

The Role of New Industrial Cities in Regional Economic Development

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Abstract— Under the present conditions of economic development and in the age of new industrialization, urban communities of a new industrial type come in place of industrial cities of the past. New industrial cities are notable for the predominance of advanced production facilities, the education system intended to provide professional training required by the present day industries, and the management system based on the active involvement of a municipal community. In fact, new industrial cities and their impact on economic development of regions remain beyond many scholars' interest and consideration. In order to fill the information gap, the authors, with reference to the official statistic data available, explore the significance of new industrial cities in regional economy in two directions: socio-economic and technological development of a Russian Federation subject. The study suggests that the economic development of Russia in 2010-2015 was driven by regions with new industrial cities and their contribution into the process. Twenty new industrial cities with 18 out of the total top Russian technology companies can be considered the nuclei of the concentrated accumulation of the national technological potential and technological advancement. The authors come to the conclusion that new industrial cities, even now contributing notably to the economy of their regions and the country as a whole, are supposed to lay the foundation for the national economic development of the future.

Keywords— *New Industrial Cities, New Industrialization, City, Region, Regional Economics.*

1. INTRODUCTION

The transition to a new technological pattern, modernization of industrial production is accompanied by changes in the nature of development and functional activity of cities, with industry as an economic foundation [1-3]. Globally, there is being formed a new type of industrial cities, which is supposed to be denoted as a "new industrial city" [4]. Its layout, economic foundation, the nature of the labor market formation, pace of life, management system radically differ from those of a traditional industrial city. The article aims to explore the influence of new industrial cities on the economic development of Russian regions.

1.1. ESSENTIALS OF NEW INDUSTRIAL CITIES

Presumably, the study of new industrial cities began in the 90-s of the twentieth century. In one of their papers Savage M. and Warde A. correlate the emergence of new industrial cities

to the development of capitalism, which dates back to the XVIII century. In view of the scholars, there are several features which distinguish industrial cities from new industrial cities - suburbanization, development of means of communication and transportation, restructuring economy through the replacement of industry with other economic activities, therefore, relocation of industrial enterprises outside the city and/ or offshoring; development of agglomeration processes; changes in the employment patterns in favor of knowledge-intensive industries; new urban problems [5].

In support of the viewpoint of Savage M. and Warde A., it should be emphasized that, with all the development of other sectors and branches of economy, industry, for a new industrial city, retains its key importance. It is a sort of "material basis" ensuring city functioning, a core link uniting its past, present and future.

At present, the industrial component of cities is being transformed by the intensifying processes of new industrialization. The latter, through its impact on enterprises and the nature of production processes, exerts its influence on urban development [6]. The outcome of the new industrialization can be not only emergence and development of qualitatively new productions in the city's space or technological and technical renovation of existing ones [7], but also changes in the education system, which is challenged with the requirements to provide the right personnel and adequate scientific support for the new industrialization processes, formation of a participatory governance system with broad involvement of the urban community. At the same time, the economy of the new industrial city is characterized by not only production functions, but also the functions of service, including those intended to maintain industrial production (diagnostics, repair, installation, consulting, etc.), as well as location on its territory of headquarters of large corporations or their representative offices (branches).

Summarizing the above, the authors suggest, a new industrial city is a specific functional type of post-industrial city, the economy of which is based on a combination of diverse economic activities, while preserving industrial production development (including the fifth and sixth technological modes). Introduction of innovation organizational forms of economic activity should be driven by the principles of new industrialization [8].

1.2. NEW INDUSTRIAL CITIES AS DRIVERS OF REGIONAL DEVELOPMENT

New industrial cities can be considered as territories with concentrated productive forces of a new type - special qualities labor force, new technologies (chipping, robotization of production, etc.) - able to produce world competitive goods. In the course of research the authors confirmed the hypothesis that the regions where new industrial cities are in place steadily demonstrate higher competitiveness. This article aims to show how the presence/ absence of new industrial cities affect the economic development of the region.

2. RESEARCH METHODOLOGY

We assume, evaluation of new industrial cities contribution to an economic development of a region must be carried out in two direction:

1. A contribution of the city to the region-wide key socio-economic indicators. Specifically, fixed assets investments, the volume of shipped own produced goods, works performed and services rendered by certain economic activity - sections C, D, E in OKVED (Russian Classification of Economic Activities), the value of fixed assets, and dwellings put in place. The choice of indicators is determined by the fact that the first three allow to assess the significance of the city for

the Russian Federation industrial sector. The last one indicates the potential of the city as a possible place of residence.

