Cooperation Between SMEs and Large Industrial Enterprises: Russian Case

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Abstract: In the modern global economy, the system of functional cooperative relations that lead to the formation of hybrid structures – production networks has become actively spread. However, the strength and scale of cooperation are not uniform. Using the example of Russia, the authors consider the effectiveness of the production network of cooperation between small and medium-sized enterprises with large companies. We tested a number of hypotheses based on common ideas about the effects of cooperation. Empirical results make it possible to clarify the mechanism of formation and features of interfirm production chains in Russia. The "anchor" role of large enterprises with state participation as centers of cooperation formation is noted. In the course of the study, 14 enterprises were selected, distributed across key sectors of the Russian economy. Statistical and correlation analysis methods were used to evaluate the effects of cooperation. The results showed that the orders placed by large manufacturing enterprises with small and medium-sized enterprises increased over the period of 2015–2019. "Anchor" enterprises, as a rule, reduce the production localization degree. However, this does not have a significant impact on improving the profitability of their activities, and also does not depend on the share of state participation. Besides, placing orders with small and medium-sized enterprises does not allow them to reduce the number of employees. Many of the expected internalities that are characteristic of cooperative relations in developed countries are not reflected in the specifics of the Russian economy, or their manifestation is limited. The Russian experience clearly demonstrates the weakness of cooperative partnership, although with positive trends of change. There is a need to further improve the mechanisms for supporting small and medium-sized enterprises in the production sector, aimed at creating sustainable networks. The proposed approach can be applied to assess inter-firm production chains in other countries. A comparative study will determine the strength of the formation of production networks across countries, which will expand the understanding of the economic processes of networkization.

Keywords: cooperation, globalization, small and medium-sized businesses, production networks, subcontracting, specialization, production chains

1. INTRODUCTION

Transformations in the economy that occur under the influence of globalization processes encourage enterprises to look for effective forms of organization of production activities. Such forms of integration as subcontracting, franchising, leasing, venture financing, technology parks, joint ventures, tolling, etc. are becoming more and more popular [1]. The system of functional production of cooperative relations has become widely used. Bringing a small number of specialized companies in private manufacturing businesses provides the flexibility to respond to market conditions. One of the main factors determining cooperation is the creation of useful communication mechanisms, which are usually carried out in the form of subcontracting processes.

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The closeness of ties and the depth of cooperation between industrial enterprises are not uniform. In Russia, this is facilitated by the procurement system of state-owned companies, which obliges large enterprises to purchase from small and medium-sized enterprises (SMEs), which in turn can be carried out by transferring part of the production cycle to a subcontractor (subcontract). The volume of purchases from SMEs, including purchases in which the contractor must engage the SME as a subcontractor, must be at least 20% of the total annual value of contracts concluded by customers based on the results of purchases. At the same time, at least 18% of the total annual value of contracts should be allocated to procurement involving only SMEs [2].

However, these measures have not yet significantly changed the role of SMEs in the economy as a whole. According to the Analytical Center for the Government of the Russian Federation, in comparison with foreign countries, the share of public procurement by SMEs is low is about 1–5% against 20%. The reasons for these discrepancies are both institutional and structural [3]. It is obvious that for sustainable economic development, it is necessary to search for optimal mechanisms for expanding cooperation between industrial enterprises of various levels.

Therefore, the purpose of the study is to assess the effects of cooperation between SMEs and large industrial enterprises in Russia. To do this, the authors analyzed the purchasing activities of large enterprises with state participation in key Russian sectors: oil, gas, minerals and related activities (petroleum products transportation); industrial production, and electric-power supply industry. Preliminary data indicate that the degree of cooperation between enterprises is relatively low. In this regard, the authors put forward several assumptions that should explain this feature. The identified impact factors will allow understanding better the mechanism of forming production chains through cooperation and assessing its potential in the Russian economy.

2. LITERATURE REVIEW

The relationship between competition and cooperation is one of the key issues in the strategic management theory. This is reflected in the variety of approaches that explain the pros and cons of various strategies for organizing the production process of enterprises in their interaction with the external environment [4-7].

