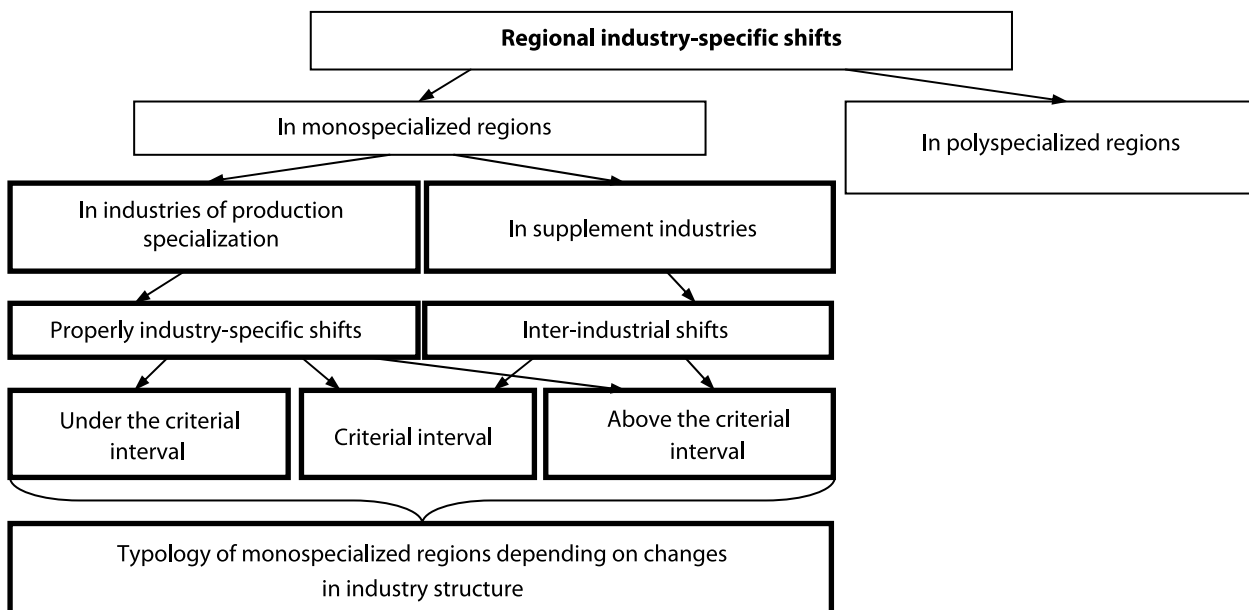


Fig. 2. Algorithm for analysis of regional industry-specific shifts in the monospecialized regions

Table 2

Trends in the industrial structure change based on a combination of properly sectoral and intersectoral shifts in the monospecialized regions

Type of industry shifts		Inter-industrial shift	
		Criterion interval	Shift above the criterion interval
Properly industry-specific shift	Shift under the criterion interval	I The weakening of industrial specialization, accompanied by minor changes in densities of complementary industries	II A significant reduction in the share of industry with production specialization, significant changes in the specific weights of complementary industries — the restructuring of production structure
	Criterion interval	III The structure of production with minor changes in all areas, the preservation of industrial specialization in the region	IV Changes in the complementary areas of the region while maintaining the production specialization, diversification of production
	Shift above the criterion interval	V Increasing of the production specialization with small changes in densities of complementary industries	VI Strengthening of industrial specialization and intensive changes in the position of complementary industries

cialization, the unstable development of a region. At the same time, the value of inter-sectoral shift above the criterion interval indicates that the shares of complementary industries vary very considerably in different directions (increase and decrease), and therefore the role of individual sectors increases, which may be a specialization of industries in the region in the future and contribute to the diversification of production.

In our view, the positioning of the regions, depending on the properly sectoral and intersectoral shifts allows to determine the trends in the industry structure change (Table 2). However, such a study is possible only for monospecialized regions. Aggregated analysis of industry-specific shifts for the system of polyspecialized regions is difficult due to the fact that each of those has a peculiar only to it set of industries with production specialization.

The analysis of the matrix suggests the following conclusions.

