Science parks and the regional socio-economic conditions for their development in Russia

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The socio-economical conditions of technological parks developing.

1989 - the Tomsk Technological Park

1993-2000 - around 50 technological parks were created in Russia (the fist wave)

2004 - the President of the Russian federation Vladimir Putin and the minister of Communication Leonid Reiman visited Bangalor, India.

2006-2015 – the second wave, the amount of technological parks in Russia grew up to 179 parks.

Nowadays - 115 operating technological parks, 74 are being designed and 34 are indented to be created (GISIP.ru)

The socio-economical conditions of technological parks developing.

- Conditions of developing
- Results of activity
- A perspective narrow scope of activity example

The technological parks which are observing in prism of socio-economic conditions (71parks in 30 regions)

The regional group	The regional type	The number of discounted technological parks
Highly Developed Regions	Financial economic centers	26
	Commodity Export-Oriented	6
Developed Regions	With Diversified Economy	18
	Based on Manufacturing Industry	3
	Relying on the Mining Industry	6
Moderately Developed Regions	Industrial and agricultural regions	2
	Agricultural and industrial regions	10
Less developed Regions	Commodity	0
	Agricultural	0

Source: The Association of Clusters and Technological Parks, author's calculations

The socio-economical conditions of technological parks developing. Assumptions and limitations.

According to the Higher School of Economics the level of innovative activities can be characterized by the Russian Regional Index of Innovations which includes:

- Innovative activities
- Socio-economic conditions of innovative activity
- Scientific and technological potential
- Quality of the innovation policies

The personal impact of top level policy makers (Governors) as the factor of differences inside the groups.

The socio-economical conditions of technological parks developing criteria

The criteria of socio-economical characteristics of the groups of the regions (average within the group):

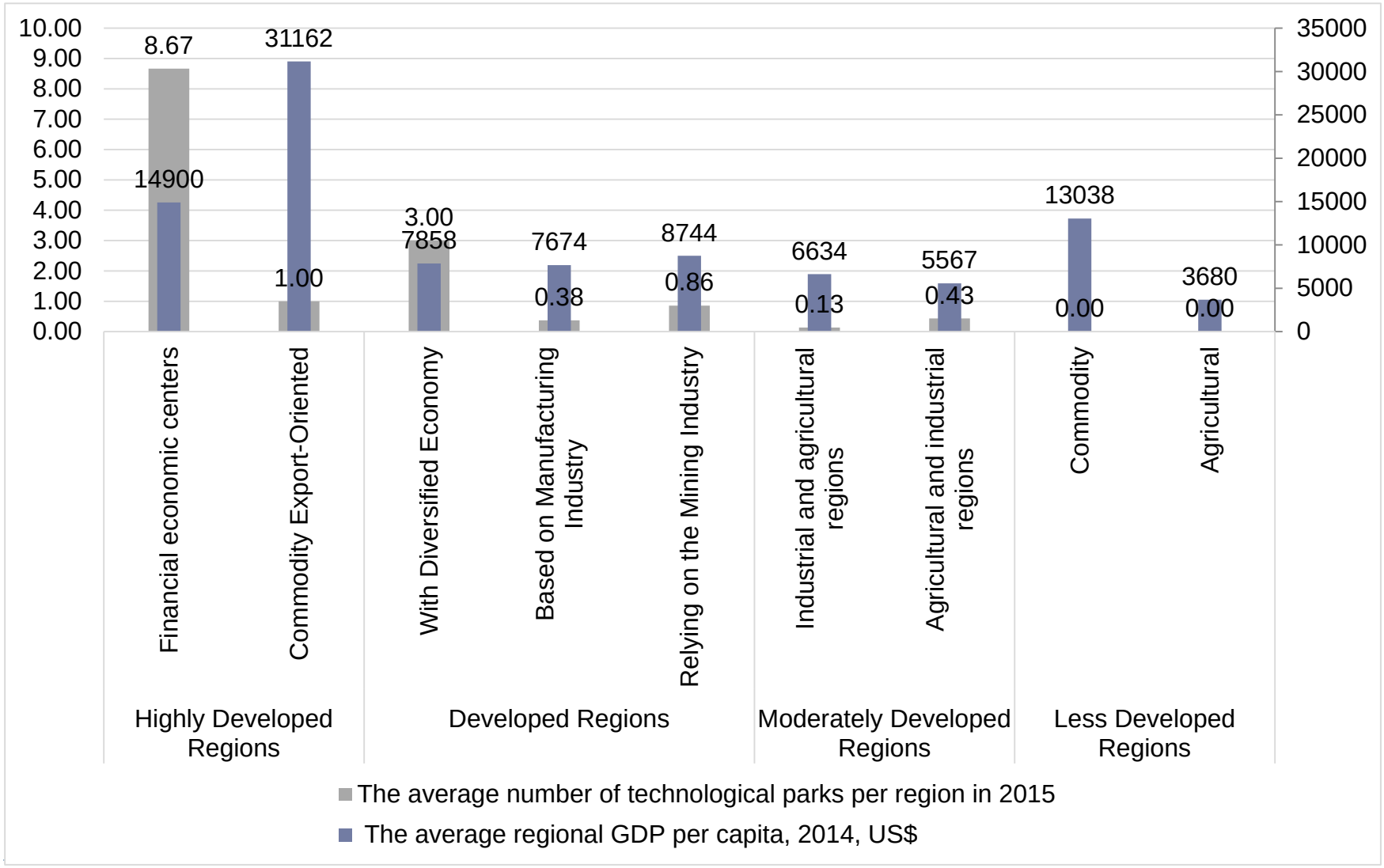
Socio-economic conditions of innovative activity

