

Russian regions export specialization in the new industrialization process

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Abstract— The article reveals topical issues of export specialization of regions in context of modern technologies. The interaction of the main indicators and changes in the degree of diversification of the commodity export basket was investigated. The changes in the structure of Russian export in the period 2006-2016 was analyzed in 76 regions. The results of the study showed that the unemployment rate in Russia will not change. Conclusions about the structural dynamics of the export basket of remote regions are made. The dependence of the change in the share of products of the fuel and energy complex in the export structure on oil prices was analyzed. The article substantiates the need for a detailed study of the dynamics of diversification of individual product groups.

Keywords— *export; commodity export specialization; regional level assessment.*

I. INTRODUCTION

The transition to a new level of industrialization of the Russian economy requires close attention to the structure of foreign economic turnover. From the position of transferring the country's economy to highly efficient technologies, the problem of diversification of the commodity export basket and state regulation of this process becomes important. In a situation of complicating Russia's position in the world, the imposition of sanctions, economic pressure, price volatility on the main resources exported, the export structure changing problem is reaching a strategic level.

II. LITERATURE REVIEW

There is a discussion in academic circles about the impact of the export diversification level on the country economy. Supporters of the classical and neoclassical theory speak about the benefits of deep economy specialization, which can ensure the growth of national income [1, p. 6]. Basing on the study of countries that exploit natural resources,

this dependence has been confirmed. Studies were conducted in Sweden and Finland [2, p. 30], Chile [3, p.21], EU countries [4, p.351]. Further studies by P. Krugman [5, 6], G. Grossman and E. Helmpan [7] confirmed the thesis that the success of foreign trade activities is determined by the relative country production stocks factors. In his work on the competitiveness of economies, M. Porter [8] derived a pattern related to the fact that a country receives the maximum effect from foreign economic activity, if it is based on the industry in which it has maximum competitive advantages. These works were the source of the idea about positive export specialization impact on the countries' economies development.

However, the research on the positive national export baskets effects diversification developed as well. The hypothesis that the conditions of the world economy change with time and countries producing final products start to gain main benefits from international trade were expressed in the new theory of economic development in R. Prebisch's work [9, p.45]. In his opinion, the raw material economies importing these products inevitably and gradually worsen their situation. At the same time, within the framework of the "big push" theory, H. Singer clarified that export diversification is possible due to import substitution and the development of own production, which is an endogenous factor in the development of the national economy [10, p. 295].

Ideas for the development of export diversification are also found in the theory of the "resource curse" [11], as well as the economic growth portfolio concept [12, p. 720], in which scientists pay attention to the relationship between export diversification, development of the financial sector, on the one hand, and economic growth rates, on the other.

In the modern authors R.Hausmann [13, p.22], B.Eychengrina [14, p.80], K. Matsuyama [15, 16] works it is emphasized that there is the need not so much of export basket diversification, but the importance of shifting the export basket towards high-tech goods. These ideas were confirmed by surveys of raw materials markets conducted by the IMF during 1650-2012. [17, c. 21]. The analysis proves that a large share of technological exports in total exports reduces the likelihood of the economy falling into the trap of an average income.

Other studies indicate the relationship between the structure of exports and the level of development of the financial market [18, p. 20]. Under the conditions of underdevelopment of the financial market, the export structure is to be flexible, and in the case of a stable financial market, it is the opposite.

In the conditions of the development of technological productions, the task of mastering new sectors of the export space arises. So, in [19, p. 486] states that it is necessary to evaluate the costs and chances of establishing a new production expanding the export basket. The authors propose to first assess the export potential of the region, which will establish the cost and riskiness of export diversification. Thus, with the region's low potential, export diversification will be costly and risky. Therefore, such territories need to concentrate on increasing the technological level of goods already exported. As noted in [20], in regions with high export diversification potential, industrial policies should focus on creating the missing factors (such as technology, certification, infrastructure, etc.) necessary for the export of new final and intermediate goods. Thus, we can conclude that it is impossible to give unambiguous recommendations on the need to diversify the commodity export basket without taking into account the peculiarities of the region's development.