First, sectoral structure of production with the average values of properly sectoral and intersectoral changes is typical for quadrant III, corresponding to changes in the industry within the criterion interval and low-intensity of changes of specific weights of complementary industries, whereby production specialization ratio and industry in the region is kept. If the change goes into intersectoral shift, than changes in the supplement industry are observed, which could lead to the diversification of the industry while maintaining the production specialization (IV quadrant).

Second, in case if properly industry-specific shifts below the criterion interval, a significant reduction in the share of industry production specialization is

observed, which is shown against a background of low-intensity of changes of complementary industries densities (quadrant I). As a result, there is no appearance of new branches of production specialization. However, there may be significant changes in the complementary fields, and consequently, the restructuring of production and the emergence of new sectors of industrial specialization, which will affect inter-sectoral shift above the criterion interval (Quadrant II).

Third, properly industry-specific shifts above the criterion interval mean increasing of production specialization. At the same time, these cross-industry changes can be observed at the criterion interval, which means low-intensity changes in the specific weights of complementary industries, and then the region's economic development is determined by the position of the industry production specialization (quadrant V). If the inter-industry changes exceed criterion interval, then there are sectoral shifts in the complementary fields, which lead to an increase in the role of individual complementary industries and diversification of production (quadrant VI).

Testing of the proposed method was implemented for all subjects of the Russian Federation.

To determine the criteria of monospecialization and polyspecialization of the regions, the coefficient of specialization of 80 Russian regions was calculated. Among all the regions, three groups were selected that specialize in industries: agriculture, hunting and forestry, mining and manufacturing industries. For each of the regions, mean arithmetic values of the share of industry production specialization were defined (9%, 26% and 29% respectively)¹. The

¹ The arithmetic mean values are rounded down.

Table 3

Monospecialized and polyspecialized regions

Group of regions	Отрасли производственной специализации		
	Agriculture, hunting and forestry	Mining and quarrying	Manufacturing industries
Monospecialized regions	the Republic of Kalmykia, the Republic of Karachai-Cherkessia, the Republic of North Ossetia, the Republic of Altai, the Republic of Kabardino-Balkaria (5)	The Republic of Komi, the Republic of Udmurtia, Orenburg region, Tyumen region, Kemerovo region, Tomsk region, the Republic of Sakha (Yakutia), Sakhalin region, Chukotka Autonomous District (9)	Vladimir region, Kaluga region, Lipetsk region, Tula region, Vologda region, Novgorod region, Astrakhan region, Volgograd region, Perm territory, Nizhny Novgorod region, Sverdlovsk region, Chelyabinsk region, Krasnoyarsk territory, Omsk region (14)
Polyspecialized regions	Belgorod region, Bryansk region, Kostroma region, Kursk region, Orel region, Ryazan region, Tambov region, Tver region, Arkhangelsk region, Leningrad region, St. Petersburg, the Republic of Adygea, the Republic of Dagestan, Krasnodar territory, Rostov region, the Republic of Mari-El, the Republic of Mordovia, the Republic of Tatarstan, Kirov region, Penza region, Samara region, Saratov region, Jewish Autonomous Region (23)		

Table 4

Critical interval of values of industry-specific changes

Type of region specialization		Critical interval	
		Properly industry-specific change (rate of the industry share growth, %)	Inter-industrial change (quadratic coefficient of relative structural changes, %)
Monospecialized regions	Agriculture, hunting and forestry	[-9,28; 4,14]	[0; 38,81]
	Mining and quarrying	[-4,20; 72,41]	[0; 38,76]
	Manufacturing industries	[-6,27; 10,16]	[0; 27,51]
Polyspecialized regions		—	[0; 27,46]

Table 5

Grouping of monospecialized regions on the condition of properly sectoral and intersectoral shifts

	Types of economic activity	Types of industry-specific shifts	Inter-industrial shift	
			Critical interval	Shift above critical interval
Properly industry-specific shift	Agriculture, hunting and forestry	Shift under critical interval	the Republics of Karachaevo-Cherkessia and Kabardino-Balkaria	
		Critical interval		the Republic of North Ossetia, the Republic of Altai
		Shift above critical interval	the Republic of Kalmykia	
	Mining and quarrying	Shift under critical interval	Tomsk region	Tyumen region, the Republic of Sakha
		Critical interval	the Republic of Komi, Kemerovo region, the Republic of Udmurtia, Orenburg region	
		Shift above critical interval	Sakhalin region	Chukotka Autonomous District
	Manufacturing industries	Shift under critical interval	Chelyabinsk region, Omsk region, Krasnoyarsk territory	Sverdlovsk region, Lipetsk region
		Critical interval	Vladimir region, Vologda region	Novgorod region, Nizhny Novgorod region, Tula region
		Shift above critical interval	Astrakhan region, Volgograd region	Kaluga region, Perm territory

excess of the calculated values of the specialization index shows a distinctive production specialization of the region in a given industry.

