The Level of Production Localization of Automotive Industry Enterprises in Russia

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Abstract. Currently, in Russia there is a need for inclusion of Russian companies in the global value chains. The international alliances created in the automotive industry are able to influence this situation to a certain extent. Increasing the level of localization of such enterprises is a possible solution to the problem of production value chains formation. The aim of this research is to compare the level of production localization of automotive industry enterprises in Russia. The main research methods are comparison, analysis and synthesis of the obtained information. The authors analyzed the degree of localization of the largest automobile enterprises included in international alliances.

Keywords: localization, automotive industry, value chains, international alliances

1 Introduction

The issues of production localization seem to be the most promising both from the point of view of foreign enterprises and domestic producers. Most often, the production localization is of interest to companies seeking to expand their sales markets. To do this, they need to take into account principles of the industrial policy of the localization country. These principles regulate measures of the state support for the national economy, as well as restrictions and even prohibitions on the import of certain goods. This approach is the most widespread in the Russian automotive industry.

This aspect is particularly relevant from the point of view of the inclusion of Russian producers in global production chains. The main problems interfering scientific and technological development of the country are marked in the Strategy of Scientific and Technological Development of the Russian Federation (article 11) [1]. One of them is the difficulty of forming value-added production chains. The production localization of the automotive industry is able to solve this problem to a certain extent.

2 Methods

The methodological basis of the study is the theoretical analysis and systematization of conceptual approaches to the research issue: production localization within the value chains. In this study, the authors applied the following methods: theoretical (analysis and

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synthesis, generalization and systematization), which allowed to identify the basic characteristics of the production localization and its level in the considered chains); empirical methods (the study of the practical experience of the production localization in the Russian automotive industry); systematic analysis of data on foreign counterparties in the compared chains, as well as generalization and structuring of the factual data obtained from open sources about the current state of the considered enterprises.

3 Findings

Ford and Renault are examples of international automobile alliances localizing their production in Russia. They are the first foreign car companies that concluded agreements with the Ministry of Economic Development of the Russian Federation on the work in the industrial assembly mode. Later, the contracts were activated by Volkswagen (also producing Skoda and Audi models), tandem Hyundai–Kia, GM (Opel, Chevrolet, Cadillac), Nissan, Toyota, PSA Peugeot Citroën in partnership with Mitsubishi Motors. JSC "Avtotor", experimenting in the Kaliningrad special economic zone with Chinese companies, organized the assembly of BMW, some models of Hyundai–Kia and GM.

The requirements of the first mode of industrial assembly were relatively loyal. This was due to the fact that at that time the government's goal was to attract numerous assembly platforms to Russia. The first level of industrial assembly required the production of 25 thousand cars per year and localization of automotive components at the level of 30%.

In exchange, foreign companies received from Russia the right of preferential customs import of components for the assembly of machines (it was a rate from 0 to 5% instead of 15% on the average), these companies were also able to participate in state programs for sales support (recycling, trade-in, preferential car loans and leasing), as well as received numerous subsidies and some tax reliefs (partial or complete zeroing of property tax, etc.).

In 2012, the main industry regulator in Russia – MinPromTorg – came to the second stage of the assembly project. To maintain the previous benefits, foreign manufacturers were offered to create capacities for 300-350 thousand cars per year, and it was required to bring the localization up to 60%. In addition, the car companies had to build factories in Russia for the production of motors, transmissions, as well as to create research centers. This process is similar to the formation of the automotive industry in China.

To solve this task, foreign companies began to unite in industrial unions with Russian companies. So we got a tandem of Volkswagen and GAZ Group, the Franco-Japanese alliance Renault-Nissan united around PJSC "AVTOVAZ", which came under the control of Renault. The company JSC "SOLLERS" (controlling public corporation "UAZ") united with "Mazda" and "Toyota". Trucks and commercial vehicles of Daimler Group appeared at the enterprises of KAMAZ and GAZ [2]. For foreign manufacturers, it ensured compliance with the localization requirements, and for Russian automakers and their suppliers' – inclusion in global production chains, which correlates with the problem identified in the Strategy of Scientific and Technological Development of the Russian Federation, approved by the President Decree of December 1, 2016 № 642 [1].