III. RESEARCH METHODOLOGY

To study the structure of export specialization, we used the data of official statistics on the structure of export by individual product groups, according to the TN VED TS. Figure 1 shows the data for 2005-2016. It should be noted that in the structure of Russian exports until 2013, there was a trend towards strengthening the monopoly of the products of the fuel and energy complex (from 61 to 70%). After the political and economic changes that took place in 2014 due to a sharp drop in oil prices, sanctions introduction, the implementation of an import substitution program, a decline in the significance of the fuel and energy complex in the export structure has been outlined. However, this trend coincides with the dynamics of oil prices at the same time, and, therefore, has no relationship with structural changes in the commodity production volume.

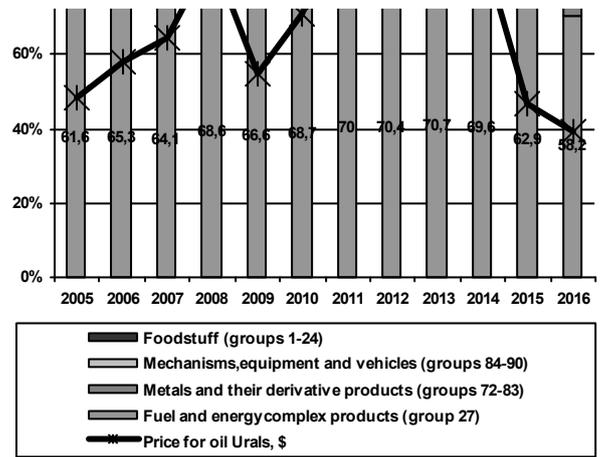


Fig. 1. The main commodity groups of Russian exports for 2000-2016 (compiled by the authors on the official statistic basis [21]).

It is also impossible to talk about a definite trend of reducing the role of the fuel and energy complex in the country's economy without assessing the level of diversification of exports of individual regions. Analyzing the issue in the present study and basing on the statistical data, the monopolistic component in the export of regions was determined, and the dynamics of structural changes have been studied. Note that for the data clear determination we have identified the periods when the most significant changes occurred in the Russian economy: 2005, 2013 and 2016. (the beginning and the end of the time series, as well as the year of the trend change), 2010 was additionally taken to smooth the data in a long time interval (this year is removed from the crisis of 2008 and is free from its influence). To assess the level of export diversification, a deeper assessment has been made in the context of individual products as well.

76 regions were included in the analysis of the regional level of export specialization. At the same time, the Khanty-Mansi Autonomous Territory and the Yamal-Nenets Autonomous District are considered as separate regions due to their serious influence on the export structure, as well as the Tyumen region without regard to autonomous districts. The Chechen Republic, the Republic of Khakassia, and the Republic of Ingushetia are excluded from the analysis due to the instability of statistical data in 2005. The Republic of Tyva, the Republic of Sakha (Yakutia) and the Chukotka Autonomous Region were excluded from the analysis due to the large share of exports belonging to "other" commodity groups, which did not allow to analyze the specialization of export of the territory. Export specialization of the region was noted if this or that product group took 50% or more in the total export volume.

In addition to analyzing the structure of regional exports, the Herfindahl-Hirschman specialization Index was calculated. The classical HHI index is calculated as the sum of the squares of the shares of territorial concentration and specialization and is measured in the range from 0 to 10,000

(when doing calculations in percent). In this study, the index is reduced to a dimension from 0 to 1. The highest index value, equals 1 which means that the region's exports are highly specialized and are associated with the production of one product group. On the contrary, if the index tends to zero, then there is a very high export diversification in the territory.

IV. PRACTICAL RELEVANCE, RESEARCH RESULTS

Table 1 summarizes the level of export specialization in Russian regions. Calculations show that the maximum level of export monopolization was achieved in 2010: 20 regions had specialization in the export of fuel and energy products, 66% of the regions had low diversification of the export commodity basket. By 2013, there has been a slight decline in the export monopoly. The number of regions with high specialization decreased from 50 to 39 (51%). However, it should be noted that the level of differentiation of export products decreased due to the regions specializing in the export of machinery and equipment, wood and pulp and paper products, but not the fuel and energy complex.

