P. Ya. Baklanov, A. V. Moshkov
Pacific Institute of Geography, the Far Eastern Branch of the Russian Academy of Sciences (Vladivostok, Russian Federation)

STRUCTURAL TRANSFORMATIONS OF THE ECONOMY IN THE PACIFIC REGION OF RUSSIA AND EFFICIENCY TRENDS

Pacific Russia is viewed as an aqua-territorial macro-region that encompasses the Far Eastern Federal District and the adjacent water area within the 200-mile maritime economic zone. The macro-region has a wealth of natural resources at land and on sea, opportunities for the use of sea transport to link Russia and Europe with the countries of Asia-Pacific Region. Pacific Russia is divided into 2 latitudinal zones — the northern zone and southern zone, which include the territories of northern and southern constituents of the Russian Far Eastern Federal District. The combinations of activities by constituent entities and latitudinal zones are considered as the territorial structures of the economy. This article reveals the differences in socio-economic capacity and development level of these latitudinal zones. The authors have assessed the structural transformations in the economy of latitudinal zones in 2004–2013 by taking into account the changes of similar activities in the constituent entities and their ratios measured as a share of value added. This allowed to identify the transformations of territorial economic structures in the latitudinal zones. Over this period, the greatest changes of economic structures occurred in the northern zone. In the southern zone, the structural transformations of the economy were smaller, except for the Sakhalin region. In all latitudinal zones, there was a decrease in the share of manufacturing industries and the increase in the share of extractive industries. The article compares the generalized assessment of changes in the social and economic efficiency (by the growth of population income, labor productivity, and profits) with the structural changes in the economy of the constituent entities of Pacific Russia. The authors note that an important premise for building a sufficiently sustainable system of interregional division of labor in Pacific Russia is the location of extractive industries and initial stages of the manufacturing industry activities in the northern zone, while the major manufacturing industries and interregional transport and logistics services are located in the southern zone. This article is intended for experts and students interested in the development problems of Russia's eastern regions.

Keywords: Pacific Russia, territorial structures of the economy, value added, latitudinal economic zones, main types of activities, latitudinal profiles, extractive industries, manufacturing industries, structural transformations of the economy

Introduction

Far Eastern region of Russia, viewed within the boundaries of the Far Eastern Federal District, is the most easterly and largest macro-region of the Russian Federation. Based on its strategically important geographical position near the Pacific, we can identify two groups of Russian territories which, to varying degrees, gravitate towards the Pacific ocean:

1. Constituent entities of the Russian Federation with direct access to the Pacific Ocean that have a great economic and geographical pull towards it (Primorsky Krai, Khabarovsk Krai, Kamchatka Krai, Sakhalin Region, Magadan Region, and Chukotka Autonomous District). The economies of these constituent entities have various and well developed marine economic structures and functions.

2. Constituent entities of the Russian Federation with no direct access to the Pacific Ocean, but still experiencing a substantial economic pull towards it, including through transport and energy communications (Republic of Sakha (Yakutia), Amur Region and Jewish Autonomous Region).

An important role in the economies of these constituent entities is played by the transport (Trans-Siberian Railway and Baikal-Amur Railway, Eastern Siberia — Pacific Ocean main oil pipeline, navigable Amur river), and extractive industries whose products are exported to Asia-Pacific Region (APR) largely through existing transport infrastructure and maritime transport. The significant import links are maintained in the opposite direction.

It should be noted that the Republic of Sakha (Yakutia), with its extensive northern coast, has access to the Arctic Ocean. Therefore, with the future development of the Northern Sea Route, the external relations of the Republic will have an increasingly eastward orientation. The Amur-Yakutsk Railway and Power of Siberia gas pipeline, that are under construction, will contribute to this trend.

Translation

In the future, the role of proximity to the ocean in the development of the macro-region will be strengthened not only due to the extensive development of fisheries and marine products, but also oil and gas, and various mineral natural resources offshore. The involvement of poorly developed territories and sea water areas (including the totality of locally available natural and economic resources) in the economic activities can be regarded as a determining factor for the development of the economy, the population of Russia as a whole, which will ultimately determine its geopolitical weight and security. Therefore, we regard the Far Eastern region within the boundaries of the Federal District together with the adjoining 200-mile maritime economic zone as Pacific Russia, the largest aqua-territorial macro-region [2]. This macro-region has a great extent (more than 4 thousand km) from north to south and from west to east, which is reflected in the spatial differentiation of its economy both in the meridional direction (from continental types to the maritime types) and in the latitudinal direction (from the northern, arctic types to southern, more diverse types). Accordingly, there are also differences in the structural changes of activity types that we have studied, primarily, for the latitudinal zones.

Defining the objective

As the latitudinal zones, we identify the combinations of territories belonging to the constituent entities of the region located sequentially in the latitudinal direction — from west to east (or from east to west). Such latitudinal zones do not coincide with the natural ones, yet they have substantial differences — natural, climatic, resource-related and environmental — which have a great impact on the spatial differentiation of the economy.

The most important premise for the regional development of any latitudinal zone is the established spatial structure of economic activities of the population and, in a broader sense, the territorial organization of economy. The territorial organization of economy means the orderly location of activities in the form of various economic enterprises and their combinations on the territory accompanied by the establishment of economic relations between them and connections with the territory [2]. On the one hand, the territorial organization of the economy reflects regional differences in the implemented types of development and their certain inertia while, on the other hand, it reflects certain trends in the future development of regional economic structures.

The constituent entities of Pacific Russia, included in its northern and southern latitudinal zones, have different indicators of socio-economic capacity and the size of the territory (Table 1).

A general pattern emerges clearly — the northern constituent entities and latitudinal zones have much more territory, while the southern ones have a significantly higher demographic and socio-economic capacity. For example, the constituent entities of northern latitudinal zone account for 76.6 % of the surface area and 23.7 % of the population, as well 29.9 % of Gross Regional Product and 33.0 % of the industrial production in Pacific Russia. In the southern latitudinal zone, 76.3 % of the population, as well as 70.1 % of the Gross Regional Product and 67.0 % of the industrial production of the region are concentrated on 23.4 % of the territory of Pacific Russia.

Therefore, this study has two following objectives:

1. To identify and assess the changes, structural transformations of the economy in the latitudinal zones of Pacific Russia from 2004 to 2013.

It seems that such assessments could be more rigorous if performed for three latitudinal zones — northern, central and southern — according to the number of the most easterly constituent entities of the Russian Federation from the north to the south: Chukotka Autonomous District, Kamchatka Krai, and Sakhalin Region. However, there are only two most westerly constituent entities in the region: Republic of Sakha (Yakutia) and Amur Region. The Republic of Sakha (Yakutia) has the northern, arctic types of the economy, as well as the combinations of extracting and manufacturing types of activities that have emerged in its central and southern areas [8, 9, 12, 13]. However, given the absence of reliable data for individual districts of the republic, that can be compared with the data on constituent entities, we have identified (with a certain degree of conditionality and generalization) two latitudinal zones: the northern that includes the territories of the Republic of Sakha (Yakutia), Magadan Region, Kamchatka Krai and Chukotka Autonomous District, and the southern consisting of the Amur Region, Jewish Autonomous Region, Khabarovsk Krai, Primorsky Krai, and Sakhalin Region.

2. To assess trends in the efficiency of activity types and social sphere in the constituent entities of latitudinal zones of Pacific Russia over the same period by using several socio-economic indicators,

---

Translation

Table 1

Socio-economic characteristics of latitudinal zones in Pacific Russia, by the share of constituent entities in the Far Eastern Federal District*, 2014, %

Constituent entity of Pacific Russia	Surface area, thousand km^2	Population as of 1/1/15, thousand	Gross Regional Product in 2013, thousand rubles	Industry, total, million rubles
Pacific Russia (Far Eastern Federal District), total	100.0	100.0	100.0	100.0
1. Northern profile, total	76.6	23.7	29.9	33.0
Republic of Sakha (Yakutia)	49.9	15.4	20.3	22.9
Magadan Region	7.5	2.4	3.2	3.6
Kamchatka Krai	7.5	5.1	4.7	3.1
Chukotka Autonomous District	11.7	0.8	1.7	3.4
2. Southern profile, total	23.4	76.3	70.1	67.0
Amur Region	5.9	13.0	7.5	5.0
Jewish Autonomous Region	0.6	2.7	1.3	0.4
Khabarovsk Krai	12.8	21.6	16.9	12.1
Primorsky Krai	2.7	31.1	20.5	12.9
Sakhalin Region	1.4	7.9	23.9	36.6

* Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2015: Stat. sb. [Russian regions. Socio-economic indicators. 2015: Statistical Book]. (2015). Moscow: Rosstat, 266.

such as the per capita Gross Regional Product, labor productivity index (% YoY), balanced financial result (profit minus loss) of organizations, average per capita income.

