

Old Industrial Regions: Identification, Kinds and Perspectives of “New Industrialization”

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Abstract — About 40% of Russian regions can be referred to old industrial ones and technological advantages of most of them are being lost due to scientific-and-technological advance as well as structural changes; and structural reforms in these regions are being slowed down due to the deficiency of financial resources and irrational planning. Today old industrial regions of Russia make up a significant heterogeneous group of regions which got their industrial specialization in 1930–1950s and include mostly rearguard industries of I–IV technological waves which predominance keeps them at the stage of industrial development. Many old industrial regions obtained features of territories of concern, depressive territories; and their space localization determined their specifics: the group of the central regions can be characterized by the lack of highly-qualified specialists, low rate of renovation of productive capacities as compared to the demands of local economy, decreasing number of population, aggravating environmental problems; while old industrial regions of the Volga region can be characterized by insufficient transport and energy infrastructure, high rate of fixed assets depreciation. Today neo or reindustrialization of old industrial regions aimed at restoration of the real sector dominating role should become one of the strategically important priorities of the state regional policy. The old industrial regions of 1–4 classes have perspectives of being developed as industrial territories for which can be applied either the strategy of new industrialization (1–2 classes) or the strategy of reindustrialization (3–4 classes) that can lead in a middle-term perspective to decreasing number of industrial regions. The real perspective of old industrial regions of 5–6 classes is deindustrialization, developing service sector.

Keywords — regional economic policy, old industrial region, scientific and technical advance, rearguard industries, space localisation, reindustrialization, deindustrialization, деиндустриализация, strategy

I. INTRODUCTION

RF regions strongly pronounced differences in resources, geographic, economic, social, and demographic and other conditions make it impossible to use the developmental approach oriented at “average” conditions to regulate their development. They call for more flexible state regional economic policy taking into account both the history of regional specialization and modern special conditions of functioning as well as developmental potential of regions of different types.

Among negative peculiarities of modern state regional economic policy of Russia there are the following: taking the same approach to managing development of regions that differ from one another naturally, socially and culturally, ignoring the processes of social and economic declining of old industrial regions (OIR) the share of which in general regional structure makes up about 40% in presence of growing depression in economic complexes of the most of them.

II. MATERIALS AND METHODS (MODEL)

The problem of identification and determining specifics and perspectives of OIR functioning in Russia in historical, current and actual horizons was highlighted in the works of K.Glonti, S.Bokanov, E.Borisov, E.Ifutina, E.Kaledina, I.Mitrofanova, E.Rodionova, K.Safronova, V.Shelomentseva, A.Shestopalova and others. The most productive in the assessing perspectives and restrictions of reindustrialization of OIR in Russia from scientific and practical point of view appeared to be E.Andreeva, D.Karkh, Ju.Latov, A.Maltsev, K.Mersier-Suissa, Ju.Mysljakova, V.Seliverstov, Ja.Selin, N.Sorokina.

The scope of objectives set by the authors determined the necessity of using cognition methods of similarities and differences, analysis and synthesis, induction and deduction, generalization, analogy and extrapolation, economic modeling. In the article the following methods were used within the system-oriented approach: historical and logical, evolutionary, comparative as well as toolkit and means of analytical hierarchy technique, expert evaluation method and others.

III. RESULTS AND DISCUSSION

Most OIR represent territories with a number of specific features: 1) historically determined specialization in territorial production differentiation of labour with domination of industrial branches; 2) applying out-of-date equipment and technologies in production process amid excessive production capacities with high degree of wear and tear, 3) producing mostly non-knowledge-intensive production and market outlets localization; 4) weak innovativeness of enterprises [1, p. 55–56; 2, p. 246].

In the epoch of mass industrialization of Russian economy OIR were developed mostly as territories with concentration of industrial production as a result of series construction of industrial objects more often in the form of territorial production complexes in monocities. In 1990s regional policy carried out in Russia catalyzed the process of accumulating most state investments in industrialized complex of OIR, that in its turn led to long-term deformation of the industry-specific demand structure, i.e. “conserving” technological backwardness inhibiting the process of innovatization of economic complexes of OIR. Technological advantages of some OIR obtained as a result of fast development at the stages of establishment and booming were lost due to scientific and technological progress and structural changes; structural reforms were slowed down by the lack of financial resources and due to irrational planning; that is why the number of OIR were more and more obtaining the features of struggling, depressive territories [3, p. 161–163; 4, p. 50–52; 5, p. 14]. OIR are likely to be adaptive territories that don't generate innovations but apply them [6; 7].

Historical and logical approach to developing OIR proves high response rate of territorial structure of regional economy of such regions. That is why researching of OIR requires applying both historical and social and economic approaches that enables to determine real modern priorities of regional policy. Within the historical approach the “longevity” of the

process, the level and peculiarities of developing industrial structure of regional economic complex, its historically determined specialization can be identified. There is the interdependence between the longevity of active industrialization and the modern competitive state; it is also important that most declining monocities are mostly located in OIR. [8]. Social and economic approach is used to identify modern actual sources of competitive sustainable safe and balanced economic development (CSSBED) of the region.