Cooperation develops along the entire value chain. Preference is given to all possible contractual forms in comparison with intra-company integration. The intensive growth of industrial cooperation raises questions about the blurring of lines of the economic agent, the formation of hybrid structures, which are increasingly referred to as networks. The phenomenon of intercompany network relations, which has become widespread in recent years, attracts researchers who are trying to explain the reasons for its occurrence [8]. In the most general terms, intercompany networks are perceived as a way to regulate the interdependence between companies. It should be taken into account that initially, the definitions of intercompany networks differ both in the terminology used and in the emphasis [9-11]; the objective and research direction are the decisive factors.

The development of network production cooperation with the participation of SMEs is presented in the works of many scientists [12-14]. Mins and Schneider [15] define the transformation of the world economy and the principles of business introduction as metacapitalism. Justifying this idea, among the reasons, along with globalization, integration of global capital markets, the spread of information and communication technologies and e-business, they pointed to the fundamental restructuring of companies, which led not only to their reengineering of business processes but also contributed to the creation of transnational production networks [15].

As the modern world practice shows, it is necessary to use production cooperation in its newest forms for the sustainable development of industrial enterprises. Petrishcheva [16]

attempts to set the concept of industrial cooperation and points out the potential for its development.

It is generally agreed [17-21] that one of the most promising organizational forms of integration of small, medium, and large enterprises is subcontracting. This form of cooperation is designed to use a wide network of suppliers [16, 22-23]. More generally, subcontracting refers to a specific aspect of the organization of industrial production, in which large and small firms coexist (with a high degree of specialization) in production, and sometimes in making investment decisions [24]. In fact, a large enterprise transfers part of its production functions, which ultimately reduces inventory and optimizes the production process, focusing on the assembly of the final product and quality control [25]. The use of this mechanism leads to a reduction in capital investment in the means of production and a reduction in the number of people employed in production [26]. As a result, subcontracting helps to diversify business risks and regulate production levels more flexibly [27-28].

Some scientists [29-31] have suggested that cost minimization is the main explanation for subcontracting production. At the same time, Tijun *et al*. [32] stated that the main idea of subcontracting went beyond cost minimization. They justified the idea that the key factors influencing the use of this production strategy were the focus on the core business, access to the professional and technological capabilities of partners, and the release of internal resources. According to Handfield and Nichols [33], manufacturers can match future product needs with existing resources through close collaboration with key suppliers.

In developed countries, industrial cooperation is a tool for improving the efficiency of industrial production and ensuring overall economic growth [34-36]. Since SMEs are the initiators of many innovations and provide the basis for sustainable economic development [37], they must be adequately protected in order to survive in the industrial market [38-39]. This can be achieved through government policies that encourage industrial sectors to increase the pace of production cooperation with SMEs. One of the mechanisms is the regulation of public procurement.

The topic of supporting small and medium-sized businesses in the procurement system is very popular [40]. Some scientists [41-43] consider the mechanism of granting preferences through the introduction of special procedures involving SMEs to be economically unjustified. Support methods include several mechanisms that differ from state to state. In the United States, information and consulting support are provided, procurement quotas are set, some contracts are subcontracted to small and medium-sized businesses, and innovative developments are supported. Many EU countries use a simplified procedure for purchasing goods, works, and services at the expense of budget funds, and provide for the transfer of part of contracts to small businesses, but do not carry out procedures in which only small and medium-sized businesses participate. The question of the effectiveness of public procurement procedures, in which only SMEs can participate, attracts the attention of many scientists, but their conclusions are ambiguous [42, 44].

The review has shown that the economy is no longer contrasting small and medium-sized businesses with large businesses, and their relations are transformed, moving to a new stage of development. Modern forms of cooperation are gradually changing the philosophy of inter-company communications. The target function of cooperation is to expand external economic relations – to create a production network.

3. MATERIALS AND METHODS

The initial analysis of trends in industrial cooperation and the expected effects of its implementation in practice allowed forming the following main hypotheses, which will be tested in the course of the study:

H1. Despite the legal requirements for the share of public procurement from SMEs, the development of cooperation between small enterprises and large state-owned companies is

inefficient. In this regard, it is assumed that the share of orders transferred to the SME sector within the framework of production cooperation does not depend on the share of state participation in the capital of large industrial enterprises.