3. Based on comparisons of structural changes in the economy by latitudinal zones and changes of the socio-economic efficiency, to identify trends in the efficiency of structural transformations.

It should be noted that Academician A. G. Granberg was one of the first to perform the general analysis of the location of productive forces by latitudinal zones of Russia (1983) [5]. A collection of research papers examining various aspects of the Siberian economy in the context of latitudinal zones was published under his editorship (1985) [6]. Later, various authors studied individual aspects of the economic structure, factors of balanced economic development and their transformations in the latitudinal zones and regional context [1, 3, 4, 7–23].

In this regard, the quantitative description of the economy of latitudinal zones and the analysis of their spatial features can be made by latitudinal profiles, which reflect the spatial differences and similarities between the neighboring constituent entities of the Federal District included in the same latitudinal zone as homogeneous types of economic activities and their combinations.

The structural changes were assessed in terms of transformations of the territorial structures of the economy for specific periods, including from 2004 to 2013. The transformation of territorial structure means changes in interconnected parts of the economy (types of economic activities) within a specific territory. At the same time, the territorial structures of the economy are examined in a generalized way, in the form of combinations of activity types in the constituent entities and latitudinal zones of Pacific Russia.

Source data and research methods

The structure of the economy in the latitudinal zones was assessed by the ratios of activity types in the corresponding constituent entities of Pacific Russia. The combinations of activity types in the constituent entities were assessed by the sectoral structures of value added, based on the statistical data for 2004 and 2013.

In a generalized way, the combination of constituent entities included in the same latitudinal zone and reflected by quantitative characteristics in the form of homogeneous indicators or combinations of the same indicators were examined as specific latitudinal profiles.

In this study, we used the systemic and structural approach, the concept of unevenness and inertia in spatial development, the concept of sustainable development. We used economic and geographic research methods, such as comparative geographical method and methods of statistical analysis.

Translation

We also used the approaches to the study of territorial structures of the economy, their inertia and structural transformations.

Main findings

The transformation of economic structure in the constituent entities of Pacific Russia, as a change in their territorial structures, was assessed by their prevailing sectoral structure of gross value added, including the main and auxiliary types of economic activities, as of 2004 and 2013. The main types of activities in the economy of the Republic of Sakha (Yakutia) are

— The extraction of minerals (non-ferrous and precious metals, diamonds, coal, oil and natural gas);

— In Kamchatka Krai — fishing, fish processing, mining of precious metals; in Primorsky Krai — fishing, fish processing, extraction of non-ferrous and precious metal ores, production and repair of machinery and equipment, timber industry, food industry, transport;

— In Khabarovsk Krai — production and repair of machinery and equipment, extraction of non-ferrous and precious metal ores, timber industry, transport;

— In Amur Region — extraction of non-ferrous and precious metal ores, timber industry, power industry, transport;

— In Magadan Region — extraction of precious metals; in Sakhalin Region — extraction of oil and gas, fishing, fish processing;

— In Jewish Autonomous Region — extraction of ferrous and precious metal ores, consumer goods industry;

— In Chukotka Autonomous District — extraction of precious metal ores.

Other types of activities are referred to auxiliary. Their composition is almost the same for all constituent entities of Pacific Russia, while the amounts and ratios are determined, primarily, by the number of employed population, the size of specialized production facilities, natural and climatic conditions.

Therefore, in the constituent entities of northern latitudinal zone of Pacific Russia, the main specialized types of economic activities are the extraction of minerals, fishing and fish farming, agriculture (reindeer husbandry), hunting. In 2013, their share accounted for 45.3 % of gross value added in the Republic of Sakha (Yakutia), 34.4 % in Chukotka Autonomous District, 20.5 % in Magadan Region, 15.8 % in Kamchatka Region.

A significant amount of gross value added in these constituent entities is provided by auxiliary types of activities (construction, production and distribution of electricity, gas and water, transport and communications, wholesale and retail trade, hotels and restaurants, education and health care, real estate operations, etc.) (Fig. 1).

In the southern zone, in addition to the extraction of minerals, an important role in the formation of specialized types of production activities is played by manufacturing industries and transport. The share of specialized production facilities in most constituent entities of this zone does not exceed 50 % (for example, in Amur Region, 45.6 %; Primorsky Krai, 34.7; Khabarovsk Krai, 36.1; Jewish Autonomous Region, 30.7). Only in the structure of gross value added of Sakhalin Region, a significant role is played by extractive industries and, as a result, the share of specialized production facilities in this area accounts for 63.6 % of output. These data show that, in the southern zone, the share of specialized types of activities is substantially higher.

The same pattern can be seen more clearly in the development characteristics of the territory (Table 2). The highest socio-economic development of the territory is registered in the constituent entities that belong to the southern zone of the spatial economy in Pacific Russia. It has the highest specific indicators, such the density of population, infrastructure development (density of hard surface roads), economic characteristics (Gross Regional Product per 1 km^2), investment attractiveness (investments in fixed assets per 1 km^2 of the territory).

Therefore, the economic capacity of the territories in general substantially decreases from southern to northern areas (the density of population decreases from 5.18 people/km^2 in the southern area to 0.35 in the northern area; the Gross Regional Product — from 2691.9 thousand rubles/km^2 in the southern area, to 181.1 in the northern area; the density of motor roads — from 44.6 km^2 in the southern area to 3.5 in the northern area; the investment in fixed capital — from 771.1 thousand rubles/km^2 in the southern area to 53.0 in the northern area). Similarly, there is a significant decrease in the