- GDP per Capita
- Working age population
- Migration Flow

Scientific and technological potential

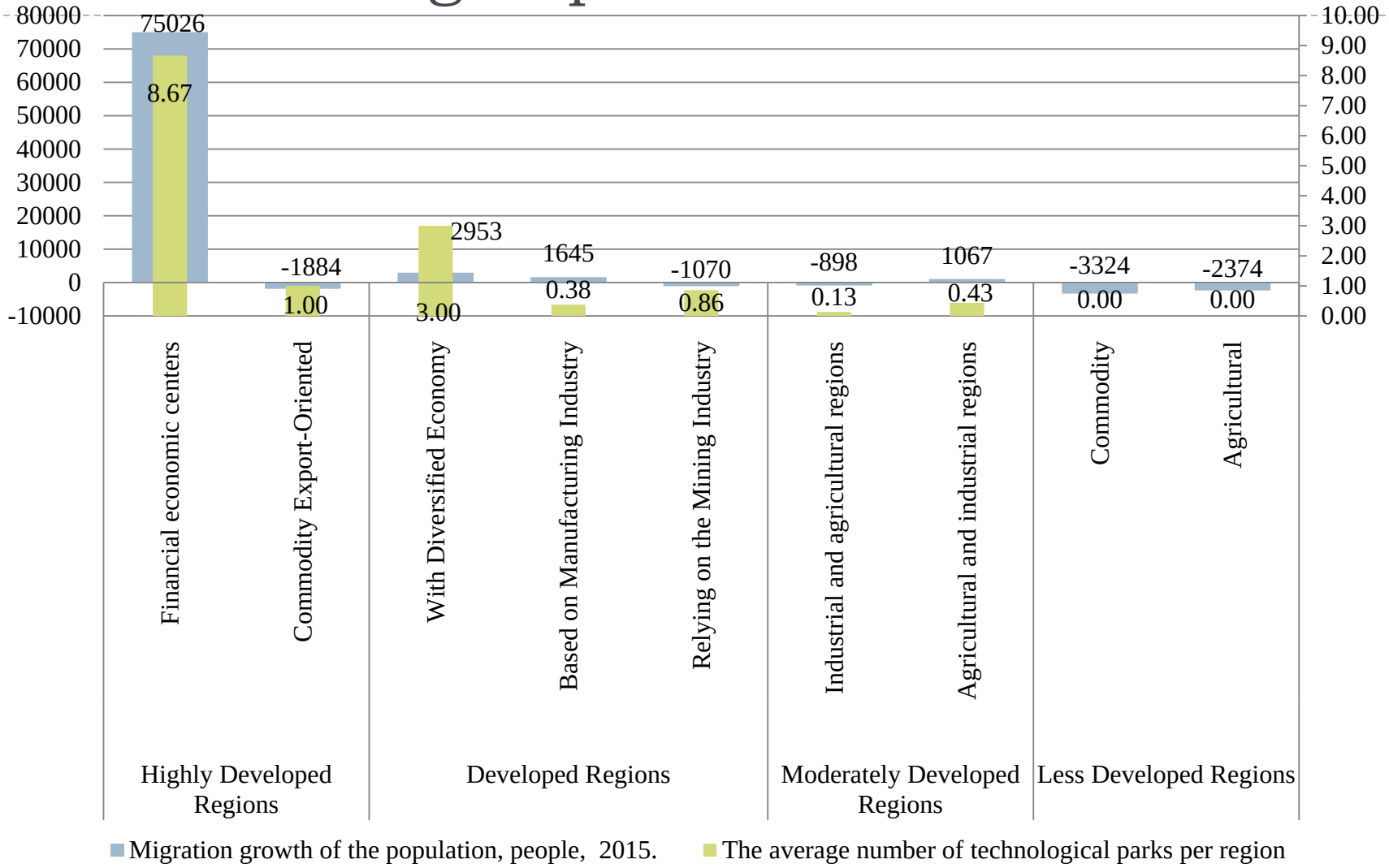
- Structure of the employed in the economy by the level of education
- The number of state and municipal educational institutions of higher education
- The number of granted patents for inventions and utility models
- The monthly nominal wage of the employees for the scientific and full range organizations.
- The human development index

The average number of technological parks per a region and regional GDP within the regional classification groups.



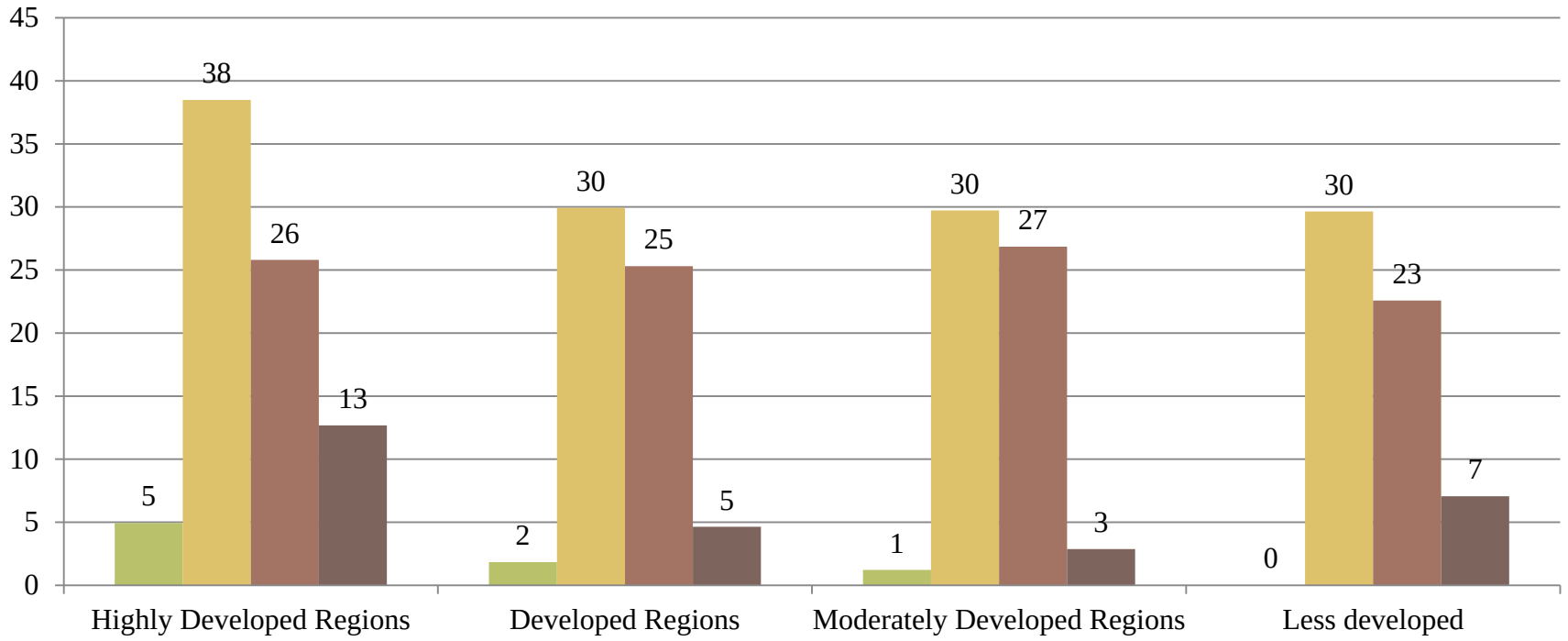
Source: Rosstat, The Association of Clusters and Technological Parks, author's calculations