H2. "Anchor" industrial enterprises that are more actively involved in industrial cooperation have higher indicators of production efficiency, in particular, the indicator of gross profitability and profitability of outlay.

H3. Placing orders with SMEs allows large industrial enterprises with state participation to reduce the number of employees.

To assess the degree of development of cooperation between industrial enterprises and SMEs in Russia, "anchor" large enterprises were selected, divided into key industries: oil, gas, minerals and related activities (petroleum products transportation); industrial production, and electric power (see Appendix A). The list includes such companies as Bashneft, Vankorneft, Gazprom, Rosneft, Russian Helicopters, NGO Almaz, United Aircraft Corporation (UAC), United Engine Corporation (UEC), Eastern Energy Company (EEC), Mosenergo, Rosseti Moscow Region (MOESK), Rosseti, RusHydro, and Transneft.

The choice of "anchor" companies is determined by their contribution to the Russian economy. All these companies are among the top 100 largest companies in Russia, their revenue for the last report in 2019 varies from 39 billion rubles to 4.8 trillion rubles. Besides, all industrial enterprises have a share of state participation. This feature is also an area of research restrictions. In addition to the selection of industrial enterprises with state participation, the analysis of the degree of cooperation with SMEs is carried out only among legal entities (companies), individual entrepreneurs and individuals are ignored (although they perform work, provide services and produce products for "anchor" companies).

The study used the following indicators of enterprises: revenue, cost of production, works (services); the amount and share of revenue of large industrial enterprises attributable to SMEs; the amount and share of the cost of production, works (services) of large industrial enterprises attributable to SMEs. The data panel was supplemented with information on the volume of purchases from SMEs, the share of state participation in the capital of industrial enterprises, and the number of employees. The sources of information were the news agencies SPARK-Interfax and Interfax Corporate Information Disclosure Center [45].

Statistical and correlation analysis methods were used for a comprehensive assessment of the effects of SME cooperation with large industrial enterprises in Russia. The production localization degree (a_1) was calculated as part of the statistical approach:

$$a_1 = \frac{\text{Orders}_{\text{SMEs}}}{PC_{LIE}}, \qquad (1)$$

where $\text{Orders}_{\text{SMEs}}$ is the orders of large industrial enterprises placed with SMEs; PC_{LIE} is the cost of products, works (services) of large industrial enterprises.

The share of revenue (a_2) and the share of cost (a_3) of large industrial enterprises attributable to SMEs were determined using the formulas:

$$a_2 = \frac{\text{RE}_{\text{SMEs}}}{\text{RE}_{LIE}}, \qquad (2)$$

$$a_3 = \frac{PC_{\text{SMEs}}}{PC_{LIE}}, \qquad (3)$$

where PC_{SMEs} is the cost of large industrial enterprises attributable to SMEs; RE_{LIE} is the revenue of large industrial enterprises; RE_{SMEs} is the revenue of large industrial enterprises attributable to SMEs.

In order to compare the performance of enterprises, the authors used the profitability indicators – gross profit margin (*GPM*) and outlay (*PO*):

$$GPM = \frac{GP}{RE}, \qquad (4)$$

$$PO = \frac{OI}{PC}, \qquad (5)$$

where *GP* is the gross profit; *RE* is the revenue; *OI* is the operating profit; *PC* is the production, works (services) cost.

The Pearson correlation ratio was calculated to determine the strength of the statistical relationship between the indicators:

$$r_{xy} = \frac{\sum_{i=1}^{n}(x_i - \overline{x})(y_i - \overline{y})}{(n-1)\sigma_x \sigma_y}, \qquad (6)$$

where n is the sample size, $\overline{x}$, $\overline{y}$ are the mean values of parameters; σ_x^2, σ_y^2 are the variances of parameters; σ_x, σ_y are the root-mean-square (standard) deviations of parameters.