---

Translation

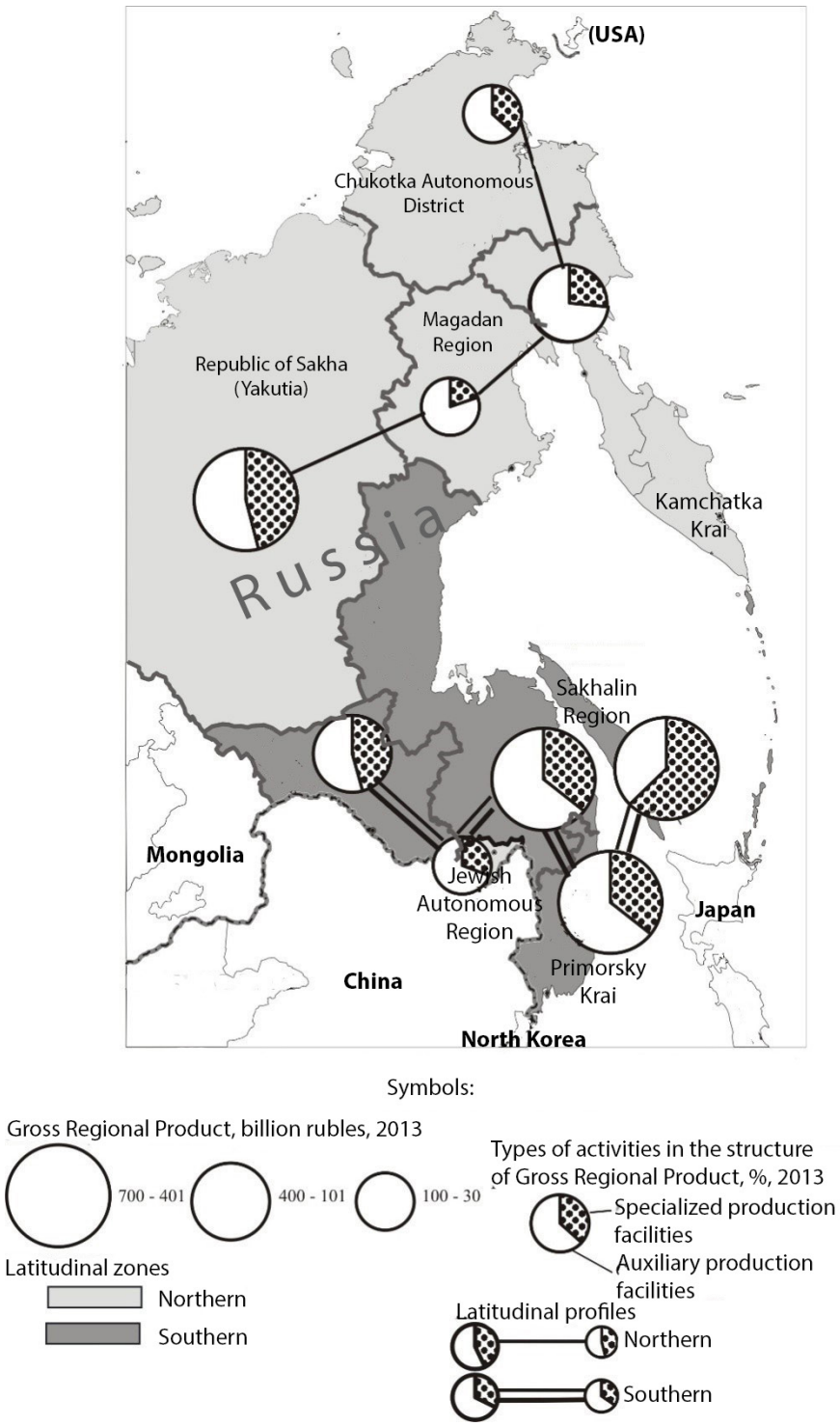

Fig. 1. *The latitudinal zones and profiles of Pacific Russia*

demographic potential and reduction in the variety of activities. It should be noted that the greatest contribution to the capacity of the southern zone is made by two constituent entities, Sakhalin Region and Primorsky Krai.

It should be noted that the northern latitudinal zone (territories of all constituent entities) adjoins a huge water area within the 200-mile maritime economic zone with its large and diverse natural, resource, transport and transit capacity. Therefore, in the long run, a major increase in economic capacity will be occurring in the eastern and northern latitudinal directions. A greater variety of specialized types of activities will remain and increase in the southern zone. As a result, it will have a higher self-development capacity. This interdependence was noted in several studies [1, 4, 15, 23].

Translation

Table 2

The level of socio-economic development in the latitudinal zones of Pacific Russia*, 2014

Constituent entity of latitudinal zones	Density of population, as of 1/1/15, people/km²	Gross Regional Product, thousand rubles/km²	Density of roads, per 10,000 km²	Investment in fixed capital, thousand rubles/km²
1. Average value for northern zone:	0.35	181.1	3.5	53.0
Republic of Sakha (Yakutia)	0.31	184.6	3.7	65.6
Magadan Region	0.32	191.3	5.3	82.9
Kamchatka Krai	0.68	283.4	4.1	54.3
Chukotka Autonomous District	0.07	65.1	0.9	14.4
2. Average value for southern zone:	5.18	2691.9	44.6	771.1
Amur Region	2.24	583.7	31	205.3
Jewish Autonomous Region	4.64	1043.7	69	296.3
Khabarovsk Krai	1.69	601.4	12	149.7
Primorsky Krai	11.74	3494.9	89	819.6
Sakhalin Region	5.61	7735.6	22	2414.6

* Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2014: stat. sb. [Russian regions. Socio-economic indicators. 2014: Statistical Book]. (2014). Moscow: Rosstat, 900; Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2015: stat. sb. [Russian regions. Socio-economic indicators. 2015: Statistical Book]. (2015). Moscow: Rosstat, 1266.

To assess the transformation of territorial structures of the economy in 2004–2013, we analyzed the changes in the sectoral structures of the economy in the constituent entities of Pacific Russia for identified latitudinal zones (Table 3).

The particular aspects of structural transformation affecting the industrial production in the northern zone of Pacific Russia (Republic of Sakha (Yakutia), Magadan Region, Kamchatka Krai and Chukotka Autonomous District) from 2004 to 2013 are presented in Fig. 2. Despite great differences in quantitative indicators of these constituent entities, there is a significant similarity in the structure of production, which is caused by the impact of similar factors affecting the development and location of industrial facilities. In this case, an important role is played by the wealth of mineral resources, the development of which is constrained by the weakness of production and social infrastructure, as well as the significant remoteness of these constituent entities of Pacific Russia from their sales markets.

From 2004 to 2013, the most substantial changes affected the extraction of minerals in Chukotka Autonomous District (the share of this type of economic activity in the gross value added increased

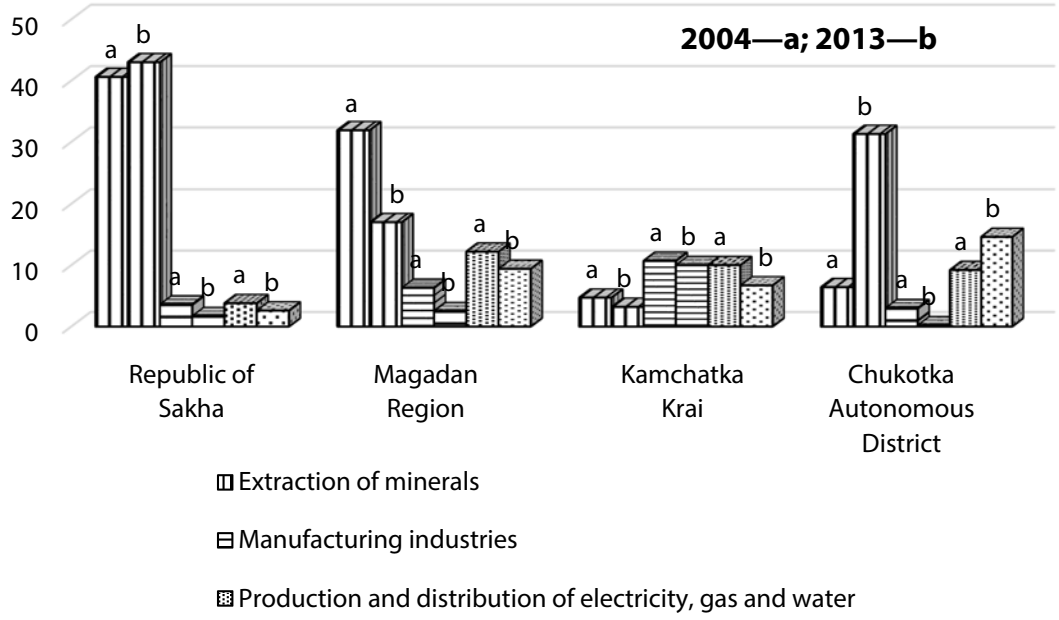

Fig. 2. *The structural changes of industrial production in the northern latitudinal zone of Pacific Russia (Republic of Sakha (Yakutia), Magadan Region, Kamchatka Krai and Chukotka Autonomous District) over 2004–2013. (current prices, % of total)*

Translation

Table 3

The sectoral structure of the gross value added produced in the latitudinal zones of Pacific Russia* (by constituent entities of Far Eastern Federal District) in 2004 and 2013 (current prices, as a percentage to total)