The migration flow within the regional classification groups.



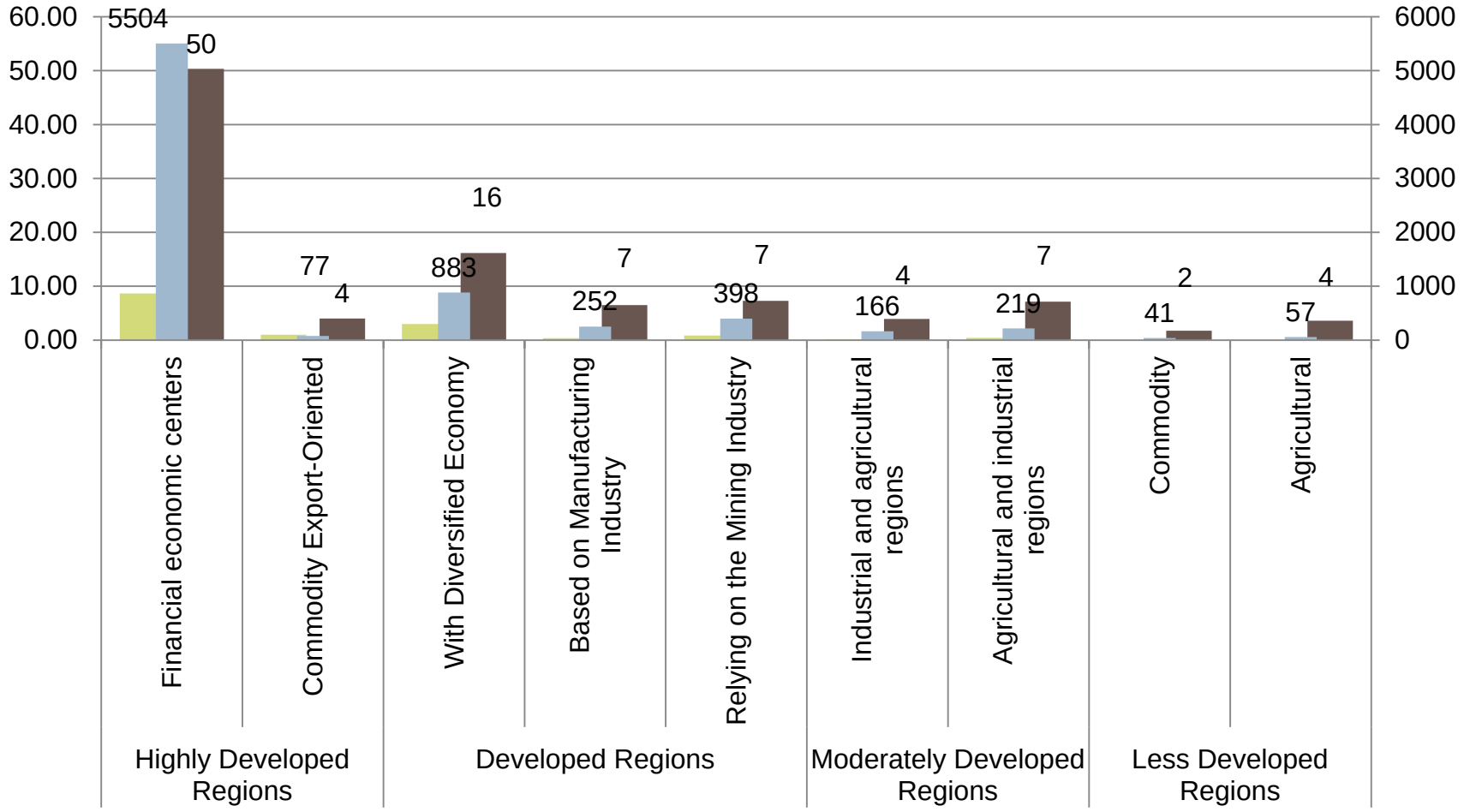
Source: Rosstat, the Association of Clusters and Technological Parks, author's calculations

Higher and Secondary Professional Education within the regional classification groups.