4. RESULTS AND DISCUSSION

During the observation period from 2015 to 2019, all selected large industrial enterprises with state participation increased the volume of orders placed with SMEs by several times from 2.15 (Rosneft) to 210.8 (Transneft). Data on order dynamics is provided in Appendix B. At the same time, the level of internal production localization (autonomy) for all the considered enterprises decreased (Table 1), and enterprises increased the share of orders placed with SMEs in the cost price. However, the degree of localization varied heterogeneously over the period under review.

Table 1. Production localization degree of large industrial enterprises with state participation in 2015–2019, %

| Enterprise	2015	2016	2017	2018	2019
Bashneft	8.42	9.38	6.89	2.92	79.53
Vankorneft	4.09	61.35	0.92	0.35	74.85
Russian Helicopters	10.97	3.13	8.52	33.22	134.75*
Gazprom	0.34	0.57	0.31	0.03	5.50
EEC	0.55	0.65	0.63	0.78	36.01
Mosenergo	1.68	1.56	1.72	0.30	75.15
MOESK	13.63	7.639	8.99	23.76	78.22
NGO Almaz	1.94	1.13	1.13	0.11	73.15
UAC	8.76	3.60	5.07	0.60	67.96
UEC	1.85	1.80	3.99	0.59	51.99
Rosneft	5.43	1.55	0.26	0.02	6.40
Rosseti	16.41	9.86	10.26	1.62	735.63*
RusHydro	17.61	15.44	8.37	4.27	157.79*
Transneft	0.04	0.71	0.32	0.25	7.01

Note: * – for holding companies, the cost of production, works (services) has a heterogeneous distribution within the group.
Source: [45].

Based on the collected data, the share of revenue and the share of the cost of "anchor" large industrial enterprises accounted for by SMEs was calculated – separately for medium-sized, small, and micro enterprises according to the classification adopted in Russia [46]. The criteria for a medium-sized enterprise are that the average number of employees is not more

than 250, and the annual income is not more than 2 billion rubles. The share of organizations in the capital of medium-sized enterprises that are not related to SMEs should not exceed 49%, the share of the state, regions, or non-profit organizations shall not exceed 25%. The small business criteria are that the average number of employees is not more than 100, and the income is not more than 800 million rubles. The micro-enterprise criteria are the average number of employees no more than 15 and annual income no more than 120 million rubles. Restrictions on the structure of the authorized capital are similar.