Besides some general problems OIR has some peculiar features determined by their space localization. Thus the groups of central OIRs of Russia face such social and economic problems as the lack of highly-qualified personnel, low rate of renovating production capacities in comparison with the requirements of regional economy, decreasing number of population, urgency of ecological problems while OIRs along the Volga (Povolzhje), for instance deal with such problems as significant restrictions in transport and energetic infrastructure, high rate of depreciation of capital production assets [6].

Thus, OIRs in Russia are a significant heterogeneous group of regions industrial specialization of which was formed in 1930s–1950s and now can be presented by mostly rear-guard industries of I–IV waves of innovation, the domination of which manages to keep the economic complex of the region at the stage of industrial development (so called “Path Dependence”). OIR should not be identified with new industrial regions of Russia which specialize in industries of the Vth wave of innovation (nuclear energetics, electronics and microelectronics, gene engineering, information technologies, telecommunications, software, aerospace industry). However in spite of the dominating “old” industries of disappearing technological waves OIRs have the potential to increase manufacturing science-intensive production that can be realized if federal and regional government is strategically interested in the policy of “new industrialization” within the regional policy as well as within state industrial policy and etc.

In modern terms one of the key priorities of state regional policy should become “new industrialization” of OIRs aimed at returning the dominating role to the real sector both at macro and mezzo-level of the economic system. Reindustrialization is aimed at eliminating the consequences of deindustrialization (sustainable decreasing of the share of the mining industry in GRP), restoring the industrial nucleus of the economic complex of OIR on the basis of a new technological wave; while neo-industrialization deals with creating in the region production forces of new quality [9–11]. Offsetting the deindustrialization and modernization of regional economic complex by means of realizing programs of “new industrialization” (in those classes of OIRs, where it is reasonable) should become one of the key challenges both in “Strategy of Space Development of Russia up to 2030” and in strategies of competitive, sustainable, safe and balanced development of old industrial regions up to 2030.

OIRs of Russia are endogenously heterogeneous: they include territories that can be referred to different stages of technological evolution that influences middle- and long-term

perspectives of their development (deindustrialization or reindustrialization, reindustrialization + neo-industrialization («new industrialization»?)). According to the ranking of Russian regions by integral index (the state of the economic complex of region (the external trade turnover, labour effectiveness, share of innovative goods, works and services, the share of uncompensated receipts as regional budgets' revenues, the share of fully depreciated fixed productive assets; the share of services in GRP); financial sustainability (return on sales and assets; equity-assets ratio and working capital ratio; debt-to-turnover ratio) and innovativeness of specialization industries (technological innovations costs of organizations; the share of innovative goods, works and services in total volume of industry-own-produced goods shipped; receipts from export of technologies under the agreements with foreign countries)) carried out by Group of companies Stas Marketing (2012), OIRs were divided into three classes: the 1st class: stable (advanced) OIRs having the most substantial share of innovative products and the largest share of services in GRP, higher labour effectiveness, higher indicators of external trade turnover amid active involvement in international relations; slight dependence on inter-budget transfers; the 2nd class: risk-oriented OIRs having average indicators in the group (excluding labour effectiveness that approximately equals to the same indicator in the 1st class); relatively high share of innovative goods and services in GRP, having potential for developing and introducing innovations; the 3rd class: non-competitive OIRs that demonstrate deficiency amid large shares of uncompensated receipts as regional budgets' revenues and consequently extreme dependence of their budget policy; inactive involvement in international relations (exchange, trade); the lowest labour productivity indicator in the group of OIRs [5, c. 16–17].

The most complete classification enabling us to determine real perspectives of developing OIRs of every class, the opportunities and restrictions of their involvement in the process of forming national and regional innovation systems includes 6 classes being at different stages of evolution and requiring different forms of state maintenance, having different middle and long-term perspectives of development (table.) that depend on conventional specialization, trajectory of the former dynamics.

Not all OIRs have perspectives for being developed as industrial territories, but only those that belong to 1–4 classes. The later should become the objects of industrial, innovative block of state regional social and economic policy, namely they can be subject to applying either the strategy of “new industrialization” (1–2 classes of OIRs), or the strategy of reindustrialization (3–4 classes of OIRs) that is in its turn can lead in middle-term perspective to reducing the number of industrial regions. On the one hand it makes doubtful the successfulness of “new-industrialization course of development”. Declining and disappearing of old technological waves is a controversial but inevitable process of evolution creating prerequisites for switching OIRs to a new quality specialization [6; 7; 11].

IV. CONCLUSION

In mixed selective state regional policy one of the main priorities should become “new industrialization” of old industrial regions aimed at returning the dominating role to the real sector both at macro and mezzo-level of the economic system. If reindustrialization is aimed at eliminating the consequences of deindustrialization, restoring the industrial nucleus of the economic complex of OIR on the basis of a new technological wave; neo-industrialization in its turn deals with creating in the region production forces of new quality. Offsetting the deindustrialization and modernization of regional economic complex by means of realizing programs of “new industrialization” (in those classes of OIRs, where it is reasonable) should become one of the key challenges both in “Strategy of Space Development of Russia up to 2025” and in strategies of social and economic development strategies of old industrial regions up to 2030.

