

The economic component of labor migration in a megacity in the conditions of new industrialization

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Abstract — The article presents the problem of the role of labor markets under the conditions of the transition to 4.0 economy on a scale of a Russian megalopolis. The principal feature of the Industry 4.0 is the situation when regardless of the priorities of industrial policies by the main recipients of dividends revolutions become suppliers of intellectual or physical capital. The authors analyze the social and professional characteristics of labor migrants arriving to Ekaterinburg from Central Asia, using the statistical data and the results of the sociological study. The authors come to a conclusion that the labor migrants from Central Asia in the territory of Russia in general and the Ural megalopolis in particular, being in-demand mainly in the sphere of menial work and in the extensively developing economic sectors, are not motivated and do not have real opportunities to expand professional skills necessary in the context of the Russian economy, which is now following the path of forming the Industry 4.0.

Keywords — *industry 4.0, labor migrants, labor market, Russian megalopolises, new industrialization*

I. INTRODUCTION

The principal feature of the Industry 4.0 is the situation when regardless of the priorities of industrial policies by the main recipients of dividends revolutions become suppliers of intellectual or physical capital. Transition of the majority of developed countries to 4.0 economy requires special attention towards the social and professional characteristics of labor force. Beata Ślusarczyk notes, that the majority of the entrepreneurs recognize the concept of Industry 4.0 as a great opportunity for development and improvement in competitiveness [1]. Education and vocational

training needs to be remodeled and upgraded by the efforts of governmental and non-governmental stakeholders [2]. It is obvious that the increase in the number of labor migrants from countries with a low level of development poses a question of the possibility of their integration in the labor market of the host countries and their influence on the country's transition to the new economic level.

According to the Federal Statistics Service of the Russian Federation, in 2016, 511 773 people (89%) out of 575 158 migrants who arrived to the Russian Federation and were officially registered by the Federal Migration Service came from the CIS countries. In 2016, the share of migration gain owing to foreign citizens from CIS countries in the Ural Federal District made up 11% of the total number for the whole country. In the Sverdlovsk region, being part of the Ural Federal District the migration gain owing to foreign citizens from CIS countries amounted to 1 855 people. Out of the total number of migrants coming to Russia from CIS countries in 2016, 43% were from five Central Asian countries (Kazakhstan, Kirghizia, Uzbekistan, Tajikistan and Turkmenia). Before 2015, the percentage of migrants from Central Asia made up to 70%. Thus, notwithstanding the fact that the migration flow from Ukraine altered the share of migrants, the "accumulated" migration is represented mostly by people from Central Asia, possessing their specific social and professional characteristics and occupying a specific niche in the labor market of the region.

Ekaterinburg became an important element of the migration corridor formed between Central Asia and the Russian Federation. The main migration flow is labor migration, which involves from 2.7 to 4.2 mln people, or from 10 to 16% of economically active citizens of Central Asian countries. This represents not only a significant scope of

migration, but also implies serious economic consequences for both the migrants' countries of origin and the host country.

The importance and usefulness of external migrants as a labor force is declared officially in the Russian Federation. It is stated in the Concept of Demographic Development of the Russian Federation by 2025. Besides, over the last years according to the state policy of the Russian Federation aimed at supporting voluntary resettlement of compatriots living abroad to the Russian Federation, there are more migrants of different ethnicities coming to the Russian Federation than ethnic Russians. For example, since 2013 the Sverdlovsk region has been implementing the regional program presupposing that by 2020 17 300 migrants are going to enter the territory of the Sverdlovsk region, with two thirds of them being the representatives of the titular ethnic groups of their countries of origin. It is planned that the majority of migrants will arrive from Kazakhstan, Uzbekistan, Tajikistan and Armenia.

In 2017, the Government of the Russian Federation adopted the program "Digital economy of the Russian Federation". Digitalization of economy is a strategic priority setting specific requirements towards the social and professional characteristics of employees. Foreign workers (labor migrants) form a significant part of the labor resources of Russia. After gaining the Russian citizenship or the right to work in Russia, they do not change their social and professional characteristics and differ from the professional personnel of the host country.