Thus, monospecialized regions are territories which specialize on production of goods of a separate industry, which share in the industrial structure of the gross regional product is not less than 18%.

At the same time, polyspecialized regions are territories which have at least three industries of production specialization, which share is not less than 9% per individual industry.

Based on the criteria of monospecialization and polyspecialization, monospecialized (28) and polyspecialized regions (23) were selected among

80 Russian regions¹, the criterial interval was calculated, as well as properly sectoral and intersectoral shifts for each of the selected regions. Indirectly, changes in regional industrial sectors are reflected in the complementary industries of intersectoral shifts, since they take into account those changes in the sectoral structure of the whole region. The distribution of the Russian Federation's subjects into groups of monospecialized and polyspecialized regions is shown in Table 3.

For each group monospecialized on a separate branch and polyspecialized regions, own criterial intervals industry-specific of changes are calculated (Table 4).

The final distribution of the monospecialized subjects of the Russian Federation depending on the combination of properly sectoral and intersectoral shifts is shown in Table 5. Regions, where regional sectoral shifts are observed, are marked with the shaded field.

Parallel to this an assessment of the level of economic development for the different types of regions has been carried out². As a result, the following conclusions were made.

First, regions specialized in agriculture have their level of economic development below the national average indicators; these are regions — outsiders, with the exception of the Altai Republic — a region with average indicators. In the Republic of Kalmykia, the specialization has been increasing; the economic development of the region depends on the state of agriculture, hunting and forestry sector. The weakening of specialization is shown in the Republics of Kabardino-Balkaria and Karachaevo-Cherkessia. All three regions are characterized by interdisciplinary minor inter-industrial changes. From the perspective of the development of new industries of specialization, the most favorable combination of shifts is characteristic for the Republics of North Ossetia and the Altai, in the worst situation are Karachaevo-Cherkessia and Kabardino-Balkaria Republics.

Second, the share of regions specialized in the extraction of minerals and being the outsiders in

their development amounts to 55%, the rest has an average or above average level of development (Tyumen region is a region-leader). This group has the highest regional growth rate of variation of the proportion of all industries that characterize these regions as the most dynamic in comparison with all other groups analyzed. Among the regions that fall in the criteria range (the Republic of Komi, the Republic of Udmurtia, Kemerovo and Orenburg regions), only one region — the Republic of Komi — is an outsider in their development. The subjects of the Russian Federation are characterized by low inter-sectoral dynamics of change and preservation of specialization. This is the most static subgroup of regions. The most dynamic ones are Tyumen region, the Republic of Sakha and Chukotka Autonomous District (inter-industry shifts above the criterial interval), where the attenuation (in the first two regions) and the increasing specialization (in the latter region) with intense changes in industrial structure as a whole were observed. The least dynamic branch structures from the perspective of the values of inter-sectoral changes have Tomsk region and Sakhalin, in which both weakening and strengthening of specialization are taking place, respectively. The least favorable combination of actual sectoral and intersectoral changes has Tomsk region, a significant reduction in the share of industry specialization was observed and low inter-sectoral dynamics of change suggests a low probability of the emergence of new industries of specialization.

Third, the share of the regions specialized in the manufacturing sector, having an average level of economic development, amount to 50%, developed regions — 36%. For this group of regions, all six variants of branch structures are characteristic. Regions falling within the criterial interval (Vladimir and Vologda regions), have an average level of development. The weakening of industrial specialization is observed in Chelyabinsk and Omsk regions, also in Krasnoyarsk territory, and cross-sectoral changes are of low intensity and do not contribute to the emergence of new fields of specialization. Multi-sectoral shifts above the criterial interval are characteristic for Sverdlovsk and Lipetsk regions, which could lead to even more progressive sectors of specialization. Novgorod, Nizhny Novgorod and Tula regions distinguished themselves by sectoral changes within the criterial interval and intense inter-industry shifts in the entire industrial structure, which indicates the di-

¹ The remaining 29 regions occupy an intermediate position.