As the experience of pilot OIRs shows [12; 13], the program of reindustrialization should become the most important part of the strategy of their social and economic development up to 2030 and include the group of projects reflecting strong competences of science and production as well as directions of forming innovative and engineering belt. Successful managing of the program of reindustrialization of an economic complex depends on taking into account institutional conditionals and economic situation in the region as well as obviousness and transparency of both program managing system and decision making procedures.

The actual format of the reindustrialization of economic complexes of OIRs of the 3rd and 4th classes is grouping into clusters. Besides the activity of the regional institutes of development should be more targeted and should take into consideration types of regions and their peculiar demands for these or those instruments of state regional policy; institutes of regional development should become one of the main actors of regional “level” of strategic planning, as well as considering types of regions while choosing the instruments of states regional policy, following decentralization course in managing development institutes are the most important terms of increasing their role in providing new quality of economic growth, activization the processes of reindustrialization of economic complexes of old industrial regions that can be confirmed by the experience of functioning of regional industrial development foundations in 34 regions of Russia.

TABLE I. CHARACTERISTICS AND DEVELOPMENT PERSPECTIVES OF OLD INDUSTRIAL REGIONS IN RUSSIA

OIR class	Characteristics	Forms of state support within state regulation of social and economic processes	Middle-term and long-term perspectives of development
Highly-prospective OIR with economy diversification potential	Complex development and integration of both conventional and new highly-technological production industries along with active facilitation of enterprises and organizations providing business services; developed research-and-production complex, highly-qualified personnel, developed social infrastructure. Endogenous development potential.	Active image creating and brand promotion of the region including science-and-practice events with regional government bodies participation (congresses, symposiums and etc.).	Neo-industrialization+ reindustrialization: centers of innovative development
Prospective OIR with potential of extending the range of "core industries" of economy	The economic complex is represented by actively developing enterprises of high-technology production industries of new technological wave; developed service sector (transport, engineering constructions and communications, housing services and utilities) and social infrastructure. Endogenous development potential.	Supporting highly-technological industries by means of state programs, Federal targeted programs (FTP); active application of such means of support as: issuing state-guaranteed loans for economic complex modernization; government procurement at regional producers; co-financing of large joint-industry projects.	Neo-industrialization+ reindustrialization: new industrial regions; creating up-to-date regional and national innovation clusters
Prospective OIR with potential of development by means of including the service sector in the "core industries" of economy	The economic complex is represented by developed production infrastructure (transport and logistics and energetic complexes, engineering and infrastructure constructions and etc.), externally fostering the basic production industries development; deficiency of innovation-oriented labour resources. Endogenous development potential.	State support of developing enterprises with production infrastructure including co-financing of local projects in this sphere.	Reindustrialization: new industrial regions; centers of infrastructure development; creating regional innovation clusters
Moderately prospective OIR with the growth potential within the "core industries" of economy	The economic complex is represented by enterprises of traditional production industries (mechanical engineering, metallurgy and metal-working industry, chemical industry); ineffective structural policy, low innovation activity of enterprises, qualified personnel, low volumes of production, low level of employment and incomes. Endogenous development potential + exogeneous potential (state policy of "modernization through borrowings")	Creating and supporting development institutions ⁴ improving investment climate, developing private-public partnership; government control over importing new equipment and technologies, direct state support of borrowings.	Reindustrialization: saving the status of OIR; zones of technological transfer of overseas mass standard technologies; renewing infrastructure, creating industrial regional clusters
Lacking prospects OIR with potential of development service sector	Weak "industrial nucleus" of regional economy; low production and investment activity, the absence of enterprises of high-technology industries; the strategic development priority is focused on the service sector that is primarily oriented at recreation and tourist complex. Endogenous development potential.	Prevailing forms of state support: stimulating positive image of the region at interregional and international level; helping to realize recreation and tourist potential through targeted programs and etc.	Deindustrialization: the region leaving the OIRs' group; creating services developing centers, post-industrial field zones (trade, educational, leisure and entertainment, recreation and tourist and etc.)
Low-Prospective OIR being in desperate need for state support	The economic complex differs by low production potential; using out-of-date equipment and technologies of the "Soviet time" by enterprises of core production industries; saving vacancies at town-forming enterprises and providing population minimal standard of living by means of direct state regulation. Exogeneous development potential (realisation of state programs)	Direct state support of enterprises and organizations of social infrastructure, extending opportunities for population self-realization by means of creating training and retraining centers for the unemployed; developing the system of microlending and etc.; programs of supporting small and medium-size business.	Reindustrialization: – deindustrialization: saving the status of OIR artificially, the risk of losing integrity and status of the RF subject.

Acknowledgment

The article is prepared within fulfilling State grant project of the South Scientific Center of Russian Academy of Sciences for 2019, project state registration number AAAA-A19-119011190184-2.

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