Constituent entity of Pacific Russia	Gross value added, total	Type of economic activities													
		Agriculture, hunting and forestry	Fishing, fish farming	Extraction of minerals	Manufacturing industries	Production and distribution of electricity, gas and water	Construction	Wholesale and retail trade; repair of motor vehicles, motorcycles, household products, etc.	Hotels and restaurants	Transport and communications	Financial activities	Real estate operations, lease and services	Public administration and military security, etc.	Education	Health care and social services	Other utilities, social and personal services
Pacific Russia, total	100 100	3.0 (5.9) [–2.9]	2.4 (4.0) [–1.6]	26.5 (14.9) [+11.6]	5.4 (9.3) [–3.9]	4.2 (5.5) [–1.3]	6.8 (9.3) [–2.5]	11.0 (13.0) [–2.0]	1.0 (0.9) [–0.1]	13.3 (14.3) [–1.0]	0.2 (0.3) [–0.1]	6.9 (7.3) [–0.4]	8.7 (4.9) [+3.6]	4.2 (4.5) [–0.3]	5.0 (4.6) [+0.4]	1.4 (1.3) [+0.1]
Northern latitudinal zone																
Republic of Sakha (Yakutia)	100 100	2.3 (4.7) [–2.4]	0.1 (0.1) [0.0]	43.0 (40.6) [+3.6]	1.7 (3.6) [–1.9]	3.8 (2.6) [+1.2]	8.1 (6.3) [+1.8]	7.2 (10.1) [–2.9]	0.7 (0.5) [–0.2]	9.5 (6.5) [+3.0]	0.2 (0.1) [–0.1]	4.7 (10.5) [–5.8]	6.8 (3.2) [+3.6]	5.7 (5.4) [+0.3]	4.6 (4.6) [0.0]	1.6 (1.2) [+0.4]
Magadan Region	100 100	1.4 (2.9) [–1.5]	3.1 (2.1) [+1.0]	17.4 (31.9) [–14.5]	2.5 (6.3) [–3.8]	9.4 (12.2) [–2.8]	7.9 (3.6) [+4.3]	13.4 (7.8) [+5.6]	1.1 (0.5) [+0.6]	6.7 (7.8) [–1.1]	0.2 (0.1) [+0.1]	5.7 (4.8) [+0.9]	16.2 (8.7) [+7.5]	5.2 (4.5) [+0.7]	7.7 (5.3) [+2.4]	2.1 (1.5) [+0.6]
Kamchatka Krai	100 100	3.4 (6.2) [–2.8]	12.6 (18.0) [–5.4]	3.2 (4.7) [–1.5]	10.0 (10.7) [–0.7]	6.7 (10.0) [–3.3]	4.8 (3.9) [+0.9]	10.1 (12.1) [–2.0]	1.2 (1.1) [+0.1]	7.9 (7.6) [+0.3]	0.1 (0.1) [0.0]	5.8 (4.3) [+1.5]	18.0 (7.3) [+10.7]	5.7 (5.5) [+0.2]	8.7 (6.8) [+1.9]	1.8 (1.7) [+0.1]
Chukotka Autonomous District	100 100	1.9 (3.9) [–2.0]	1.2 (4.3) [–3.1]	31.3 (6.4) [+24.9]	0.2 (3.0) [–1.8]	14.6 (9.2) [+5.4]	3.0 (31.1) [–28.1]	13.7 (6.0) [+7.7]	0.4 (1.1) [–0.7]	5.2 (10.2) [–5.0]	0.1 (0.0) [+0.1]	1.8 (4.6) [–2.8]	13.7 (8.9) [+4.6]	4.9 (5.3) [+0.4]	6.6 (4.2) [+2.4]	1.4 (1.8) [–0.4]

The end on the next page

The end of the Table 3

Constituent entity of Pacific Russia	Gross value added, total	Type of economic activities													
		Agriculture, hunting and forestry	Fishing, fish farming	Extraction of minerals	Manufacturing industries	Production and distribution of electricity, gas and water	Construction	Wholesale and retail trade; repair of motor vehicles, motorcycles, household products, etc.	Hotels and restaurants	Transport and communications	Financial activities	Real estate operations, lease and services	Public administration and military security, etc.	Education	Health care and social services	Other utilities, social and personal services
Southern latitudinal zone																
Amur Region	100 100	5.2 (10.1) [–4.9]	0.0 (0.0) [0.0]	11.6 (4.6) [+7.0]	4.6 (5.6) [–1.0]	7.1 (10.7) [–3.6]	7.9 (10.5) [–2.6]	12.0 (13.3) [+1.3]	1.0 (1.0) [0.0]	21.7 (25.2) [–3.5]	0.2 (0.1) [+0.1]	4.9 (2.9) [+2.0]	10.3 (5.1) [+5.2]	5.9 (4.5) [+1.4]	6.3 (5.4) [+0.9]	1.3 (1.0) [+0.3]
Jewish Autonomous Region	100 100	6.5 (14.5) [–8.0]	0.0 (0.0) [0.0]	0.8 (0.6) [+0.2]	6.0 (9.6) [–3.6]	5.2 (1.8) [+3.4]	13.5 (8.8) [+4.7]	9.8 (13.4) [–3.6]	1.2 (0.9) [+0.3]	17.4 (28.5) [–11.1]	0.2 (0.0) [+0.2]	6.8 (3.1) [+3.7]	16.4 (6.4) [+10.0]	5.3 (5.1) [+0.2]	8.7 (5.6) [+3.1]	2.2 (1.7) [+0.5]
Khabarovsk Krai	100 100	4.4 (8.6) [–4.2]	1.4 (2.1) [–0.7]	5.7 (5.7) [0.0]	7.8 (17.3) [–9.5]	4.9 (5.1) [–0.2]	6.9 (4.9) [+2.0]	14.0 (11.3) [+2.7]	1.1 (0.9) [+0.2]	21.2 (17.8) [+3.4]	0.3 (0.3) [0.0]	8.6 (9.7) [–1.1]	10.8 (5.3) [+5.5]	5.2 (4.8) [–0.4]	6.0 (4.7) [+1.3]	1.7 (1.5) [+0.2]
Primorsky Krai	100 100	4.2 (5.1) [–0.9]	4.2 (8.3) [–4.1]	1.0 (1.4) [–0.4]	9.0 (10.0) [–1.0]	3.8 (5.8) [–2.0]	5.9 (4.6) [+1.3]	18.8 (20.6) [–1.8]	1.5 (1.3) [+0.2]	20.5 (20.5) [0.0]	0.4 (0.8) [–0.4]	10.4 (6.8) [+3.8]	9.4 (5.1) [+4.3]	3.9 (4.1) [–0.2]	5.3 (4.3) [+1.0]	1.7 (1.3) [+0.4]
Sakhalin Region	100 100	0.9 (2.2) [–1.3]	2.5 (4.7) [–2.2]	61.1 (17.0) [+44.1]	3.7 (9.6) [–5.9]	1.2 (3.1) [–1.9]	6.2 (28.7) [–22.5]	4.7 (9.9) [–5.2]	0.5 (0.8) [–0.3]	4.3 (8.0) [–3.7]	0.1 (0.1) [0.0]	5.8 (5.3) [+0.5]	4.2 (3.9) [+0.3]	1.6 (2.4) [–0.8]	2.5 (3.5) [–1.0]	0.7 (0.8) [–0.1]

[*] Otraslevaya struktura valovoy dobavlennoy stoimosti proizvedennoy v subyektakh Rossiyskoy Federatsii v 2013 g. [The sectoral structure of the gross value added produced in the constituent entities of the Russian Federation in 2013]. Retrieved from: http://www.gks.ru/free_doc/new_site/vvp/tab-vrp2.htm (date of access: June 3, 2015); Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2015. Stat. sb. [Russian regions. Socio-economic indicators. 2015. Statistical Book]. (2015). Moscow: Rosstat, 1266.

Note: Numbers without brackets are the figures for 2013. Numbers in round brackets are the figures for 2004. Numbers in square brackets are the changes in the share of activity type for 2004–2013, where a "plus" sign means an increase in the share and a "minus" sign means the decline in the share.

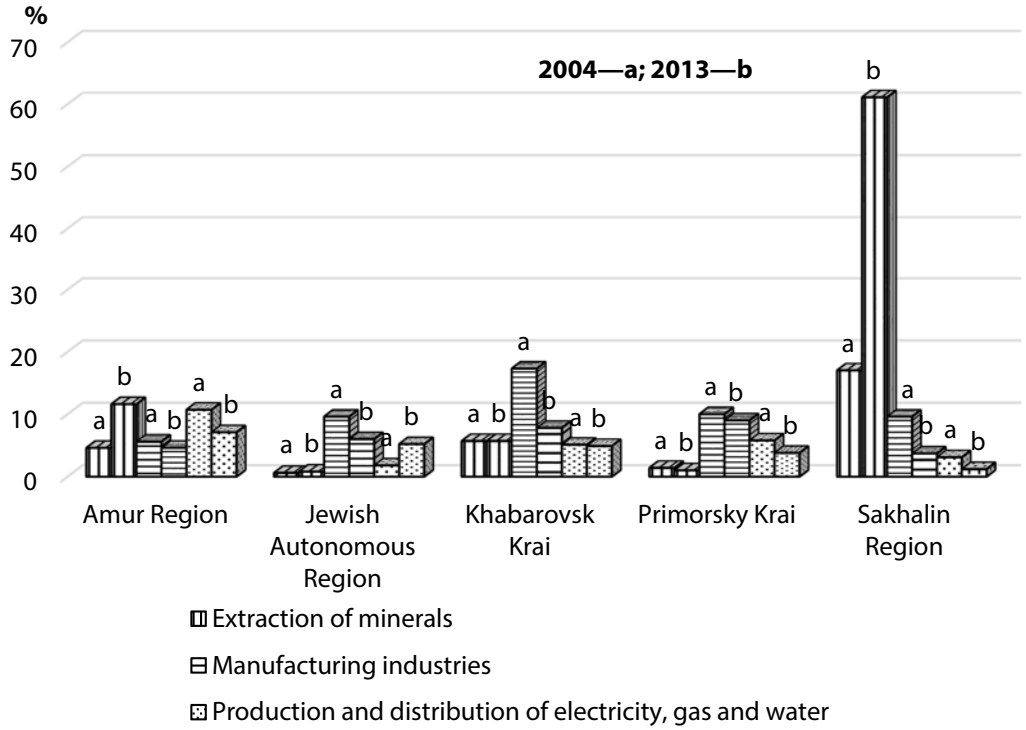

Fig. 3. *The changes of industrial production in the southern latitudinal zone of Pacific Russia (Amur Region, Jewish Autonomous Region, Khabarovsk Krai, Primorsky Krai, Sakhalin Region) in 2004–2013, current prices, % of total*

from 6.4 to 31.3 %). In the Republic of Sakha (Yakutia), the share of extraction of minerals increased by 3.6 %. Both constituent entities (the Republic of Sakha and Chukotka Autonomous District) experienced a significant decline in the share of manufacturing industries in the gross value added. Also, there was an increase in the share of produced electricity, gas and water.