2. The importance of the city as a generator of new technologies which can be spread across the region and beyond. This is achievable through the sale of manufactured products, availability of network structures, which traditionally operate on the territory of several RF subjects.

It should be noted that an assessment of the city potential regarding economic development of the region can be complicated enough due to the shortage of the essential statistics, primarily, the indexes of innovative and technological development of industry.

3. RESEARCH OUTCOME

For the period under consideration (2010-2015), the contribution of the new industrial cities to the key regional indexes varied significantly. It refers to: the value of fixed assets, the volume of shipped own produced goods, works performed and services rendered in certain economic activities (mining and quarrying, manufacturing, electricity, gas and water supply), fixed capital investments and the total volume of dwellings put in place (table 1). However, one can see a downward tendency in the new industrial cities' share in the regional indicators, which is typical of all major and sizable cities of the country.

Table 1. Proportion of new industrial cities in key indicators of some Russian Federation subjects (max /min values), percent of total [9, 10]

Indicators	Lower bound		Upper bound	
	2010	2015	2010	2015
Fixed assets available	5,2 (Nizhni Tagil)	4,8 (Nizhni Tagil)	91,2 (Kaliningrad)	86,1 (Ufa)
Volume of shipped own produced goods, works performed and services rendered in certain economic activities:				
mining and quarrying	0 (Ulan-ude)	0,04 (Ulan-ude)	93,9 (Kaliningrad)	89,8 (Kaliningrad)
manufacturing	17,9 (Nizhni Tagil)	12,6 (Nizhni Tagil)	87,4 (Ulan-ude)	82,7 (Ulan-ude)
electricity, gas and water supply	7,9 (Nizhni Tagil)	3,9 (Nizhni Tagil)	88,9 (Novosibirsk)	88,2 (Novosibirsk)
total volume of dwellings put in place	1,6 (Nizhni Tagil)	3,5 (Nizhni Tagil)	80,3 (Barnaul)	68,4 (Barnaul)
Fixed capital investments	6,7 (Nizhni Tagil)	6,4 (Nizhni Tagil)	81,2 (Novosibirsk)	79,1 (Novosibirsk)

The results of the factorial analysis presented in figure 1 are indicative of the fact that a positive dynamics of the gross added value for the RF subjects in question, over the period of

2010-2015, was largely ensured by 19 regions, the ones with a concentration on their territory of new industrial cities.

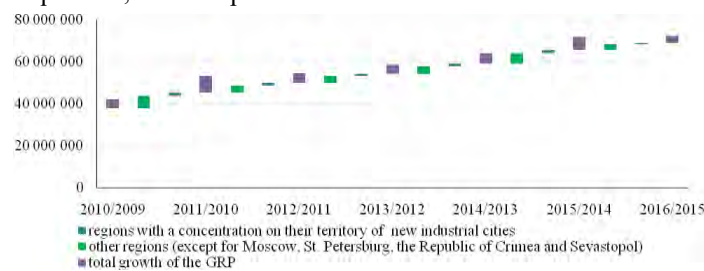


Fig. 1. Contribution of regions with/ without new industrial cities in Russia's gross added value, mln RUB. [11, 12]

The available statistics is too scarce to give an accurate assessment of how significant new industrial cities are for the technological development of the regions they are located in. Hence, let us turn to some indicative data on enterprises operating on the territory of the cities in question. At the end of 2016, the RBC (Russian business media holding) entered 18 enterprises, with a legal address on the territory of new industrial cities, in the list of "50 largest technology companies in Russia" [13], 27 companies were indicated in the national rating of the top fast-growing technology companies (denomination of "innovative" businesses) [14]. In other words, there is enough evidence to suppose that currently the new industrial cities accumulate certain significant technological potential in both production and development.

4. CONCLUSION

The new industrialization in Russia is to be a vector of development at present and in the near future [15-20]. The accumulation of technological knowledge, transition to other production methods entail transformation of the cities which have and try to retain their industrial specialization. On their basis, there are being formed cities of a new type - new industrial cities. The available statistics and data of numerous ratings confirm the hypothesis that new industrial cities are a driving force of not only economic, but also technological development of the regions they represent. The factorial analysis carried out by the authors allows to come to conclusion that the subjects of the Russian Federation, within which new industrial cities are localized, demonstrate a dramatic competitive advantage. Even now they contribute significantly to the Russian GDP growth indicators.

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