The largest share of orders for medium-sized enterprises in the revenue of large industrial enterprises in revenue in 2019 was observed in Rosseti (48.48%), UAC (39.6%), RusHydro (39.69%). The largest share of orders for medium-sized enterprises in the cost of large industrial enterprises was observed in Russian Helicopters (36.75%), RusHydro (31.38%), and MOESK. Gazprom, Transneft, and Rosneft placed the smallest share of orders with medium-sized businesses (Fig. 1).
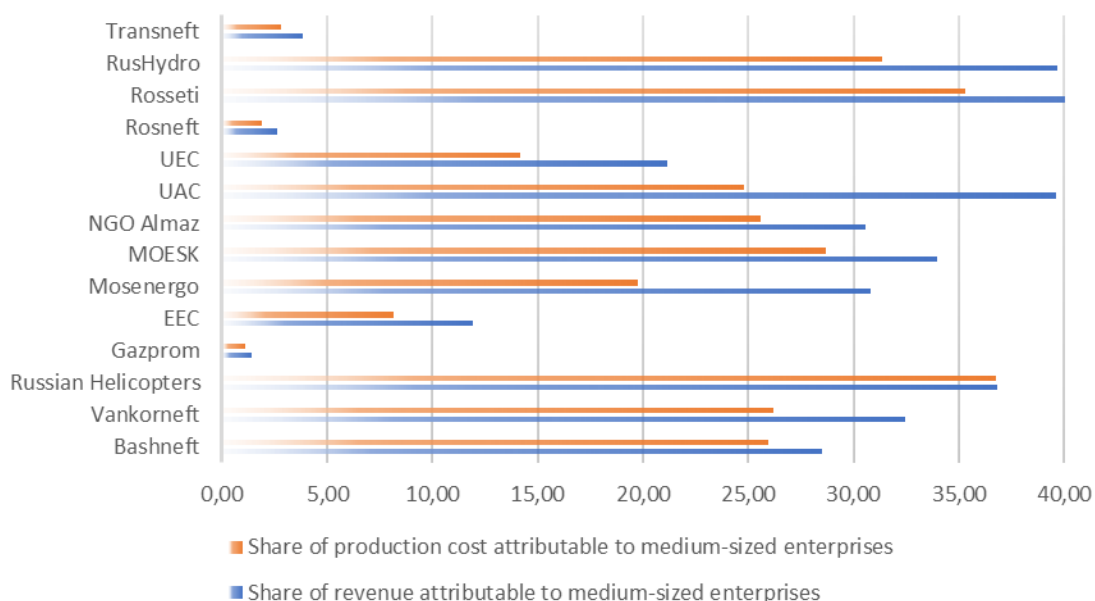
Fig. 1. Shares of revenue and cost of large industrial enterprises attributable to medium-sized enterprises in 2019, %
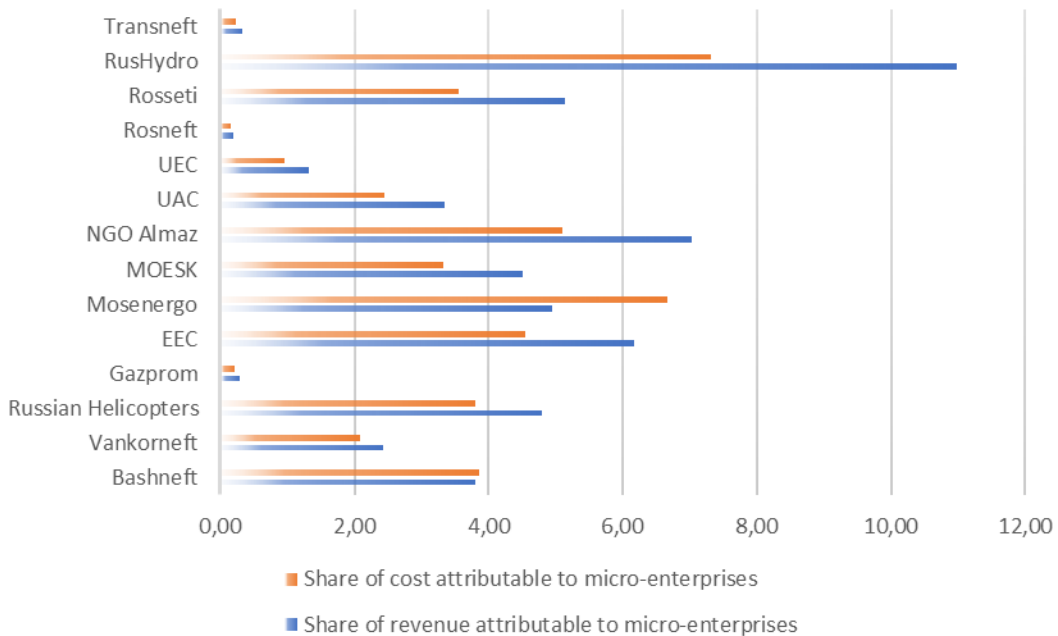
Source: [45, 47].