In Magadan Region, we have seen a significant decline of the share of industrial production in the structure of gross value added (for example, the share of the extraction of minerals decreased from 31.9 % to 17.4 %, the share of manufacturing industries — from 6.3 % to 2.5 %, and the production and distribution of electricity, gas and water — from 12.2 % to 9.4 %). A similar situation is emerging in the industrial sector of Kamchatka Krai.

In the constituent entities of the southern latitudinal zone of Pacific Russia, a particular characteristic is their relatively low share of economic activities related to industrial production (except for Sakhalin Region). This markedly differentiates the constituent entities of southern zone from the constituent entities of northern zone, where we see a high share of industrial sector (primarily, the extraction of minerals) in the gross value added. The southern zone experienced a greater development of such types of economic activities as transport and communications, construction, agriculture, services, including trade, which all belong to auxiliary types of activities.

In 2004–2013, the most marked changes took place in the industrial structure of Sakhalin Region and Amur Region, which is related to the increase in the share of extraction of minerals in the structure of gross value added of these constituent entities. For Sakhalin Region, this is associated with the increased extraction of oil and natural gas, and in Amur Region — with the development of the metallurgical complex (extraction of non-ferrous metal ores) (Fig. 3).

In 2004–2013, all constituent entities of the southern zone experienced a decline of the share of manufacturing industries in the structure of their gross value added, as well as in the share of production and distribution of electricity, gas and water (except for Jewish Autonomous Region, where the share of production and distribution of electricity increased substantially).

The combinations of diagrams in Fig. 2 and 3 can be viewed as latitudinal profiles which, in a generalized way, reflect the main units of territorial structures of the economy in the northern and southern latitudinal zones, as well as the changes in these structural units. This allows to see clearly a great similarity of structural units in the constituent entities of individual zones. At the same time, in general, the latitudinal profiles of northern and southern zones differ substantially.

Translation

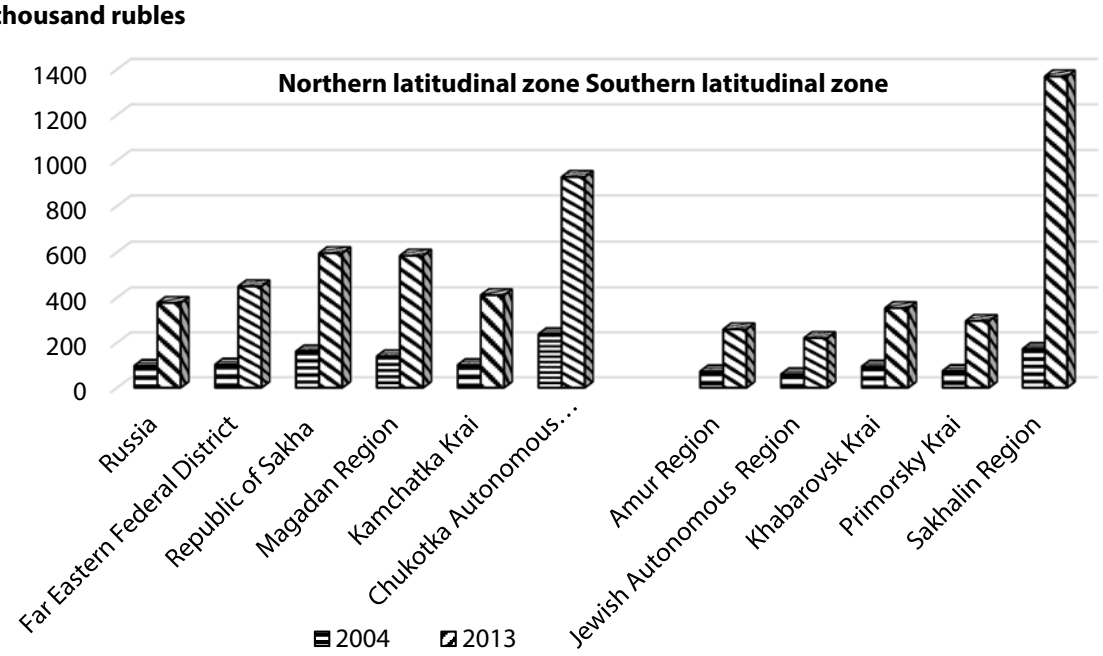

Fig. 4. *The latitudinal profiles of Gross Regional Product per capita and its dynamics in the constituent entities of Pacific Russia (thousand rubles) (from: Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2007: stat. sb. [Russian regions. Socio-economic indicators. 2007: Statistical Book]. (2007). Moscow: Rosstat, 900.; Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2009: stat. sb. [Russian regions. Socio-economic indicators. 2009: Statistical Book]. (2009). Moscow: Rosstat, 990; Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2014: stat. sb. [Russian Regions. Socio-economic indicators. 2014: Statistical Book]. (2014). Moscow: Rosstat., 900; Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2015: stat. sb. [Russian regions Socio-economic indicators. 2015: Statistical Book]. (2015). Moscow: Rosstat, 1266.)*

On the whole, during 2004–2013, for Pacific Russia, the positive values of changes in the share of activity types (increase) were typical for the extraction of minerals, public administration, health care and utilities. Other types of activities experienced a decline of their share in the structure of gross value added. The most marked increase in the share of extraction of minerals was seen in Sakhalin Region, Chukotka Autonomous District, Amur Region, and the Republic of Sakha (Yakutia). All constituent entities of Pacific Russia experienced a decline of the share of manufacturing industries in the structure of value added. A slight increase in the share of production and distribution of electricity, gas and water was seen in the Republic of Sakha (Yakutia), Chukotka Autonomous District and Jewish Autonomous Region. The share of transport and communications increased in Khabarovsk Krai, Republic of Sakha (Yakutia), and Kamchatka Krai. The structure of Sakhalin Region is marked by a significant decline in the share of construction, although the structure of other constituent entities of Pacific Russia in the same period experienced a slight increase in the share of this type of activities.

It should be noted that, while the economic capacity of the constituent entities of Pacific Russia markedly decreases from south to north, the level of economic efficiency, expressed in the production of Gross Regional Product per capita, on the contrary, increases in the northern constituent entities and decreases in the southern constituent entities of Pacific Russia (Fig. 4). It should be noted that, since 2004, Sakhalin Region, Chukotka Autonomous District, Magadan Region, and the Republic of Sakha have been leading in terms of this efficiency indicator. In 2013, the greatest value of this indicator was reported in Sakhalin Region, next—in the northern latitudinal zone—come Chukotka Autonomous District, Republic of Sakha (Yakutia) and Magadan Region (1,369.0 thousand rubles, 927.4 thousand rubles, 595 thousand rubles, and 584.7 thousand rubles, respectively), in the sectoral structure of which a significant role is played by export-oriented extractive industries (production of oil and natural gas, extraction of precious metal ores and diamonds). The lowest values have been reported in Jewish Autonomous Region, Primorsky Krai and Khabarovsk Krai, Amur Region (220.8 thousand rubles, 296.2 thousand rubles, 353.2 thousand rubles, 259.4 thousand rubles, respectively); in the structure of their economies an important role is played by manufacturing industries and transport services. It should be noted that, for this indicator, the differences between the constituent entities substantially increased in 2013. The efficiency gains were primarily affected by structural transformations associated with an increase in the share of extraction of minerals.