According to the amendments of 07.06.2009 in the Decree of the Government of the Russian Federation of July 17, 2019 №719, for the established automobile alliances, there will be a point system of evaluation of technological operations, depending on the amount of added value. Points will be awarded both for the actually produced cars models and for obligations assumed for this model or product and fixed in the special investment contract. According to the presentation of the Ministry, to participate in public procurement and measures to stimulate demand for its cars, the manufacturer should score at least 2,000 points since 2019, at least 3,200 points since 2021, at least 4,500 points since 2023, and at

least 6,000 points since 2025. At the moment, the aim is not to increase the localization level, but only to obtain the required number of points [3].

Considering the level of production localization for 2018 in the largest alliances, we can see the following results:

- the localization level by Volkswagen production reaches 40%, while it is planned to increase it up to 75% in the next three years;
- the localization level of PSA Peugeot Citroën and Mitsubishi Motors is 35% and it is planned to increase it to 50%;
- the localization level of PJSC "AVTOVAZ" is about 50%. According to the development strategy of this the company, the localization level should grow up to 75%.

Next, we consider functioning of such large members of international alliances as PJSC "AVTOVAZ" and JSC "SOLLERS".

AVTOVAZ Group is a part of the Renault-Nissan-Mitsubishi Alliance and produces cars in the full production cycle for 4 brands: LADA, Renault, Nissan, Datsun.

After the procedure of tender purchase, Alliance Rostec Auto B.V. increased its stake in the share capital of PJSC "AVTOVAZ" up to 100%, the distribution of the shares in ARA BV: 67,61% – Renault, of 32.39% – State Corporation "Rostec".

PJSC "AVTOVAZ" actively cooperates with foreign partners. For example, Lada Xray is assembled from 1800 parts from 250 suppliers and is now localized by 50%. The main part of automotive components for Xray is now produced by foreign companies that have their own production in Russia. And in the future, the localization level of this car is planned to increase up to 75%.

It is known that the French company "Valeo" supplies radiators and heaters for Xray, "Faurecia" makes front seats, the German Bosch supplies a new hydraulic module ABS, "Eberspacher" produces the exhaust system. "Continental" supplies tires and washer system, "Brose" makes electric window regulators. Japanese "Takata" supplies a heated steering wheel as well as passenger airbags and a driver airbag module. AGS company provides the conveyor with side and rear windows, Turkish "Martur" makes rear seats, and another supplier of tires is the Italian "Pirelli".

Other imported components include door handles (U-Shin), mirrors with heating control unit (Magna), rear lights (Valeo), rear door lock (Kiekert) and seals (Standard Profile). Heated windshields are supplied by AGAR, Leoni and Tubor make ropes, joint venture Koito/Avtosvet makes headlights, and Russian Itelma supplies the ERA-GLONASS module. It can be concluded that the most high-tech components are imported for the use in the production process [4].

Engines, transmissions (including automatic ones), front suspension subframes, front and rear suspension arms, instrument panel, front and rear bumpers and radiator grille are produced by "AVTOVAZ" itself.

An important component of the company's activity is the interaction with customers. The company sells not only in Russia, but also for export (Belarus, Kazakhstan, Uzbekistan, Azerbaijan, Germany, Egypt, etc.).

Analyzing the revenue from sales for export, we can say that in 2018, compared to 2017, it has increased by more than 90% (2017 – 10,536 million rubles, 2018 – 20,030 million rubles).

At the same time, revenue from sales in Russia increased by 21.7% and was 271,743 million rubles in 2018. In 2018, PJSC "AVTOVAZ" had one main customer – the JSC "Renault Russia". The revenue received by JSC "Renault Russia" was 38,572 million rubles.

As for the place PJSC "AVTOVAZ" in the car production chain in general, the company is present in the three points of the car production chain:

- design (stage with high added value) is carried out by the engineering center of PJSC "AVTOVAZ";

- production of components (the stage with the added value above average): production and stamping of car bodies both for needs of PJSC "AVTOVAZ" and for other dependent enterprises (GM-AVTOVAZ); production of the engine and transmission is also carried out by the enterprise independently with help of the subsidiaries which are engaged in metal processing (for example, LLC LADA TOOL, LLC VMZ);

- final assembly (stage with average added value) – the last stage in which the company participates creating added value. After that, the cars are transferred to distributors for sale.