² The level of economic development has been assessed by cluster analysis using 10 criteria (the share of the region in the average number of employees in the economy, the share of the region's GRP, the proportion of the region in the capital stock of the economy, the share of the region for investments in fixed assets etc.). The regions were divided into five clusters: 1) the leading regions; 2) the developed regions; 3) the middle tier; 4) regions-outside; 5) regions of special attention.

versification of production. Strengthening of industrial specialization with the minor interdisciplinary changes was seen in Astrakhan and Volgograd regions, these regions are highly vulnerable to technological and market fluctuations, as they have no margin of safety as other sectors of specialization. Finally, Kaluga region and Perm territory are characterized by high intensity of the actual branch and inter-sectoral shifts, indicating the restructuring of the manufacturing production specialization in the amplification of the region's economy and adaptation to the new position of industries.

Fourth, the analysis showed that 83% of polyspecialized regions have an average or above average level of development.

Despite that, a comparison of monospecialized and polyspecialized regions has proven that: 1) polyspecialized regions have higher levels of economic development and low levels of inter-industry changes, so they are more stable and less

susceptible to fluctuations in economic conditions, while monospecialized regions have a higher rate of change in the sectoral structure of production, as well as lower levels of economic development; 2) sectoral shift in polyspecialized regions leads to increased specialization in one or more branches and at the same time weaken the expertise of other branches, which makes the whole system remaining stable due to the reallocation of resources between sectors. At the same time, this industry shift of monospecialized regions in the sectors of industrial specialization leads to intensification of specialization of the region as a whole, and thus to a strengthening or weakening of the state of the industry structure of the region; 3) polyspecialized regions are less affected by external and internal environment (changing markets, economic conditions, reduction on the finance industry, national currency rate fluctuations, changes in demand in the goods sectors of industrial specialization in the region etc.).

Table 6

A complex of measures of structural policy in the monospecialized regions of Russia

Type of industry-specific changes	Properly industry-specific change and shift below critical interval (weakening or maintaining of industrial specialization)	Properly industry-specific change and shift above critical interval (strengthening of industrial specialization)
Inter-industrial change (in the frames of critical interval)	<p>Target: sanitation (rehabilitation) of the industry specialization and the initiation of positive progressive sectoral shifts</p> <p>Measures:</p> <ul style="list-style-type: none"> – Development and funding of programs to support industry specialization; – Restructuring of the production sector of specialization; – Withdrawal of inefficient enterprises from economic circulation of the industry of specialization; – Encouraging innovational and investment activity of the industry of specialization (investment of profits in innovational elaborations, technological upgrading of equipment and development of related manufacturings); – Participation in the creation of market infrastructure of the industry of specialization (information, consultation and innovation centers, business, industrial, engineering and scientific associations, unions, guarantee and venture capital funds) 	<p>Target: reducing the threat of the economy of the region dependence on the conditions of market products of the industry of specialization</p> <p>Measures:</p> <ul style="list-style-type: none"> – Intra-industry diversification of production (the development of sub-sectors and related industries); – Promotion of non-investment activities (applied research and development for small and medium enterprises); – Selection of high-performance enterprises of the industry, the creation on their based of the clusters, inter-industry complexes, free economic zones; – Finding and creating new markets for the goods of the industry of specialization (state orders — providing government guarantees), the promotion of inter-regional exchange of goods (state insurance of transactions risk)
Inter-industrial shift (above the critical interval)	<p>Target: stimulation of the development of the related industries</p> <p>Measures:</p> <ul style="list-style-type: none"> – Identification of promising industries with innovative industry shifts; – Organization (arrangement of competitive selections), implementation and funding of individual investment projects aimed at development of the region with the involvement of new branches of studies (project investment grants); – Encouragement of the creation of new businesses in complementary industries, expansion and modernization of the existing ones (tax credits); – Implementation of training programs, training and retraining of personnel for the new industries of specialization; – Development of regional programs and strategies of socio-economic development of the territory with the development of new branches of specialization; – Forced direction of investment resources of commercial banks into promising areas; – Encouragement of the creation of new employment slots (subsidies) 	

At present, in Russia there is no Federal Law on the structural, industrial or sectoral policies of the state. In our point of view, structural policy as a mean of target landmark should have such regional industry-specific shifts that contribute to the progressive changes in the sectoral structure of the region in the direction of formation of the V and VI of technological structures, increase diversification of the manufacturing by promoting innovative changes.