Translation

Table 4

The balanced financial result (profit minus loss) of organizations in the constituent entities of Pacific Russia, million rubles

Constituent entities of latitudinal zones	2005	2010	2013	2014	Difference (2014–2005)
Northern zone					
Republic of Sakha (Yakutia)	33,609	34,270	47,701	5,117	–28,492
Magadan Region	660	9,839	7,045	–15,711	–16,371
Kamchatka Krai	1,143	3,805	–1,315	–15,580	–16,723
Chukotka Autonomous District	17,350	18,854	8,697	12,160	–5,190
Southern zone					
Amur Region	1,407	20,725	5,990	7,718	+6,311
Jewish Autonomous Region	63	–172	–1,121	–6,907	–6,970
Khabarovsk Krai	3,911	6,860	5,231	–9,385	–13,296
Primorsky Krai	11,242	27,411	14,853	–193	–11,453
Sakhalin Region	1,415	9,542	21,701	–14,027	–15,442

Note: "Minus" sign means financial loss.

To assess the effectiveness of structural transformations in the constituent entities of Pacific Russia, we also used the data on balanced financial result (profit minus loss) of organizations and their changes from 2004 to 2013 (Table 4).

The northern zone has a stable positive balanced financial result of enterprises and organizations for 2005–2014. The negative financial result (loss) in the economy of Kamchatka Krai was reported in 2013, and in Magadan Region — in 2014. It should be noted that, in both latitudinal profiles, the most effective financial results are demonstrated by the economies of the Republic of Sakha (Yakutia) and Chukotka Autonomous District. However, in 2014, the profits in the economy of the Republic of Sakha (Yakutia) have declined substantially. The positive financial result in the economies of the Republic of Sakha (Yakutia) and Chukotka Autonomous District is largely associated with the predominance of such type of economic activities as the extraction of minerals (precious stones, ores of precious and non-ferrous metals) in their sectoral structure of gross value added.

In the southern zone, the most stable balanced financial result is shown by the economy of Amur Region, even though the profit substantially declined compared to 2010. Stable profit gains were reported in Sakhalin Region until 2014 (in 2013, the profit more than doubled compared to 2010). In Primorsky Krai and Khabarovsky Krai (in Primorsky Krai, by almost 2 times, in Amur Region, by 3 times). The most difficult situation developed in the economy of Jewish Autonomous Region, where the financial loss was reported in 2010, 2013 and 2014.

The structure of the Gross Regional Product in Sakhalin Region is marked by a high share of extractive industries associated with the production of oil and natural gas. The negative financial result reported in the economy of Sakhalin Region for 2014 was associated with the drop in the global fuel prices (oil and gas).

The structural transformations of the economy in the northern latitudinal zone made a different impact on changes in the overall financial results of organizations. In Chukotka Autonomous District, a substantial gain in the share of extractive industries and some changes in other types of activities were accompanied by the increase of total profit. In Yakutia, there was a significant drop in profit against a slight increase in the share of extractive industries and changes in other types of activities. The decline in shares of the extraction of minerals and manufacturing industries in Magadan Region and Kamchatka Krai was also accompanied by a decrease in total profit (for 2010–2013).

The economy of the southern latitudinal zone was characterized by a substantial drop in the share of manufacturing industries, which was also reflected in the decline of profits. An exception is Sakhalin Region, where the high growth of the production of oil and gas was accompanied by significant profit gains.

The analysis of dynamics in the labor productivity index also shows different production efficiency in the constituent entities of Pacific Russia compared to the Russian Federation as a whole (Fig. 5). In 2006, the labor productivity index in the constituent entities of Pacific Russia was above the national average only in the southern zone (Sakhalin Region).

Translation

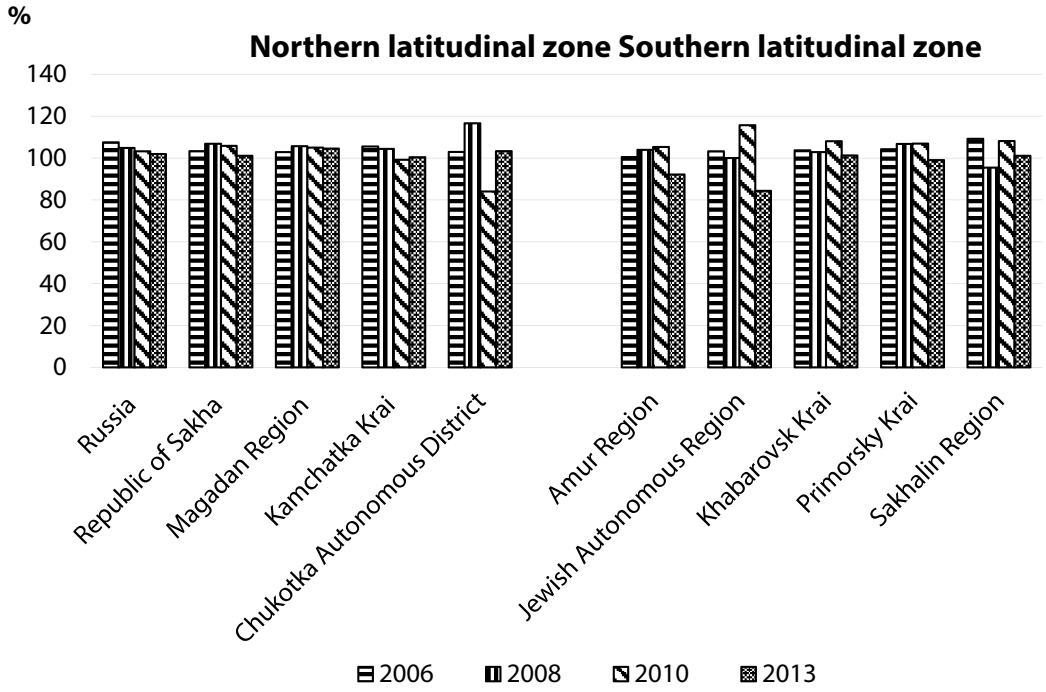

Fig. 5. *The latitudinal profiles of the labor productivity index for the constituent entities of Pacific Russia (% YoY)* and their changes*

(* Indeks proizvoditelnosti truda po subyektam RF [Labor Productivity Index in the constituent entities of the Russian Federation]. Retrieved from: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/efficiency/# (date of access: August 18, 2015))

In 2008, the constituent entities in the northern zone of Pacific Russia (Republic of Sakha (Yakutia) and Chukotka Autonomous District) demonstrated the labor productivity growth that was above the average for the Russian Federation (104.8 %), 106.8 % and 116.6 %, respectively. However, 2010 was marked by the decline in labor productivity index in the Republic of Sakha down to 101.7 %, and in Chukotka Autonomous District—down to 84.0 % (the average value for the index in Russia was 103.2 %). In 2013, the labor productivity index in Chukotka Autonomous District (103.3 %) was slightly higher than the average value in Russia (101.9 %) and, in the Republic of Sakha (101.1 %), it was close to the national average. In 2008, the labor productivity index for Magadan Region (105.7) and Kamchatka Krai (104.4) was at the level of national average (104.8 %). In 2010 and 2013, this indicator was also above the national average in Magadan Region (105.0 % and 104.5 %, respectively), while in Kamchatka Krai, it was only 99.2 % in 2010 and 100.4 % in 2013.

In the southern zone, the labor productivity index of several constituent entities of Pacific Russia in 2013 was substantially below the national average—Primorsky Krai (99.0 %), Amur Region (92.1), Jewish Autonomous Region (84.3 %). In Khabarovsk Krai and Sakhalin Region, the indicator was close to the national average (101.2 and 101.1 %, respectively).

On the whole, the constituent entities of northern and southern (except for Sakhalin Region) zones showed a decline in labor productivity growth. To some extent, this was, apparently, aggravated by corresponding structural transformations in their economies.

The substantial fluctuations of labor productivity index are largely dependent on the economic situation that is developing in the leading economic sectors of the constituent entities of Pacific Russia, for example, the extraction of minerals for the constituent entities of the northern zone or manufacturing industries, transport, services for the constituent entities of the southern zone.

Therefore, the structural transformations of the economy in the northern latitudinal zone (the increase in the share of the extraction of minerals and decline of manufacturing industries) did not result in an overall increase in labor productivity. The decline in the share of manufacturing industries in the southern zone was accompanied by a slight overall decrease in labor productivity, except for Sakhalin Region, which showed a slight gain.

With a general pattern towards the growth in the variety of activity types existing in the southern constituent entities of Pacific Russia, we also observe some similarities in their production specialization. For example, the industrial production plays a leading role in all constituent entities. The industrial production employs more than 15 % of the total employed population in Pacific Russia.