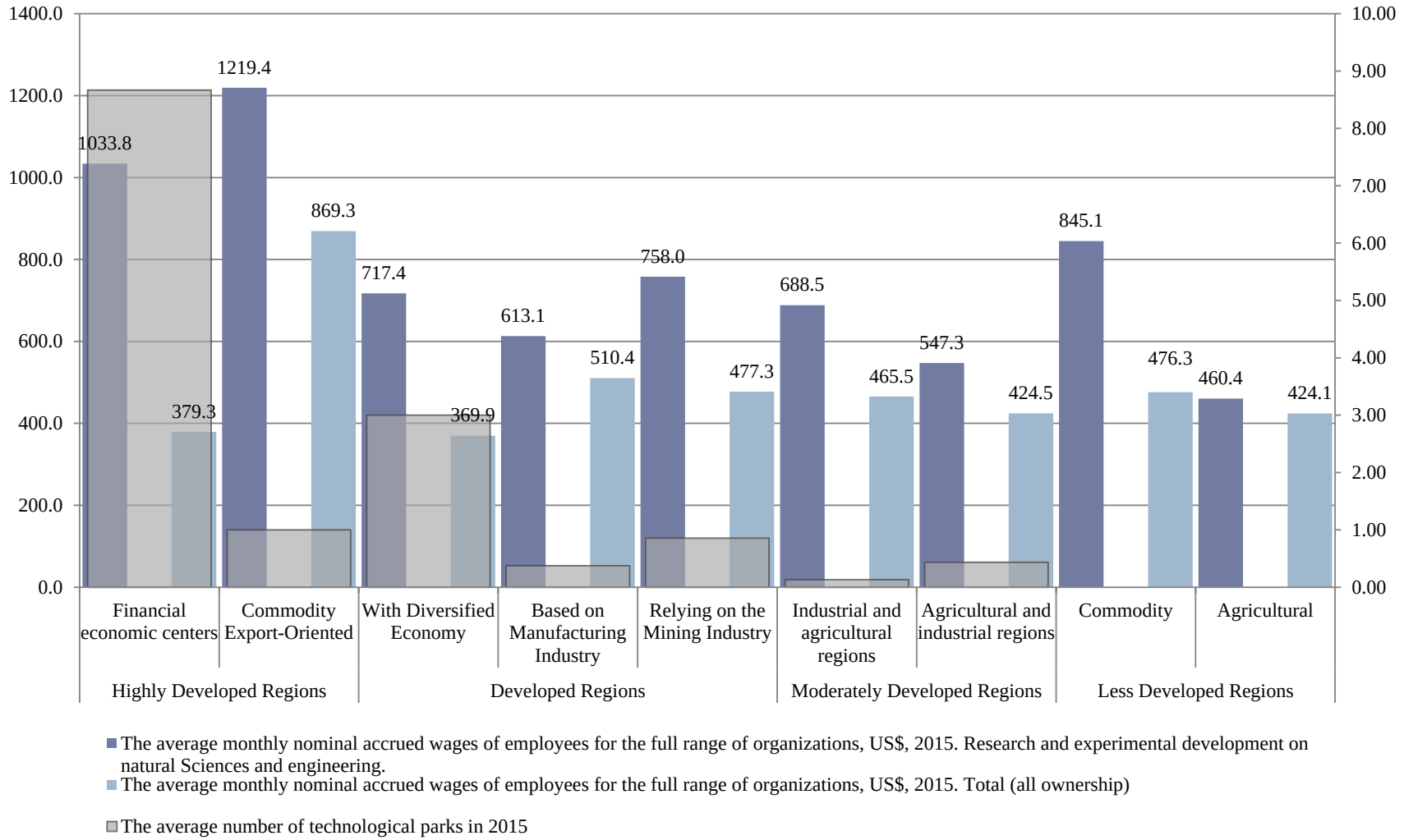
Source: Rosstat, the Association of Clusters and Technological Parks, author's calculations

The educational institutions and granted patents distribution.



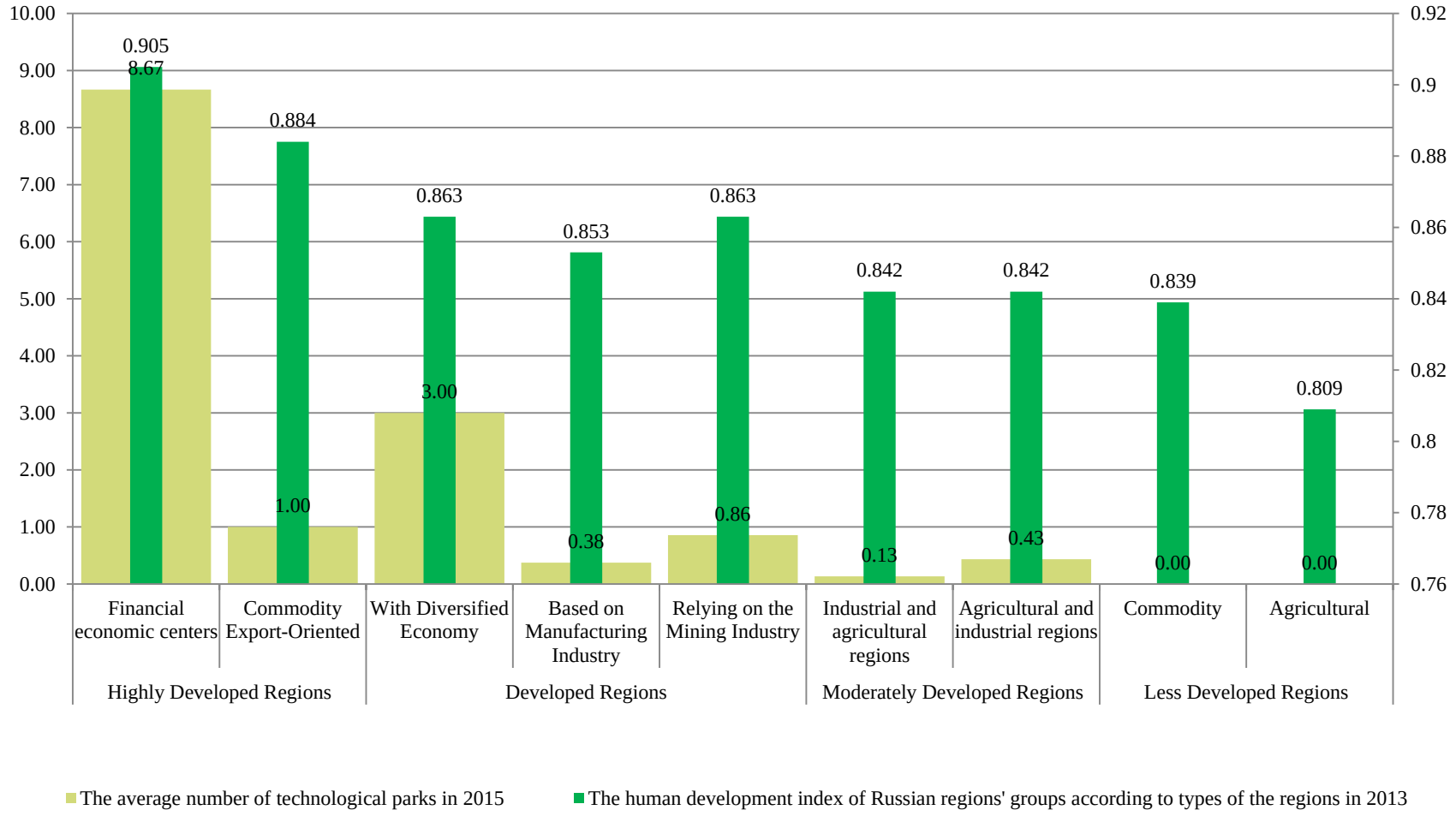
Source: Rosstat, the Association of Clusters and Technological Parks, author's calculations