The sequence of structural policy implementation in monospecialized regions, taking into account the changes in the industries of industrial specialization, in our point of view, should be the following.

At Stage I, it is expedient to analyze the status and changes in the sectoral structure of regional economies, taking into account the dynamics of industrial specialization of industries, as a result of which a typology of monospecialized regions based on the state of their industrial structure is held, on the one hand, and the level of economic development, on the other hand.

At Stage II, one should determine the content of structural policies in monospecialized regions on the basis of changes in the industry within and outside the criterial interval for the mean change in the industry. During this phase, aims of structural policy are formed; the mechanism of its implementation is being developed, as well as a set of measures for different types of regions.

At Stage III, it is necessary to monitor the dynamics of industrial change and regional shifts, resulting in phase IV to adjust the objectives and instruments of regional structural policy.

In line with the methodological approach of positioning the subjects of the Russian Federation as of the current condition sectoral shifts, a set of measures of structural policies in monospecialized regions was developed, which feature is the consideration of industry structure prevailing in monospecialized regions, depending on the actual combination of sectoral and intersectoral shifts (Table 6).

All monospecialized regions were divided into three groups depending on their industry structure. The first group includes the regions which are characterized by a combination of properly changes in the industry within the criterial interval or shift below the criterial interval (weakening of industrial specialization) and inter-sectoral changes within the criterion interval. For this group of regions, sanitation (rehabilitation) appears as the target, the industry specialization and the initiation of positive progressive industry-specific shifts towards the formation of V and VI of technological modes.

The second group consists of the regions which are characterized by a combination of properly industry-specific shift above the criterial interval and inter-sectoral changes within the criterial interval. The aim of the structural policy in these regions is to reduce the threat to the economy of the region depending on the market conditions in the industry of specialization of production, so the main areas of policy are intra-diversification and promotion of non-investment activities.

The third group consists of regions where there is a combination of properly industry-specific changes within the criterial interval or the industry-specific shift above or below the criterial interval and inter-sectoral shift above the criterial interval. This brings complementary industry stimulation as a target, which requires the development of promising industries with innovative industry shifts, the development of regional programs, strategies and socio-economic development of the area with the development of new fields of specialization etc.

Thus, the study of changes in industry-specific sectors of industrial specialization and inter-industrial changes allows us to offer a more reasonable set of measures, which are differentiated according to the options of a combination of properly sectoral and intersectoral shifts aimed at increasing the diversification of production towards the promotion of economic development.

References

1. Belousov A. R. (2004). Razvitie rossiyskoy ekonomiki v srednesrochnoy perspektive: analiz ugroz [Development of the Russian economy in the medium term: an analysis of threats]. Problemy prognozirovaniya [Problems of Conceptual Foresight], 1, 3-25.
2. Butakova M. M., Sokolova O. N. (2005). Promyshlennost' regiona. Innovatsionnaya sostavlyayushchaya strukturnykh izmeneniy [Industry of the region. An innovative component of the structural changes]. Polzunovskiy vestnik [Polzunov Bulletin], 2, 154-157.
3. Vinikurov A. A., Plisetskiy E. L. (Ed.) et. al. (2008). Vvedenie v ekonomicheskuyu geografuyu i regional'nyuyu ekonomiku Rossii [Introduction to economic geography and regional economy of Russia]. 2-e izd., ispr. i dop. [2nd Edition, Revised and Updated]. Moscow: Gumanitar. izd. tsentr VLADOS [Humanitarian Publishing Center VLADOS].