Like most manufacturers, PJSC "AVTOVAZ" is not a full-cycle enterprise. Therefore, we can see that the raw materials and materials for production are supplied by external suppliers, as well as a part of the components required for the car assembly.

The relationships with suppliers are based on supply contracts, according to which suppliers must produce and transfer raw materials or components for PJSC "AVTOVAZ" for further production at a previously agreed cost.

At the same time, PJSC "AVTOVAZ" acts as a consumer not in all cases, but sometimes as a manufacturer. Such examples can be the supply of car bodies for the needs of JSC "GM-AVTOVAZ" and the transfer of finished cars after the final assembly to distributors.

According to the reporting of PJSC "AVTOVAZ", the share of imported components in 2017 was about 34%, and in 2018 it increased by 36% and was about 46% (i.e. 107,752 million rubles). As for the exported products of PJSC "AVTOVAZ", it should be noted that in 2017 the share of exports was 4.5% of the total sales. In 2018, this share increased to 6.9%. Also in 2018, the share of exports increased by more than 90% compared to 2017 and amounted to 20,030 million rubles. We can conclude that the costs of imported components to a large extent exceed the amount of revenue received from the export of finished products (by more than 5 times) [5].

PJSC "SOLLERS" – the Russian company which is also the official representative of several car manufacturers with world names: Mazda, Toyota, Isuzu, SsangYong and Ford. The direct parent company of the Group is LLC "Erfix", its share in the share capital of PJSC "SOLLERS" is about 68%.

PJSC "SOLLERS" owns some production platforms in the Volga region, where there is the production of UAZ SUVs (UAZ), Japanese ISUZU trucks, as well as gasoline and diesel engines of ZMZ (ZMZ). In 2011, a joint venture Ford Sollers was launched, which is the exclusive manufacturer and distributor of a wide range of Ford cars in Russia.

In June 2019, PJSC "SOLLERS" bought 51% of the new joint venture from Ford for 75 million US dollars. In the new structure of Ford Sollers shareholders from Ford Motor Company and PJSC "SOLLERS" remain partners, while PJSC "SOLLERS" will own a share of 51% in the authorized capital of the joint venture.

PJSC "SOLLERS" has managed to bring the level of production localization up to 70%. Contracts have been signed with many Russian companies. Among them are Bor glass factory (glass), Vladimir "Avtopribor" (instrument cluster), Magneto (Kingisepp, wheels), Togliatti AKOM (battery), "Nizhnekamskshina". Also, Russian companies will supply noise isolators, seals, mirrors, etc.

About 30% of components are supplied by foreign companies. Among them are BASF Polyurethanes GmbH, who supplies engine cushions; Delphi Italia Automotive Systems r.l., producing air conditioning and heating; A. Raymond Jablonecs r.o. – plastic mounting brackets; UFI Filters S.p.A. – fine filters; LovatoGas – gas equipment; Eberspecher HYDRONIC – pre-heater; German Bosch – diesel system Common Rail CRS2-14.

It is clear that by analogy with PJSC “AVTOVAZ”, mainly high-tech components are purchased by foreign companies. At the same time, both companies have common foreign contractors, for example, Eberspecher HYDRONIC and Bosch.

PJSC “SOLLERS” is also present in the three points of the car production chain. They are identical to the positions by PJSC “AVTOVAZ”: design, production of components and final assembly. The difference is that most of the raw materials are supplied to PJSC “SOLLERS” directly by its subsidiaries, which not only increases the level of localization, but also adds an additional niche occupied in the car production chain.

According to the financial reporting statements of PJSC “SOLLERS”, the share of imported components in recent years has remained at 30%. So, in 2018, the amount of the imported components was approximately 4 745 million rubles.

At the same time, the share of exported products in 2018 increased by about 11% and was on the average 22% of the total output. The revenue from export sales amounted to approximately 8,685 million rubles. In the case of PJSC “SOLLERS”, export volumes exceed import volumes by approximately 83% [6].

4 Discussion

The importance of enterprises' participation in the global value chains and increase in the localization level is noted by many domestic and foreign authors. V.E. Dement'ev, E.S. Novikova and E.V. Ustyuzhanina consider global value chains as a new form of both cooperation and competition [7]. This opinion is supported by T.S. Naumova and E.I. Shakirzyanova. In their work, they write that global value chains open new competitive advantages for corporate participants [8]. E.D. Suslin notes that the integration of the country's economy into global production processes determines some trends towards the production localization of certain territories [9].