A similar situation is observed for small businesses. The largest share of orders for small businesses in the revenue of large industrial enterprises in 2019 was recorded in Russian Helicopters (39.12%), RusHydro (44.79%), Rosseti (33.28%). Mosenergo (36.95%), RusHydro (32.33%), and Bashneft (26.16%) accounted for the largest share of orders for small enterprises in the cost of large industrial enterprises. Gazprom, Rosneft, and Transneft demonstrated the worst work with small enterprises (Fig. 2).
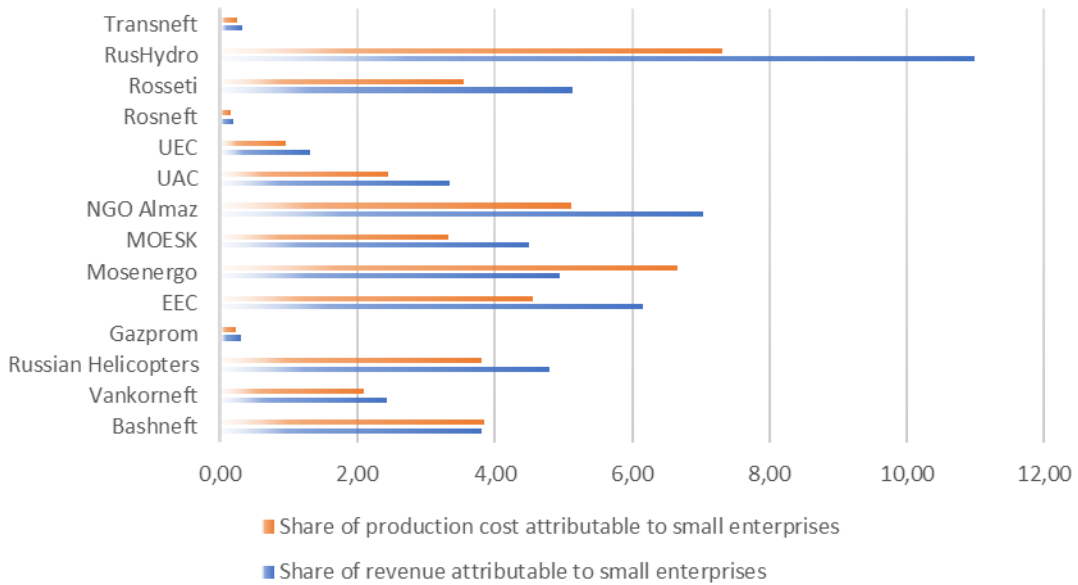
Fig. 2. Share of revenue and cost of large industrial enterprises attributable
to small enterprises in 2019, %

Source: [45, 47].

Gazprom (0.30%), Rosneft (0.19%), and Transneft (0.32%) showed a low share of the revenue from large industrial enterprises attributable to micro-enterprises. Such a low share of micro-enterprise participation is also observed in the cost of these companies (Fig. 3). RusHydro (10.99%), NGO Almaz (7.04%), and EEC (6.16%) show the best positions in working with micro-enterprises in terms of the revenue share. In terms of cost, the degree of participation of these companies is close – RusHydro (7.32%), Mosenergo (6.66%), and NGO Almaz (5.11%).

Fig. 3. Shares of revenue and cost of large industrial enterprises attributable
to micro-enterprises in 2019, %

Source: [45, 47].

In general, the leaders in placing orders for the SME sector in 2019 were such enterprises as RusHydro (95.46% of revenue), Rosseti (86.90% of revenue), Russian Helicopters (80.76% of revenue), Mosenergo (68.21% of revenue), MOESK (68.22% of revenue), NGO Almaz (66.64% of revenue), and UAC (65.91% of revenue). The smallest share of orders attributable to SMEs in revenue is observed in the "anchor" companies in the oil and gas sector.

The average order amount placed with one small enterprise in 2019 was 249,114.9 thousand rubles, with one medium-sized enterprise – 943,719.6 thousand rubles, and with one micro-enterprise – 30,243.6 thousand rubles. Thus, the structure of the distribution of orders for SMEs is dominated by medium-sized enterprises. Recall that medium-sized enterprises are characterized by the presence of an average number of employees up to 250 people and an annual income (revenue) of no more than 2 billion rubles.

The calculated correlation ratio between the parameter of the share of state participation in large industrial enterprises and the share of orders attributable to the SME sector is -0.04. On a Chedoke scale [48], the reverse relationship is weak; therefore, the hypothesis H1 was confirmed. This means that the largest industrial state-owned companies prefer not to place orders with SMEs, which is due to both the low level of development of the SME sector in Russia and the industry specifics of large businesses (the largest Russian production companies belong to the oil and gas industry), while SMEs are mainly concentrated in the services and trade sectors.