The principal transformations of the employment of labor migrants in the sphere of distribution of the foreign labor force can be traced most significantly according to the types of economic activity.

TABLE 1. CHANGES IN THE STRUCTURE OF THE EMPLOYMENT OF FOREIGN WORKERS ACCORDING TO THE TYPES OF ECONOMIC ACTIVITY IN 2017, %

| Year | Type of economic activity | | | | | | |
|---------------|---------------------------|----------------------------|------------------------|------------------------------|---------------------------------|-------------|-------|
| | Construction | Wholesale and retail trade | Manufacturing activity | Transport and communications | Community and social facilities | Agriculture | Other |
| 2007 | 48,9 | 30,6 | 7,0 | 6,0 | 4,1 | 0,3 | 3,1 |
| 2017 | 29,5 | 26,2 | 15,1 | 7,5 | 11,2 | 3,9 | 7,1 |
| Increase rate | 61,8 | 84,3 | 206,2 | 122,0 | 263,1 | 123 | 237,5 |

The data of the table 1 demonstrate that the leaders among the types of economic activities involving external migrants are construction and wholesale and retail trade, though, their share is decreasing rapidly. One can mention the expansion or the diversification of foreign employment in terms of new directions. Thus, the percentage of labor migrants working in the housing and utilities infrastructure has increased by 2.6 times during the last years. A huge increase in the rate of employment of foreign workers in agriculture can be observed (increase by 12 times), even taking into

consideration the fact that the Sverdlovsk region is an industrial area, where agriculture makes up not more than 4% of the internal regional product. Thus, in the economy of Ekaterinburg we can also note the trend of formation of the sectors with the increasing percentage of migrants.

Other Russian researchers come to the same conclusions. In the Russian labor market, foreign workers compete with Russian citizens in a relatively indirect manner. It is most relevant for those subjects of the Russian Federation, where there is a higher percentage of university-educated population seeking higher salaries [4]. It means that in such regions, the foreign labor force is in demand only in the sector of menial work. The fact that the foreign and the Russian labor force do not compete in the labor market is intermediately confirmed by the comparative analysis of the dynamics of the accumulated indicators of the increase in the numbers of labor migrants and the change in the development indicators of different economic sectors.

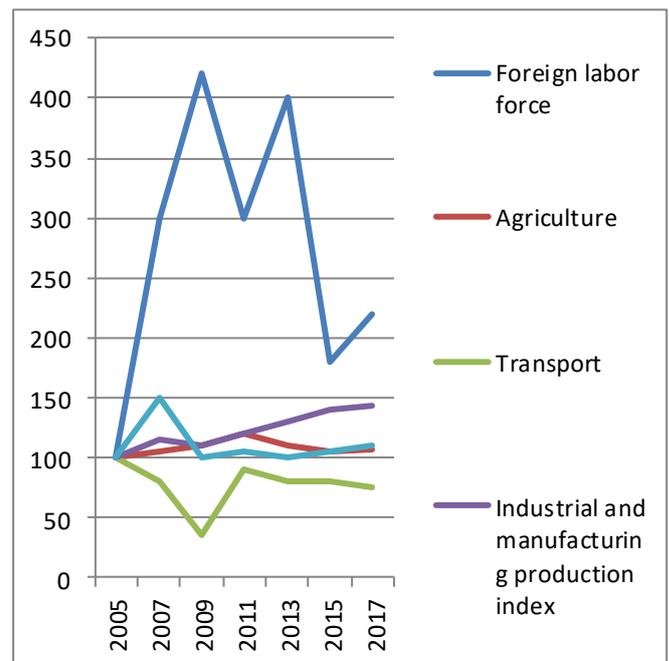


Fig. 1: Dynamics of the accumulated growth rates (2005 = 100%). Calculated by authors on the basis of the data from the Federal State Statistics Service [5].