Speaking about the production localization, M. Hannibal and G. Knight mention that its level depends on such key factors as technological complexity of production, logistics network, demand, availability and technical competence of enterprises [10]. Based on this, we can conclude that not every value chain has the ability to localize production by 100%. At the same time, it remains important that production should be localized near the main end users, as it is noted by A.O. Laplume, B. Petersen, and J. M. Pearce [11]. J.S. Arlbjörn and T. Lüthje believe that the production localization in global value chains has an impact not only on the economy of the country, but also on the economy of individual chain participants [12]. As a consequence, after the production localization, there is an increase in productivity at the enterprise. We can say that all the authors (whose works were analyzed within this research) note the importance of inclusion in global value chains and increasing the localization level, as this has a positive impact on the economy of individual enterprises, industries and the country as a whole. However, at enterprises there are subjective factors that can limit the degree of production localization.

5 Conclusion

As part of the study, it was revealed that the enterprises of the same industry, that take part of the global production chains within the Alliance, may have different levels of the localization. As part of the Renault-Nissan-Mitsubishi Alliance, PJSC “AVTOVAZ” achieved a localization level of 50%, and its competitors in the face of PJSC “SOLLERS” were able to localize production by 70%. This difference is caused by the backlog of PJSC “AVTOVAZ” in the production of high-tech components, which is planned to be overcome in the near future.

Many authors note the importance of localization of production processes in certain areas. At the same time, they note the importance of overcoming the obstacles associated with internal processes at enterprises and inhibiting the process of localization.

The Strategy of Scientific and Technological Development of the Russian Federation indicates the importance of the problem of inconsistency of priorities and tools to support the scientific and technological development of the Russian Federation which is a barrier to the formation of production chains to create added value of high-tech products and services.

The current situation with the formation of international alliances in the automotive industry and an increase in the level of production localization is a real example of the inclusion of Russian enterprises in the global value chains. As a result, such cooperation can to some extent contribute to the solution of the above problem and provide positive dynamics for the scientific and technological development of the country.

References

1. President Decree on the Strategy of Scientific and Technological Development of the Russian Federation from 01.12.2016 [online], Available at: <http://kremlin.ru/acts/bank/41449/print> (2019)
2. T. Khasanov, Models in range: Why the localization of industry in Russia is stalling. [online], Available at: <https://iz.ru/836469/timur-khasanov/modeli-v-riad-pochemu-lokalizatsiia-avtoproma-v-rossii-buksuet> (2019)
3. The order of the Government of the Russian Federation of July 17, 2015 N 719 "About confirmation of industrial products production on the territory of the Russian Federation" [online], Available at: <http://docs.cntd.ru/document/420289297> (2015)
4. Suppliers of parts for LADA XRAY are named. Avtvesti, 17.12.2015 [online], Available at: https://auto.vesti.ru/news/show/news_id/657351/ (2015)
5. Erns & Young LLC Independent Auditor's Report on PJSC "AVTOVAZ" (2019)
6. Baker Tilly Rus Audit Report of the Independent Auditor PJSC "SOLLERS" (2019)
7. V.E. Dement'ev, E.S. Novikova, E.V. Ustyuzhanina, Russia's place in global value chains. *Nation Interests: Priorities and Security*, **1**(334), 17-30 (2015)
8. T.S. Naumova, E.I. Shakirzyanova, Russia's participation in global added value chains. *Azimuth of Scientific Research: Economics and Management*, **7**(23), 363-366 (2018)
9. E.D. Suslin, Russia in the global chains of added value. *Innovation and Investment*, **3**, 138-142 (2016)
10. M. Hannibal, G. Knight, Additive manufacturing and the global factory: Disruptive technologies and the location of international business. *International Business Review*, **27**(6), 1116-1127 (2018)
11. A.O. Laplume, B. Petersen, J.M. Pearce, Global value chains from a 3D printing perspective. *Journal of International Business Studies*, **47**(5), 595-609 (2016)
12. J.S. Arlbjørn, T. Lüthje, Global operations and their interaction with supply chain performance. *Industrial Management and Data Systems*, **112**(7), 1044-1064 (2012)