The correlation ratio between the indicator of the share of orders from SMEs of large industrial enterprises in the cost price and the gross profit margin is 0.1469. The data on profitability and the share of cost attributable to SMEs are given in Appendix C. The results obtained allow concluding that the correlation is direct and weak. The first part of the H2 hypothesis about the manifestation of greater activity in production cooperation on the part of "anchor" enterprises was not confirmed. This means that large industrial enterprises do not sufficiently use the advantages of production cooperation with SMEs to increase efficiency by reducing production costs.

The correlation ratio between the indicator of the share of orders from SMEs of large industrial enterprises in the cost and profitability of outlay is 0.2924. The correlation is also direct and weak, and the second part of the H2 hypothesis is not confirmed.

The H3 hypothesis implements the assumption that placing orders with SMEs allows "anchor" industrial enterprises with state participation to reduce the number of employees. The analysis of the growth rate of the average number of employees of the majority of large industrial enterprises under consideration for 2015/2019 leads to the conclusion that despite the increase in the level of placing orders with SMEs, the average number of employees has increased. The largest growth rate in the number of employees is observed in the UEC (40 times), which is due to the reorganization of the enterprise. Taking the UEC observation as a statistical outlier, the average rate of growth in the number of employees of large enterprises is 107.61% (Appendix C).

The correlation ratio between the indicator of the share of orders from SMEs of large industrial enterprise in the cost price and the growth rate of the average number of employees is -0.2023. The relationship is inverse and weak, so the H3 hypothesis is not confirmed.

Based on the study, it can be concluded that production cooperation in Russia between "anchor" large industrial enterprises with state participation through the use of subcontracting with the SME sector is not carried out effectively. Many of the expected internalities that are characteristic of cooperative relations in developed countries, both for contractors and subcontractors, are not reflected in the specifics of the Russian economy or their manifestation is limited.

5. CONCLUSION

The development of specialization and cooperation of small, medium and large enterprises in the modern conditions of the global market is becoming an economic necessity and is a consequence of the new competitiveness paradigm [49]. This statement finds convincing arguments in world practice. Production cooperation is formed along the entire value chain and leads to the emergence of a new phenomenon of intercompany relations – production networks. However, the strength and scale of cooperation are not uniform. The Russian experience clearly demonstrates the weakness of cooperative partnership, although with positive trends of change.

The results indicate that the level of internal production localization (autonomy) of large industrial enterprises with state participation in Russia in 2015–2019 decreased; all these enterprises increased the share of orders placed with SMEs. Therefore, there is an expansion of subcontracting as a form of industrial cooperation. The largest share of orders placed with SMEs is observed in large industrial enterprises in the electric power supply industry, and the smallest – in the oil and gas industry. In terms of the volume of orders placed by "anchor" large industrial enterprises, the leaders are medium-sized enterprises; the number of orders placed with such enterprises is 3.8 times higher than the number of orders placed with small businesses, and 31.2 times – with micro-enterprises. At the same time, the hypothesis that placing orders with SMEs allows large industrial enterprises with state participation to reduce the number of employees has not been confirmed, as well as the hypothesis that "anchor" industrial enterprises, which are more actively involved in industrial cooperation, have higher production efficiency indicators. This allowed concluding that cooperation is inefficient among large companies with state participation in Russia.

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APPENDIX A

Selected large industrial enterprises of Russia for the analysis of industrial cooperation with SMEs

Enterprise	Activity type by OKVED*	Share of state participation in the capital, %	Average number of employees, people	Revenue in 2019, thousand rubles	Cost of sales in 2019, thousand rubles
1. Production of oil, gas, and minerals					
Bashneft	06.10.1	60.5	9,183	703,150,528	514,466,674
Vankorneft	06.10.1	0.01	1,600	383,329,128	308,750,775
Gazprom	46.71	50.0	26,691	4,758,711,459	2,657,654,354
Rosneft	06.10.1	40.4	4,553	6 827 526 407	4 782 222 071
2. Production					
Russian Helicopters	30.30.3	85.71	427	39,853,657	23,884,842
NGO Almaz	26.30.17	1.16	11,387	101,586,138	92,535,194
United Aircraft Corporation (UAC)	30.30.3	8.99	661	54,734,083	53,083,289
United Engine Corporation (UEC)	30.30.13	87.45	14,297	94,038,976	63,187,526
3. Electric-power supply industry					
Eastern Energy Company (EEC)	35.14	0.08	3,962	97,746,207	90,981,227
Mosenergo	35.11.1	26.4	7,922	189,781,589	172,256,268
Rosseti Moscow Region (MOESK)	35.12	88.4	14,377	160,375,521	139,860,598
Rosseti	35.12	88.4	642	39,434,924	4,658,385
RusHydro	35.11.2	62.2	5,396	155,180,091	93,884,445
4. Other activities					
Transneft	49.50.1	78.55	1,257	960,811,881	787,367,559