On the basis of the dynamics analysis of the accumulated growth rate of different economic sectors (see Figure 1), it can be stated that the significant gap between the rates of increase in the numbers of labor migrants and the growth rates of economic sectors is an evidence of the fact that the migrants do not have a serious influence on the development of these sectors. They are actively involved in the economic sectors characterized by the extensive type of development. Migration and the level of economic development are intercorrelated during short time periods mainly. At the same time, the foreign labor force is in demand during the period of active construction works or economic recovery. After these stages are completed, the numbers of

labor migrants, as a rule, stop influencing the development of the economic sector. Sometimes we can observe an inverse dependence. During the period of crisis or post-crisis, when economic sectors start active recovery, they don't require labor migrants.

II. PROBLEM FORMULATION AND METHODOLOGY

Systematization of numerous studies in this area allows us to form three main groups, within which traditional widely used concepts of industrialization can be combined.

In the first group, interpretations of industrialization are considered as a tool for creating conditions for economic growth and development of high value-added sectors with simultaneous modernization of traditional industries [5, 6, 7, 8].

The second group includes research papers that appeared at the beginning of the XXI century, the essence of which lies in the new understanding of industrial policy in the framework of the "New Structural Economics" (New Structural Economics) by J. Lin [9] or the "Good Economy" by B. Cutter [10]. According to E. Phelps, the parameters of such an economy should provide people a challenge, engagement, mastery, discovery and development [11].

The third group includes the provisions of the concept "Industry 4.0", formulated in 2011 by the president of the World Economic Forum in Davos, Klaus Schwab [12]. Its essence lies in the accelerated integration of cyber-physical systems in plant processes, with the result that a significant part of the production will take place without human participation.

The transition to Industry 4.0 will lead to a fundamental change in the structure of employment - hundreds of thousands of employees may be left without work, and countries implementing the fourth industrial revolution will need to employ them to avoid a social explosion. The creator of the Industry 4.0 concept, Klaus Schwab, argues that the arrival of "smart" industries threatens to increase inequality both within national economies and globally [12]. The fourth industrial revolution will lead to a redistribution of countries in global competition, as well as in labor migration flows[13].

When carrying out the social and economic analysis of migration processes in the Sverdlovsk region, we based on the following approaches of foreign scientific schools studying migration: migration as a means of accumulating capital (Pietro Reichlin & Aldo Rustichini); as a means of accumulating human capital (Uwe Walz, Nadeem Ul Haque); migration from the point of view of innovations and technology (Per Lundborg, Paul S. Segerstrom, Lucas Bretschger). Researchers Stephen Drinkwater, Paul Levine, Emanuela Lotti, Joseph Pearlman study different models, considering migration as one of three drivers of the economic development of the country. When assessing its effect on the economy of the host country, the positive influence of migration on the indicator of the Gross Domestic Product per capita is described in the studies by Jacques Poot, Ganesh Nana and Bryan Philpott.

We used the method of statistical analysis to assess the scale and the structure of migration processes and their influence on the social-economic and demographic situation in the Ural Federal District. The authors applied the descriptive method of information analysis.

III. RESULTS

Today the megalopolis of Ekaterinburg is a large inter-regional innovative industrial financial, scientific, educational and cultural center of the Ural Federal District. Ekaterinburg is the fourth city in Russia in terms of population, a transport and logistics hub on the Trans-Siberian line, an administrative center of the Sverdlovsk region. The Sverdlovsk region demonstrates high demand for the foreign labor force in industrial and transports sectors. A change in the structure of migration flows from Central Asia to Ekaterinburg can be observed. The main contribution to the increase of foreign employment is made by work on the basis of a labor patent. Thus, in 2016 in the Sverdlovsk region 47 710 patents were issued, in 2017 — 37 644 [14].