4. Gizatullin Kh. N., Rizvanov D. A., Tatarkin A. I. (Ed.) (2005). Problemy upravleniya slozhnymi sotsial'no-ekonomicheskimi sistemami [The problems of managing complex social and economic systems]. Moscow: Ekonomika [Economics]; IE UrO RAN [Institute of Economics, Ural Branch of the Russian Academy of Sciences].
5. Granberg A. G. (2006). Vasiliiy Leont'ev v mirovoy i otechestvennoy ekonomicheskoy nauke [Vasiliiy Leont'ev in the international and domestic economic science]. Ekonomicheskii zhurnal Vyshey shkoly ekonomiki [Economic Journal of the Higher School of Economics], Vol. 10, 3, 471-492.
6. Granberg A. G. (1985). Dinamicheskie modeli narodnogo khozyaystva [Dynamic models of the national economy]. Moscow: Ekonomika [Economics].
7. Dedov L. A., Eyssner Yu. (2002). O spetsifike strukturnykh [On the specificity of structural]. Obshchestvo i ekonomika [Society and Economics], 10-11, 227-238.
8. Kazinets L. S. (1981). Tempy rosta i strukturnye sdvigi v ekonomike. Pokazateli planirovaniya i statistiki [Growth rates and structural shifts in the economy. Indicators of planning and statistics]. Moscow: Ekonomika [Economics].
9. Kene F. (1960). Izbrannye ekonomicheskie proizvedeniya [Selected works on the economics]. Moscow: Izdatel'stvo sotsial'no-ekonomicheskoy literatury [Socio-economic Literature Publishing House].
10. Krasil'nikov O. Yu. (2000). Strukturnye sdvigi v ekonomike sovremennoy Rossii [Structural shifts in the economy of modern Russia]. Saratov: Nauchnaya kniga [Scientific Book].
11. Leont'ev V. V. (2006). Obshcheekonomicheskie problemy mezhotraslevogo analiza [General economic problems of inter-industrial analysis]. Izbrannye proizvedeniya : v 3 t. T. 1 [Selected works in 3 volumes. Volume 1]. Moscow: JSC «Izdatel'stvo „Ekonomika“» Publ.
12. Negishi T. (1995). Istoriya ekonomicheskoy teorii [History of the economic theory]. Moscow: JSC «Aspekt Press» Publ.
13. Romanova O. A. (2011). Strukturnaya modernizatsiya industrial'nogo regiona kak faktor ustoychivogo razvitiya [Structural modernization of the industrial region as a factor for sustainable development]. Vestnik UrFU [Bulletin of the Ural Federal University], 4, 56-64. (Economics and Management).
14. Romanova O. A. (2011). Usloviya i faktory strukturnoy modernizatsii regional'noy promyshlennoy sistemy [Conditions and factors of structural modernization of the regional industrial system]. Ekonomika regiona [Economy of Region], 2, 40-49.
15. Tatarkin A. I., Perminova N. I. (2007). Posledstviya likvidatsii gradoobrazuyushchey otrasli na lokal'noy industrial'noy territorii [The consequences of elimination of the forming industry on the local industrial territory]. Region. Ekonomika i sotsiologiya [Region. Economics and Sociology], 1, 198-209.
16. Tatarkin A. I., Romanova O. A. (2007). Promyshlennaya politika i mekhanizm ee realizatsii. Sistemnyy podkhod [Industrial policy and mechanism for its implementation. Systemic approach]. Ekonomika regiona [Economy of Region], 3, 19-32.
17. Trunin S. N. (2005). Spetsifika strukturnykh sdvigo v i krizisov v usloviyakh globalizatsii [The specificity of structural changes and crises in a globalized world]. Finansy i kredit [Finances and Credit], 1, 10-13.
18. Yaremenko Yu. V. (1999). Prioritety strukturnoy politiki i opyt reform [Priorities of the structural policy and the experience of the reforms]. Moscow: Nauka [Science].
19. Yasin E. (2003). Strukturnyy manevr i ekonomicheskii rost [Structural manevre and economic growth]. Voprosy ekonomiki [Questions of Economics], 8, 4-30.

Information about the authors

Antonyuk Valentina Sergeevna (Chelyabinsk) — Doctor of Economics, Professor, Head of the Department of economic theory and the global economy, South Ural State University (454080, Chelyabinsk, prospekt im. V. I. Lenina, 76 - 506, e-mail: antvs@mail.ru).

Vansovich El'mira Rifatovna (Chelyabinsk) — Ph.D. in Economics, Associate Professor at the Department of economic theory and the global economy, South Ural State University (454080, Chelyabinsk, prospekt im. V. I. Lenina, 76 - 506, e-mail: kapkaeva.elmira@mail.ru).