Note: * is the Russian National Classifier of Economic Activities (OKVED); 06.10.1 is the extraction of crude oil; 46.71 is the wholesale of solid, liquid and gaseous fuels and related products; 30.30.3 is the production of helicopters, planes and other flying vehicles; 26.30.17 is the production of radio and television transmitting equipment; 30.30.13 is the manufacture of jet engines and their parts; 35.14 is the power-supply trade; 35.11.1 is the electricity production by thermal power plants, including activities for ensuring the operability of power plants; 35.12 is the transmission of electricity and technological connection to distribution power grids; 35.11.2 is the production of electricity by hydroelectric power stations, including activities for ensuring the operability of power plants; 49.50.1 is the transportation via pipelines of crude oil and petroleum products.
Source: [45, 47].

APPENDIX B

Volume of orders of large industrial enterprises with state participation from SMEs in 2015–2019, thousand rubles

Enterprise	2015	2016	2017	2018	2019	Change 2015/2019
Bashneft	26,710,063	29,465,010	26,231,483	14,708,667	409,149,836	+1,532%
Vankorneft	8,113,407	114,701,623	2,325,058	1,127,552	231,096,848	+2,848%
Russian Helicopters	668,099	531,842	1,154,521	6,176,591	32,185,779	+4,818%
Gazprom	7,646,833	12,769,846	7,773,306	816,985	146,174,290	+1,912%

Enterprise	2015	2016	2017	2018	2019	Change 2015/2019
EEC	249,589	311,905	331,445	620,313	32,758,637	+13,125%
Mosenergo	2,509,753	2,586,024	2,800,891	509,229	129,458,616	+5,158%
MOESK	15,489,675	9,472,757	12,216,046	33,163,019	109,405,277	+706%
NGO Almaz	495,657	555,598	534,157	59,048	67,692,533	+13,657%
UAC	4,262,882	1,795,264	2,608,787	310,220	36,075,422	+846%
UEC	492,931	531,626	546,298	191,144	32,849,933	+6,664%
Rosneft	141,847,000	44,426,939	8,977,148	1,021,700	306,224,474	+216%
Rosseti	712,467	424,912	461,972	75,382	34,268,268	+4,810%
RusHydro	11,263,353	8,701,764	7,017,781	4,135,669	148,137,273	+1,315%
Transneft	261,718	4,993,648	2,317,868	2,022,262	55,168,592	+21,079%

Source: [45].

APPENDIX C

Data on gross profit margin, the profitability of outlay and the share of cost attributable to SMEs for selected large industrial enterprises in Russia for 2019, %

Enterprise	Profitability		Share of cost attributable to SMEs	Growth rate of the average number of employees 2015/2019
	gross profit	outlay		
Bashneft	26.69	11.03	55.96	121.12
Vankorneft	19.46	19.06	50.08	35.56
Russian Helicopters	40.07	33.84	65.15	66.51
Gazprom	44.15	15.23	2.24	107.45
EEC	6.92	2.61	25.41	116.09
Mosenergo	9.23	10.17	63.39	99.99
MOESK	12.79	4.71	34.18	95.48
NGO Almaz	8.91	9.59	54.12	248.57
UAC	3.02	-4.66	45.14	105.42
UEC	32.81	20.85	22.72	4016.01
Rosneft	29.86	12.51	3.29	111.51
Rosseti	88.19	746.54	62.09	98.17
RusHydro	39.5	65.29	71.03	95.76
Transneft	18.05	12.24	4.19	97.29

Source: [45].