Translation

Table 5

The average per capita income in the constituent entities of Pacific Russia* (rubles/month)

Constituent entities of latitudinal zones	2004	Rank of the constituent entity in the Russian Federation, 2004	2013	Rank of the constituent entity in the Russian Federation, 2013	2014	Rank of the constituent entity in the Russian Federation, 2014
Russian Federation	6,383	—	25,928	—	27,766	
Pacific Russia	7,036	3	28,929	3	31,974	2
Northern zone						
Republic of Sakha (Yakutia)	9,633	9	31,528	11	34,205	11
Magadan Region	9,486	11	42,463	5	45,846	5
Kamchatka Krai	8,346	16	35,371	8	37,030	8
Chukotka Autonomous District	15,042	4	52,695	4	57,310	3
Southern zone						
Amur Region	4,695	40	24,671	23	26,765	22
Jewish Autonomous Region	4,975	35	20,417	45	21,935	49
Khabarovsk Krai	7,552	17	29,382	14	31,703	14
Primorsky Krai	5,405	29	24,343	25	28,340	18
Sakhalin Region	9,488	10	39,971	6	44,690	6

* Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2014. Stat. sb. [Russian regions. Socio-economic indicators. 2015: Statistical Book]. (2015). Moscow: Rosstat, 1266.

In the constituent entities of northern zone, the share of industrial production in the structure of the employed population is higher than the average for Pacific Russia. In the southern constituent entities, the service sector accounts for the main share of the employed population[1].

There is a following generalized dependence of the regional population income on the population employment structure and sectoral structure of production [24–26]: 1) the amount of per capita income in the region, first, depends inversely on the share of agriculture in the Gross Regional Product and in the number of employed population; 2) depends directly on the share of mining and manufacturing industries; 3) has a direct, but weakly expressed, dependence on the share of service industries. The difference in the structure of value added in the constituent entities of Pacific Russia is, to some extent, also related to the average per capita income. We have identified the following dependencies between average per capita income and the structure of gross value added and sectoral structure of employment:

1. The average per capita income in the constituent entities of Pacific Russia depends inversely on the share of agriculture in the gross value added of the constituent entity. In 2013, the highest share of agriculture was reported in the gross value added of Jewish Autonomous Region (6.5 %), and Amur Region (5.2 %). For Pacific Russia as a whole, the average value of this indicator reached 3.0 % in 2013.

At the same time, in 2004–2014, these constituent entities never were the leaders of the Russian Federation in terms of their average per capita income. For example, in 2013, Jewish Autonomous Region ranked 45th among the constituent entities of the Russian Federation (2014, 49th), Amur Region ranked 23rd (2014, 22nd) (Table 5).

2. There is a direct dependence between the average per capita income in the constituent entity and the share of industrial production in gross value added. In 2004–2014, Chukotka Autonomous District, Sakhalin Region, Magadan Region, and the Republic of Sakha (Yakutia) held the leading positions in the Russian Federation in terms of their average per capita income. These constituent entities of Pacific Russia have a high share of industrial production in the sectoral structure of their gross value added. For example, in 2013, the extraction of minerals, manufacturing industries, production and distribution of electricity, gas and water accounted for 66.0 % of gross value added in Sakhalin Region, 48.5 % in the Republic of Sakha, 46.1 % in the Chukotka Autonomous District, and 29.3 % in Magadan Region (Table 3). These constituent entities are also characterized by the low share of agriculture in the

[1] Regiony Rossii. Sotsialno-ekonomicheskie pokazateli. 2014. Stat. sb. [Russian regions. Socio-economic indicators. 2014: Statistical Book]. (2014). Moscow: Rosstat, 900.

sectoral structure of gross value added. For example, in 2013, it was 1.9 % in the Chukotka Autonomous District, 0.9 % in Sakhalin Region, 1.4 % in Magadan Region, 2.3 % in the Sakha Republic.

3. There is a weakly expressed direct dependence between the relatively high average per capita income and significant share of service industries in the gross value added of the constituent entities in Pacific Russia. For example, in 2013, the share of services (wholesale and retail trade, repair of motor vehicles, motorcycles, transport and communications, household products and personal goods; hotels and restaurants; financial activities, real estate operations, lease and services; social insurance; education; health care and social services; other utilities, social and personal services) accounted for 62.5 % of the gross value added in Primorsky Krai and 58.1 % in Khabarovsk Krai. At the same time, in 2013, Primorsky Krai and Khabarovsk Krai ranked 25th and 14th among the constituent entities of the Russian Federation in terms of average per capita income (in 2014, Primorsky Krai ranked 18th and Khabarovsk Krai — 14th).

The positive trends in economic restructuring of the constituent entities in Pacific Russia, which lead to higher incomes of the employed population, are primarily associated with the growing shares of such types of economic activities as the industrial production and services in the structure of employed population and production of gross value added.

Overall, in Russia, the period of 2005–2013 was marked by declining share of industrial production (from 21.7 % of all employed in the economy in 2005 to 19.3 % in 2013) in the structure of employed population. A similar situation developed in Pacific Russia, where the share of people employed in industrial production decreased from 17.5 % in 2005 to 16.4 % in 2013. In addition, the constituent entities of Pacific Russia also experienced a decrease in the share of population employed in the manufacturing industries (from 9.6 % in 2005 to 8.4 % in 2013). In the period under review, the constituent entities of Pacific Russia, where the share of population employed in manufacturing industries was traditionally high, were also marked by the decline in the number of people employed in this type of economic activities. For example, in Primorsky Krai, it dropped from 11.5 % in 2005 to 10.6 % in 2013, in Khabarovsk Krai, from 12.5 % to 10.7 %, in Jewish Autonomous Region, from 11.7 % to 9.9 %.

In the northern zone of Pacific Russia, the constituent entities have the highest level of per capita income (in 2013, the Republic of Sakha (Yakutia) ranked 3rd in Russia, Chukotka Autonomous District — 4th, Magadan Region — 5th, and Kamchatka Krai — 8th), which can be explained by their high share of industrial production (extraction of minerals) in the gross value added and the structure of employed population. An important role in achieving a high level of average per capita income is played by significant "Northern" wage bonuses applicable to these constituent entities of Russia.

The southern zone of Pacific Russia also has in place additional "Far Eastern" wage multipliers, but they are not as high as in the northern areas of Pacific Russia. The types of activities, that are better developed in the constituent entities across the southern zone of Pacific Russia (such as agriculture, education, health care, etc.) are "less profitable" which does not favor the growth of average per capita incomes either.

In general, both the level of employment and rising incomes of the population are associated with the increase in the share of extraction of minerals in the structure of the economy of the northern latitudinal zone. This can be primarily explained by a higher level of wages paid by the mining companies in northern conditions. The structural transformations of the economy in the southern latitudinal area did not result in a substantial increase in incomes of the population, although there was neither a noticeable reduction in such incomes. The incomes of the population increased substantially in the mining companies of Sakhalin Region following the higher production of oil and natural gas.

Conclusion

As we can see, the transformations of territorial structures of the economy, that occurred in the constituent entities of Pacific Russia over a 10-year period (2004–2014), were largely not accompanied by the growth in the share of manufacturing industries. Moreover, this is typical both for the northern zone and southern zone, which is more developed and differentiated in terms of its economic structure. On the contrary, the share of extractive industries was increasing at a slightly higher pace in the northern zone and less so in the southern zone (with the exception of Sakhalin Region).

The structural transformation associated with the higher share of extractive industries in general, lead to some increase in efficiency in the northern latitudinal zone, and to a lesser efficiency in the

southern zone. However, the general decline in the share of manufacturing industries and the industrial production as a whole has a greater impact on the decrease of efficiency.

In general, the ongoing structural changes in the economies of the constituent entities of Pacific Russia have not yet led to any substantial increase in the efficiency of the region. It continues to be oriented on the priority development of extractive industries, that are largely dependent on fluctuations of world commodity prices. In the northern latitudinal zone, the high costs of production and sales in the extractive types of economic activities, a relatively low labor productivity and poorly developed infrastructure cannot provide high living standards for the population. The insufficient development of manufacturing industries does not allow to shift the employed population to more efficient types of economic activities. In the southern zone, the development prospects are mainly associated with the modernization of manufacturing industries, development of logistical activities and formation of modern service industry.