TABLE I. INDICATORS CHARACTERIZING EXPORT DIVERSIFICATION OF RUSSIAN REGIONS

year	Number of regions with export specialiaztion:							HHI
	raw material (groups1-24)	foodstuff, agricultural	fuel and energy complex products (groups27-40)	chemistry industry products (groups28-40)	wood and wood-and-pulp products (groups44-49)	metals and their derivative products (groups72-83)	mechanisms, equipment and vehicles	
2005	1	17	7	8	9	6	48	0,484
2010	3	20	6	5	9	7	50	0,501
2013	1	19	5	2	8	4	39	0,448
2016	7	14	6	3	6	2	38	0,407

In 2016, the diversification level was the highest for the entire observation period: HHI was 0.407, the number of specialized regions was 38. At the same time, the number of territories specializing in the export of agricultural products increased significantly from one to seven regions, and the number of regions specializing in fuel and energy products decreased to 14. However, with only two regions specializing in the export of machinery and equipment, against six in 2005. This indicates more of the general negative trends in Russian

exports, since our country needs diversification towards high-end and high-tech products.

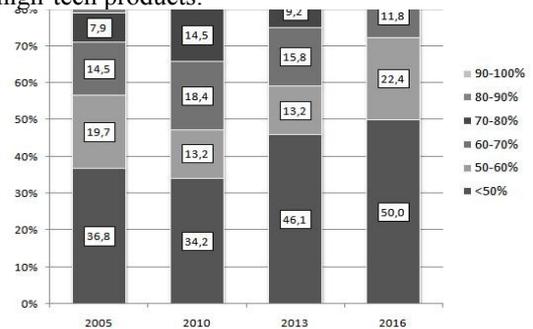


Fig 2. Regions rating by the level of export diversification, %.

For greater visibility of processes reflecting export diversification at the level of Russian regions, these regions were ranked by the level of specialization (Figure 2). The figure shows that in 2010, the most specialized nature of exports was observed, when more than a quarter of Russian regions had a specialization in one product group of more than 70%. In 2016, the share of such regions monopolized in exporting is 12 (16% of the total). At the same time, half of the regions do not have a distinct export specialization.

V. CONCLUSION

As it is observed from the analysis, the general indicators of regional diversification of exports do not give a complete answer to the question about the causes of the processes taking place in a particular territory. Therefore, it is necessary to conduct a more detailed study of export baskets structure at the level of each region, identify structural imbalances, and compare the data obtained with the possibility of choosing one or another method of regulation and stimulation of foreign economic activity. Earlier studies have led to the conclusion that it is impossible to develop a unified, equally effective public policy that is uniform for all regions. Each region requires its own unique approach.

Thus, in the regions with mono-specialization, such as, for example, Tyumen, the lack of a diversified economy and the resource base does not allow us to talk about possible export diversification, it will remain at the level of high monopolization, therefore, an effective regional development policy aimed at stimulating economic growth in the region should be aimed at maximizing the efficiency of the current economy structure and updating the material and technical production base.

In regions with high export specialization and well-established foreign economic relations, the positive impact of structural basket exports on the economic development of the territory needs continuation in development of the exported goods competitive advantages, while redirecting financial resources to the development of related high-tech goods. Regions that need to form sustainable foreign trade relations, such as, for example, the Kurgan Region, need substantial

state assistance for producers in promoting their products to the international market.

VI. THE RESULTS DISCUSSION

The results of the study did not give a definite answer, if there is a direct dependence of the commodity exports specialization degree and the economic development of a country or region. The discussion presented by the authors at the beginning of the article cites various opinions of competent authors. At the same time, in the course of the study, results were obtained on the basis of which one can speak of the dependence of the structure of the country's commodity exports on external political and economic factors. In particular, the direct dependence of the level of specialization in fuel and energy production on the change in oil prices was shown. Another factor affecting the structure of commodity exports is the import substitution program. The adoption of state decisions on food security and stimulating the development of agricultural enterprises led to an increase in the number of regions specializing in food exports. However, the trend for growth in exports of high-end and high-tech products, which is necessary for the Russian economy, has not been observed, whereas the shift in the structure of exports in this direction provides the necessary positive changes and stimulates economic growth.

In general, it should be emphasized that the problem of export specialization and diversification requires careful and deep study. The shift to new industrialization will be assisted by the shift in the specialization of regions towards high-performance products. Solving this problem requires the development of a specialized state policy in the field of commodity exports.

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