The average wages for the ranges of organizations.



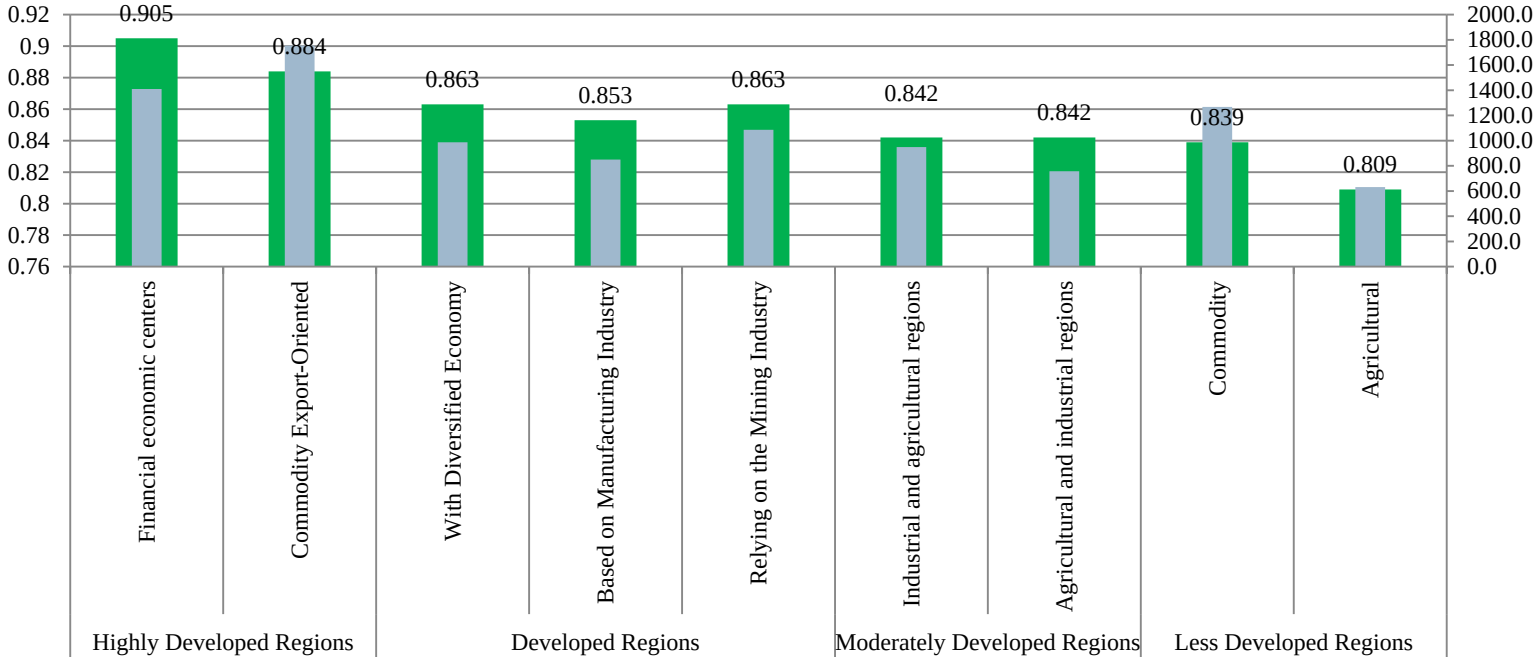
Source: Rosstat, the Association of Clusters and Technological Parks, author's calculations

The average wages for the ranges of organizations.



Source: The Analytical center for the Government of the Russian Federation, the Association of Clusters and Technological Parks, author's calculations

The average monthly nominal accrued wages changing between the groups of the regions.