In the second half of the 20th century, the rapid economic growth in Japan and newly industrialized countries of Southeast Asia was largely the result of substantial restructuring in the economy. Most of people in the Asia-Pacific region are employed in high-tech manufacturing industries and service sector [26]. Such restructuring of the economy allowed to substantially reduce the consumption of natural resources in the material production and increase the labor productivity in the industrial sectors.

The Pacific Russia has the premises for building a sufficiently robust system of inter-regional division of labor, where the extractive industries (given the uniqueness and wealth of natural resource potential on land and at sea) and the initial stages of the manufacturing industry activities can be located in the northern latitudinal zone, while the major manufacturing facilities and service sector can be located in the southern zone. This will lead to the formation of complete vertically integrated value chains, the territorial structures of which display successful forms of territorial organization of industrial production.

Acknowledgements

The article has been prepared with the support of the Russian Science Foundation Grant "Factors, mechanisms and types of structural transformation and modernization of territorial socio-economic systems in Pacific Russia" (№ 14–18–03185).

References

1. Baklanov, P. Ya (Ed.). (2012). *Tikhookeanskaya Rossiya: stranitsy proshlogo, nastoyashchego, budushchego [Pacific Russia: past, present, future].* Vladivostok: Dalnauka Publ., 406.

2. Baklanov, P. Ya. (2007). *Territorialnyye struktury khozyaystva v regionalnom upravlenii [The territorial structures of the economy in regional administration].* Moscow: Nauka Publ., 239.

3. Animitsa, E. G., Novikova, N. V. & Sukhikh, V. A. (2008). Dinamika, izmenenie proportsiy i soderzhaniya strukturnykh transformatsiy v ekonomike Permskogo kraya [Dynamics, changing proportions and substance of structural transformations in the economy of Perm Krai]. *Ekonomika regiona [Economy of region], 2,* 99–115.

4. Bochko, V. S. (2015). Uskoryayushchie i sderzhivayushchie faktory skoordinirovannogo i sbalansirovannogo razvitiya regionov [Factors accelerating and constraining coordinated and balanced development of regions]. *Ekonomika regiona [Economy of region], 1(41),* 39–52.

5. Granberg, A. G. (1983). Issledovanie ekonomicheskogo razvitiya Sibiri v razreze shirotnykh zon i mezoregionov [Study of economic development of Siberia in the context of latitudinal zones and mezo-regions]. *Izvestiya Sibirskogo otdeleniya Akademii nauk SSS [Proceedings of the Siberian Branch of the USSR Academy of Sciences], 3(11),* 59–67. (Series: Societal Sciences).

6. Granberg, A. G. (Ed.) (1985). *Ekonomika Sibiri v razreze shirotnykh zon [The economy of Siberia in a context of latitudinal zones].* Novosibirsk: Nauka Publ., 256.

7. Lamin, V. A., Malov, V. Yu et al. (Eds). (2012). *Aziatskaya chast Rossii: modelirovanie ekonomicheskogo razvitiya v kontekste opyta istorii [The Asian part of Russia: modeling the economic development in the context of historical experience].* Novosibirsk: Izd-vo SO RAN Publ., 462. (Integratsionnye proekty SO RAN; Vyp. 34 [Integration Projects of SB of RAS; Issue 34]).

8. Baklanov, P. Ya. & Moshkov, A. V. (2015). Prostranstvennaya differentsiatsiya struktury ekonomiki regionov arkticheskoy zony Rossii [Spatial differentiation of economic structure in the regions of the Russian Arctic zone]. *Ekonomika regiona [Economy of region], 1(41),* 53–63.

9. Baklanov, P. Ya. & Romanov, M. T. (Eds). (2012). *Geosistemy Dalnego Vostoka Rossii na rubezhe XX–XXI vekov. T. III. Territorialnyye sotsialno-ekonomicheskie struktury [Geosystems of the Russian Far East at the turn of the 21st century. V. III. Territorial socio-economic structures].* Vladivostok: Dalnauka Publ., 364.

10. Baklanov, P., Romanov, M., Karakin, V. & Lankin, A. (2015). Projects of Development of Transcontinental Transport-Economic Belts in Northern Eurasia. *Journal of Resources and Ecology, 6(2),* 110–113.

11. Kosmachev, K. P. (1974). *Pionernoye osvoenie taygi. Ekonomiko-geograficheskie problemy [Pioneering development of Taiga. Economic and geographical problems].* Novosibirsk: Nauka Publ., 142.

Translation

12. Pilyasov, A. N., Kuleshov, V. V. & Seliverstov, V. E. (2013). Arkticheskaya politika v epokhu globalnoy nestabilnosti: opyt i uroki dlya Rossii [Arctic policy in the era of global instability: experience and lessons for Russia]. *Region: ekonomika i sotsiologiya [Region: economics and sociology], 4,* 61–94.

13. Prisyazhnyy, M. Yu. (2010). Problemy sovershenstvovaniya form osvoeniya regionov Severa v perekhodnyy period i na perspektivu [Problems in the improvement of forms for the development of Northern Regions in the transition period and in the future]. *Regionalnyye problemy preobrazovaniya ekonomiki [The regional problems of economic transformation], 3,* 42–46.

14. Romanov, M. T. (2009). *Territorialnaya organizatsiya khozyaystva slaboosvoyennykh regionov Rossii [Territorial organization of the economy in poorly developed regions of Russia].* Vladivostok: Dalnauka Publ., 318.

15. Tatarkin, A. I. (2005). Sotsialno-ekonomicheskiy status sredinnogo regiona Rossii [Socio-economic status of the median Russian region]. *Prostranstvennaya ekonomika [Spatial economics], 4,* 21–39.

16. Tatarkin, A. I., Romanova, O. A., Chenyonova, R. I. & Makarova, I. V. (2012). *Regionalnaya promyshlennaya politika: ot makroekonomicheskikh usloviy formirovaniya k novym institutam razvitiya [Regional industrial policy: from macro-economic conditions to new institutions].* Ekaterinburg: Institute of Economics of UB of RAS Publ., 360.

17. Minakir, P. A. (2004). *Ekonomicheskaya integratsiya: prostranstvennyy aspekt [Economic integration: spatial aspect].* Ros. akad. nauk, Dalnevostochnoye otd-nie, In-t ekon. issledovaniy [Russian Academy of Sciences, Far Eastern Branch, Institute of Economic Studies]. Moscow: Ekonomika Publ., 352.

18. Dongm S., Li, Z., Li, Y., Shi, G., Yu, H., Wang, J., Li, J., Mao, Q. & Huang, Y. (2015). Resources, Environment and Economic Patterns and Sustainable Development Modes of the Silk Road Economic Belt. *Journal of Resources and Ecology, 6(2),* 65–72.

19. Newell, J. (2004). *The Russian Far East.A reference guide for conservation and development.* 2nd ed. California: Daniel & Daniel Publishers, Inc., 468.

20. Akaha, T. (Ed.). (1997). *Politics and Economics in the Russian Far East. Changing Ties with Asia-Pacific.* London — N.Y.: M.E. Sharpe, 233.

21. Kotkin, S. & Wollf, D. (Eds) (1995). *Rediscovering Russia in Asia. Siberia and the Russian Far East.* London — N.Y.: M.E. Sharpe, 356.

22. Allen, L. C. & Koh N. (1997, July/August). Structural Reform of the Mining Industry in Asia and the Pacific Region. *Asian Journal of Mining,* 28–42.

23. Haruyama, S. & Shiraiwa, T. (Eds). (2015). *Environmental Change and the Social Response in the Amur River Basin.* Tokyo; Heidelberg; New York: Springer, 262.

24. Kuznets, S. (1973, June). Modern Economic Growth: Findings and Reflections. *American Economic Review, 63(3),* 247–258.

25. Kuznets, S. (1968). *Toward a Theory of Economic Growth.* New York: W.W. Norton, 122.

26. Savaley, V. V. & Filicheva, T. P. (2002). *Regionalnaya ekonomika i finansy [Regional economy and finance].* Vladivostok: VGUES Publ., 196.

Authors

Peter Yakovlevich Baklanov — Doctor of Geography, Member of RAS, Head of the Institute, Pacific Institute of Geography of the Far East Branch of RAS (7, Radio St., Vladivostok, Primorsky Krai, 690041, Russian Federation; e-mail: pbaklanov@tig.dvo.ru).

Anatoly Vladimirovich Moshkov — Doctor of Geography, Professor, Head of Laboratory, Pacific Institute of Geography of the Far East Branch of RAS (7, Radio St., Vladivostok, Primorsky Krai, 690041, Russian Federation; e-mail: mavr@tig.dvo.ru).