TABLE 2. STRUCTURE OF MIGRANTS IN TERMS OF SEX AND AGE IN THE SVERDLOVSK REGION IN 2017

| Indicator | Number of incoming migrants | | | Number of outgoing migrants | | | Migration gain | | |
|------------------------|-----------------------------|-------|---------------|-----------------------------|---------------|---------------|----------------|----------|---------|
| | Male & female | Male | Female | Male & female | Male | Female | Male & female | Male | Female |
| Total | 11907 4 | 55606 | 63 46 8 | 11 75 50 | 54 45 2 | 63 09 8 | 15 24 | 11 54 | 37 0 |
| Of working age | 87847 | 41912 | 45 93 5 | 86 29 0 | 40 85 9 | 45 43 1 | 15 57 | 10 53 | 50 4 |
| Elder than working age | 11287 | 3380 | 79 07 | 11 23 7 | 33 09 | 79 28 | 50 | 71 | - 21 |

The data of the table 2 demonstrate that the migration gain in 2017 is determined by the influx of women of working age and the deflux of men of working age. It is related to the fact that more and more women independently come to Russia for work. It should be noted that women from Central Asia are in demand in the sector of menial work in Russia to a larger extent than men.

The crisis strengthened the focus of the migration policy on the short-term labor migration, which impedes the effective substitution of the loss of the working population by migrants. This fact contradicts to already formed behavior patterns of labor migrants: more than 60% of them spend the majority of time during the year in Ekaterinburg; one third are oriented at permanent residence. While own resources are decreasing, and the economy is developing and being

restructured, the demand for the labor force will become more diversified in terms of economic sectors and will require more qualified workers. Still, at the present moment we can observe the decrease of the education level of labor migrants arriving to Ekaterinburg. Analysis of the structure of migrants from Central Asia according to the level of education demonstrated that the absolute leader in terms of supplying Russia with qualified personnel is Kazakhstan. Almost one fourth of migrants who came to Russia from this country in 2016 had a diploma of higher professional education [15].

Referring to the data of the sociological study, we can draw attention to such important social characteristics of migrants from Central Asia as the significant cultural distance from the local population, the insufficient knowledge of the Russian language and the minimum number of contacts with the local population.

Thus, according to the results of the study, only 32.2% percent of working migrants from Central Asia think that they have become accustomed to the life in Ekaterinburg. Only 33.6% have a good command of the Russian language (it means they can not only communicate, but also can read and write in Russian). In most cases, the communications of labor migrants with the citizens of Ekaterinburg are work-related (79.0%). Less than one third of the respondents (28.7%) mentioned the presence of friendly relationships with the local population. Labor migrants mentioned meetings with the representatives of the same nationality (41.3%) and Internet (41.3%) as the main sources of information about Russia and Ekaterinburg [16]. Only one fifth of the respondents (21.0%) mentioned that they communicate with the Russians in social media.

We can come to the conclusion that the social characteristics of migrants from Central Asia are the evidence of the fact that they do not conform to the needs of the economy 4.0, as they are not sufficiently involved in the information and communication environment of Ekaterinburg. It also has an impact on the migrants' involvement in the industrial environment of the city. It should be noted that, according to our data, more than 65% of the migrants in Ekaterinburg are interested in gaining the Russian citizenship or in the long-term migration.

IV. RESEARCH RESULTS

Despite of the manifestations of crisis in the economy, Ekaterinburg continues to be an attractive city for labor migrants. External labor migration is, in general, profitable for Central Asia, as it is the only possible solution for many pressing social and economic problems in the sending countries. Generally, for Russia, and Ekaterinburg in particular, the influx of labor migrants from Central Asia has more positive than negative aspects: there is an infusion of low-cost labor; economically active population is attracted. At the same time, migrants from Central Asia, being in demand mainly in the sphere of menial labor and in the extensively developing economic sectors, are not motivated and do not have real possibilities to expand the professional qualities, required under the conditions of the Russian economy being in

the course of transition to the Industry 4.0. Their social characteristics, including the orientation towards cultural differentiation and isolation in relation to the citizens of the host territory, contribute to this situation as well. Ekaterinburg, being the capital of the Russian industrial region, develops information and communication foundations of industrial labor. Still, labor migrants from Central Asia, in the context of the new economy, do not have potential possibilities to expand the required professional skills.

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