Source: Rosstat, author's calculations

Conclusion 1

- Westward drift migration, Dutch disease have a negative impact on innovative development of commodity dependent and eastern regions of Russia.
- The salary is not the main factor in terms of attractiveness for the intelligent workers. There are climate, transportation, infrastructure etc.
- The Russian centralized redistribution policy lets keep high skilled labor in the regions and decreases the negative migration flows.
- The distribution of technological parks, educational institutions, highly educated workforce have the same shape; thus, the spread of technological parks around the country is appropriating to the educational and scientific potential of the regions.

The results of the technological parks activities.

The criteria of the results of the groups of the regions.

Innovative activities

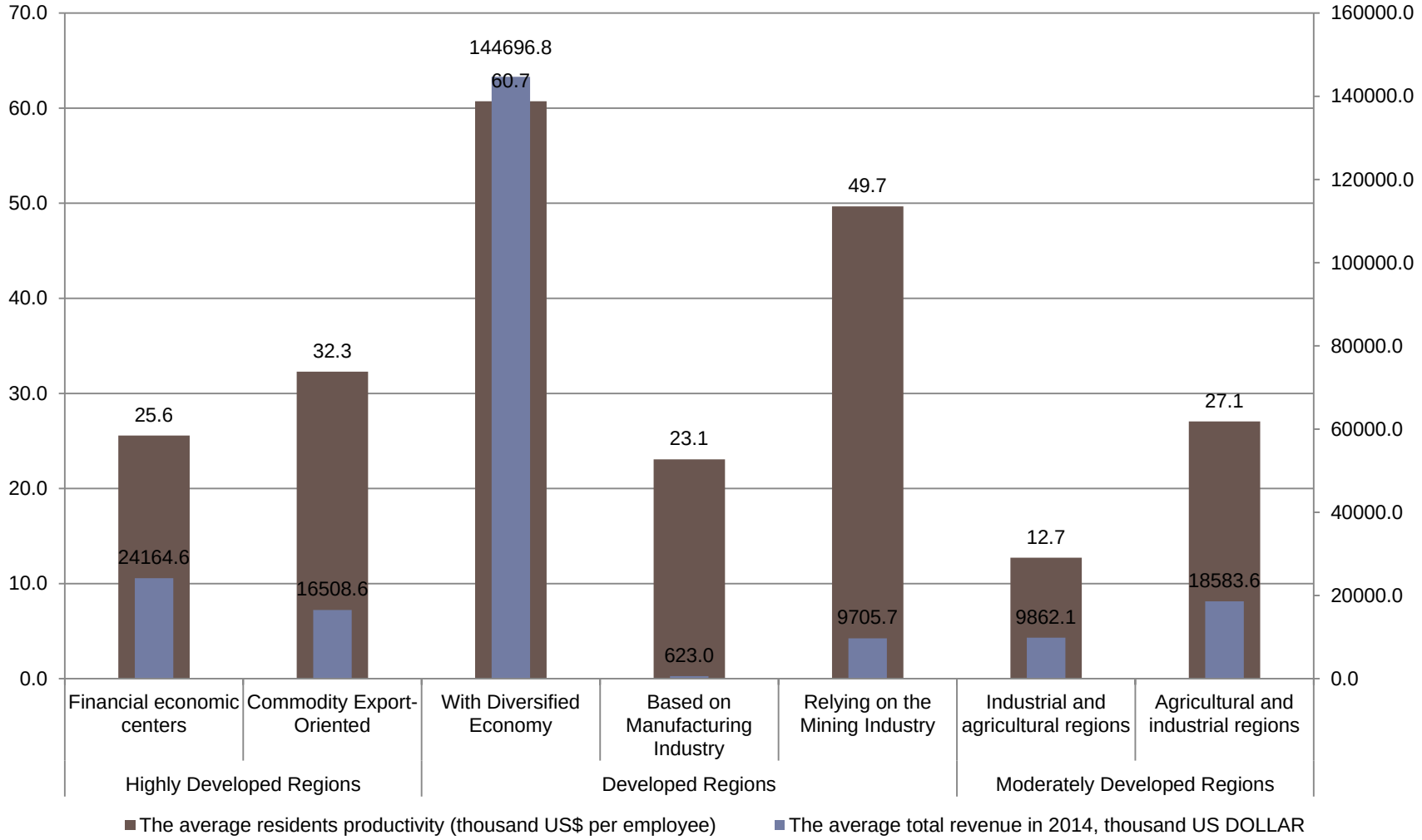
- Residents of Science park productivity
- Total revenue of a science park
- The number of job places of a science park
- Employee per resident

Observing income generation technological parks.

The regional group	The regional type	The number of discounted technological parks
Highly Developed Regions	Financial economic centers	13
	Commodity Export-Oriented	4
Developed Regions	With Diversified Economy	9
	Based on Manufacturing Industry	1
	Relying on the Mining Industry	4
Moderately Developed Regions	Industrial and agricultural regions	1
	Agricultural and industrial regions	7
Less developed Regions	Commodity	0
	Agricultural	0

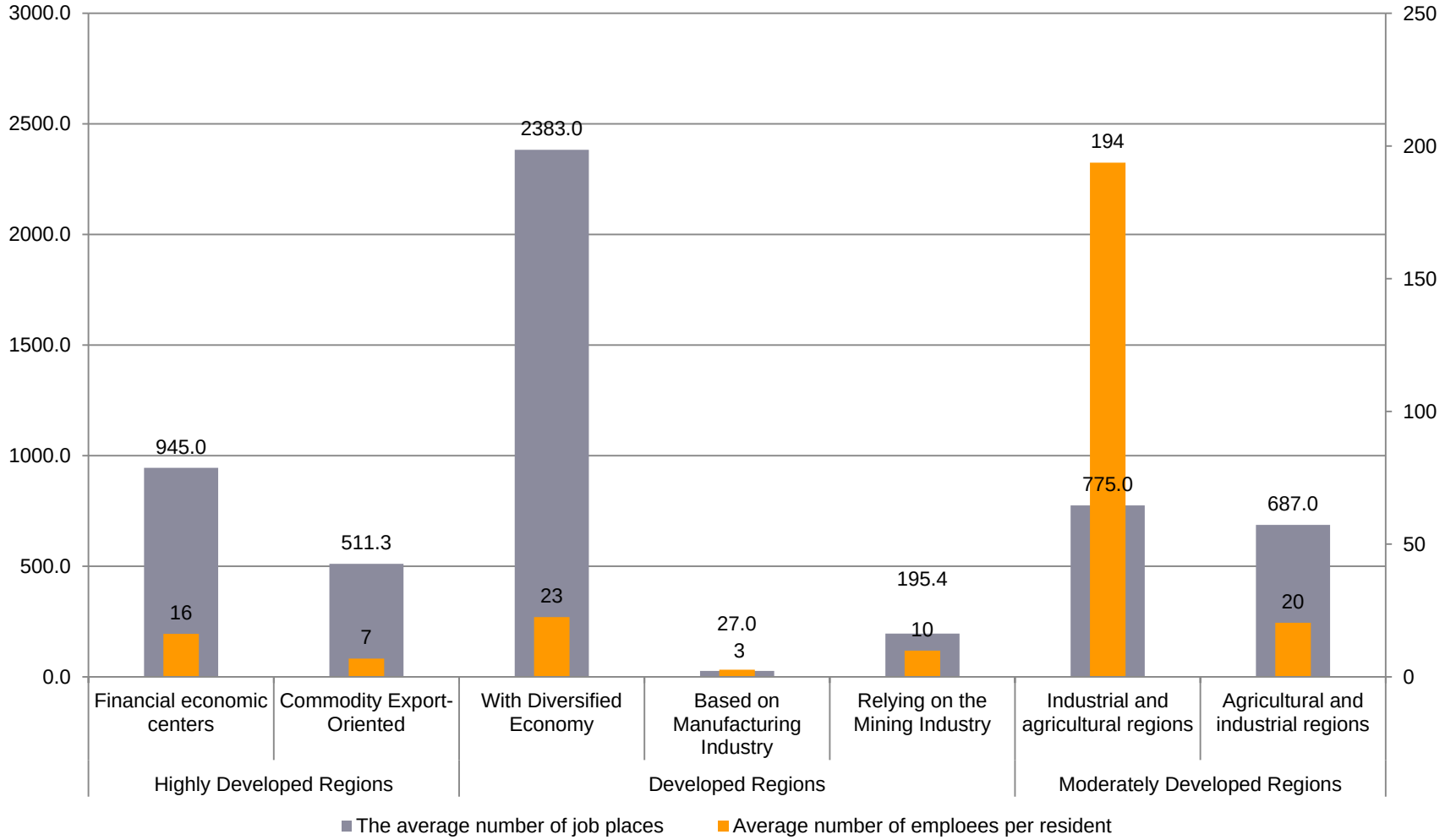
Source: The Association of Clusters and Technological Parks, author's calculations

Comparison of the average residents' productivity and the total revenue of the technological parks within the classification groups.



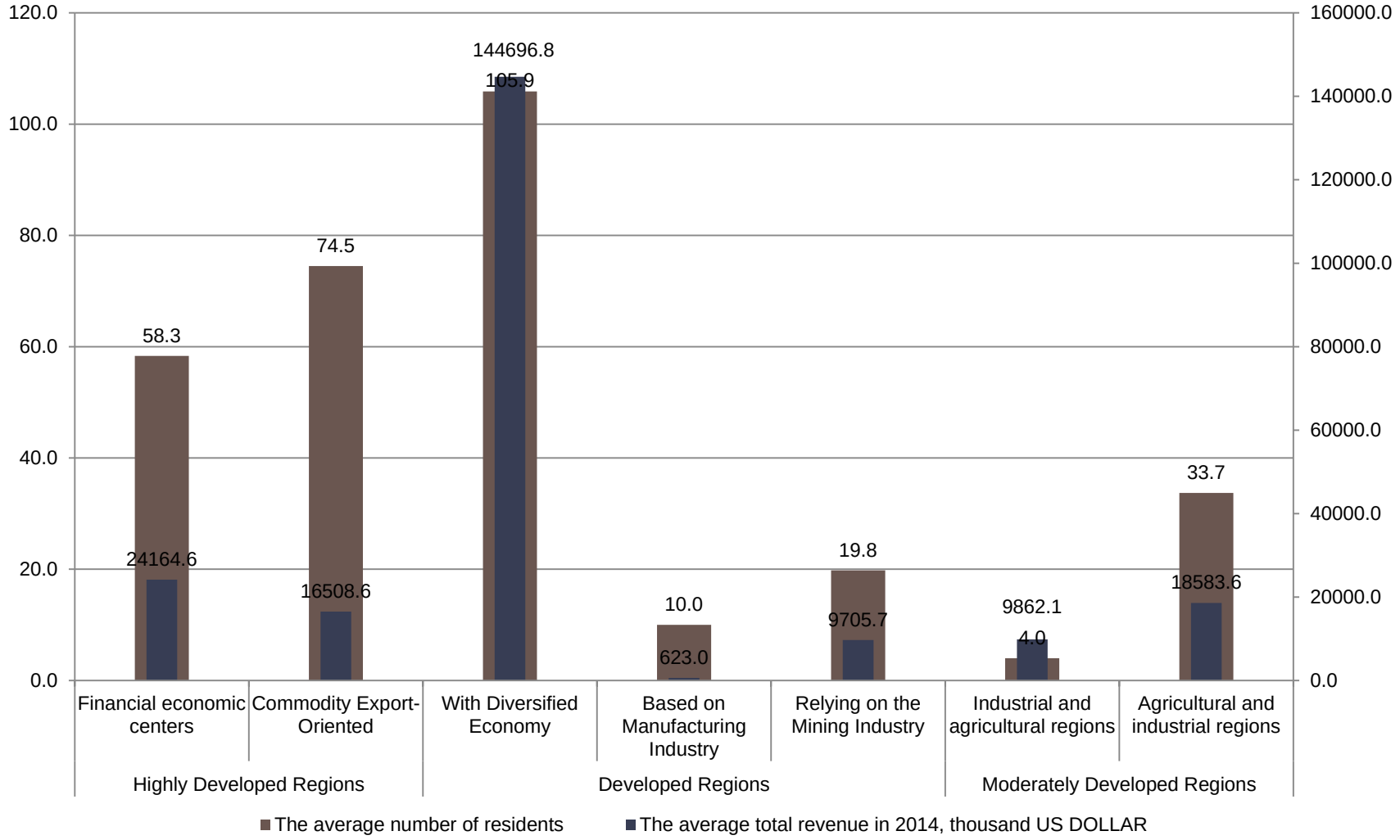
Source: The Association of Clusters and Technological Parks, author's calculations

Comparison of the average number of job places and the average number of employee per resident of the technological parks within the classification groups.



Source: The Association of Clusters and Technological Parks, author's calculations

Comparison of the average number of residents and average total revenue of technological parks.



Source: The Association of Clusters and Technological Parks, author's calculations

Routine issues

- Some of criteria of technological parks' activity lead to lack of results (the number of residents per technological park criteria lead to competition decreasing between the residents, the quality of projects and inefficient supporting efforts).
- The difficulty to overcome the pre seed and seed stages.
- The lack of acceleration and mentors activities.
- Open communication space absence inside the technological parks (closed rooms).
- Bad quality of infrastructure (old computers)
- Downtime of an equipment (management issue)
- Information asymmetry in niches and investors interests.

Conclusion 2

- The difference between the regions inside the groups can be explained by the success in routing issues solving and the personal impact of policy makers (Governors).
- The highest average residents annual productivity is 60,7 thousand dollars per employee is in the regions with the diversified economy of the Developed group.
- The same regions generate the most amount of job places (2383 in 2015) with 23 employees per resident in average (small residents).
- It is not clear comparison of technological parks because of there is no unique methodology of total revenue calculation and resident policies.

The remote sensing as the narrow scope of technological parks residents' activity.

The remote sensing for the territory development is not presented in the technological parks nowadays. But, it has potential and demand on innovative approaches.

The projects on complex monitoring of urban and rural areas and analysis of the dynamics of changes can be implemented for the following areas:

- Construction
- Land use and timber cutting
- Transport
- Vegetation and harvest forecast
- Fires and waste dump monitoring

etc.

Example 0. Land use. Monitoring and management.

Borrowed pit mine

and lakes

Timber cutting and floods

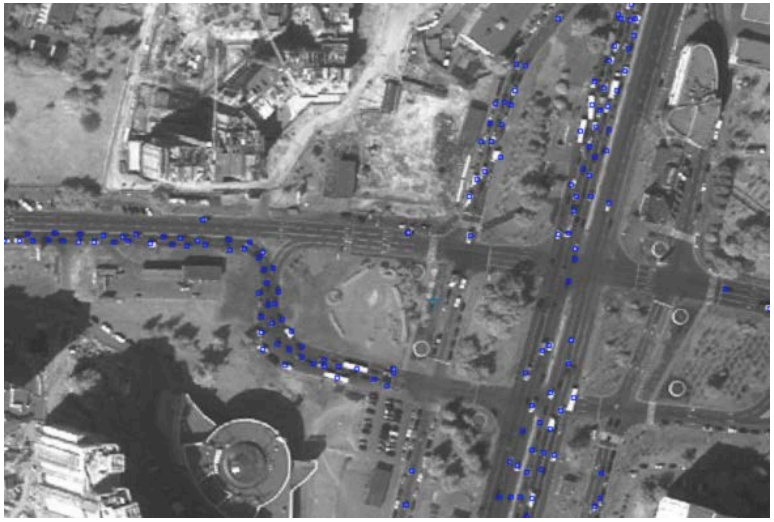
Example 1. Monitoring and management.

Land use

The associated gas burning and oil pollution

Example 2 TRANSPORT

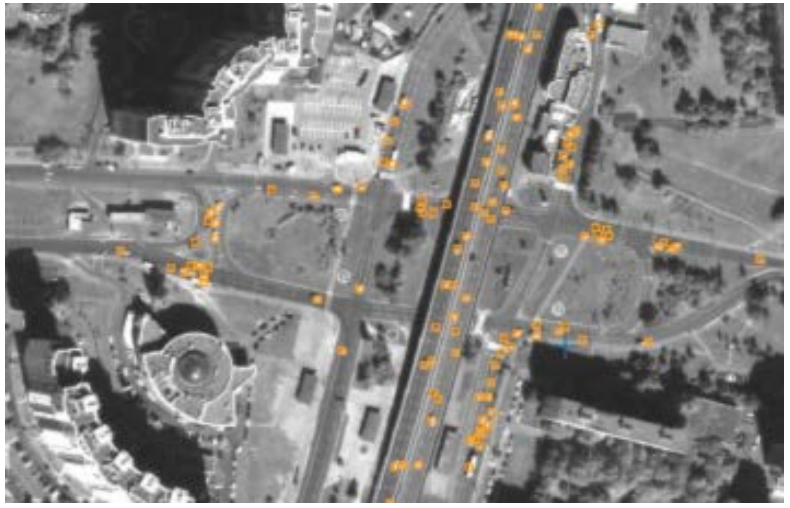
Traffic situation before reconstruction



Monitoring of reconstruction

Construction of fly-over intersection

Traffic situation after reconstruction



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Example 3 CONSTRUCTION

2009

2011

2015

Change detection algorithm

The changes are highlighted in red and green

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Thank you!

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