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## INVESTMENT ATTRACTIVENESS AND REAL SECTOR OF ECONOMY

**E. Kolchinskaya,**National Research University Higher School of Economics (HSE), **Russia****ABSTRACT**

**Purpose.** To attract investments in the economy of the country is very important. Rise in the standard of living of the population, the increase in the scale of the real sector and other effects of investments in the region result in improving regional infrastructure, which, in turn, improves the investment attractiveness of the region. The paper will present the results of empirical research of described regularities. So purpose of this article is research of correlation between the investment attractiveness of Russian regions and the dynamics of development of the real sector in these regions.

**Methods.** To evaluate the performance results of enterprises of the real sector of Russia the method used by the author earlier for the study of the economy of Northwestern Federal District has been adapted. Integral values for each activity of the regions are calculated. According to the results of calculations the regions are divided into 6 groups. And then this results compared with the numerical values of the investment potential and investment risk of regions.

**Results.** The data only partially evidence on the direct dependence of the successful work of the real sector on the level of investment attractiveness of the region in the years preceding the period in question. Consideration of backflow, i.e. influence of successful work of the real sector on the increase of the investment attractiveness of the region, gave results similar to the previous case.

**Conclusions.** It can be said that the hypotheses advanced in the beginning of the article have been confirmed, although not in full. Most regions that had unfavorable investment climate at the beginning of the years 2000 showed low integral indices of the real sector performance in subsequent years. The conclusion is clear – the absence of attractive environment for investors, deprives the real sector of opportunity to obtain funds for the development and, accordingly, there is no development. Without the development of the real sector the region has neither the funds nor the incentives to improve their investment climate.

**Keywords:** manufacturing, investment attractiveness, production function, real sector of economy

**JEL Code:** R11, L11, O14

**INTRODUCTION**

The growing production, on the one hand, requires infrastructure improvements to meet their needs, and on the other hand, by paying taxes, provides resources for regional investments in this improvement. The growth of population employment leads to an increase in the welfare of citizens and, consequently, increases the demand for services in the region (fig. 1).

Many authors write about this correlations. Rosecrance R., Thompson P. [3] say about trade, foreign investment, and security. Song L., Geenhuizen M. [4] say about influence of port infrastructure investment on regional economic growth in China. Srvoiu G., Uaicu M. [5] research foreign Direct Investment Models, based on Country Risk for Some Post-socialist Central and Eastern European. Dixit A. [1] writes about correlation between international trade, foreign direct investment, and security.

Some articles are about investment climate. For example, Escribano A., Pena J., J. Guasch J. L. [2] try to find alternative methods of dealing with missing values in investment climate surveys.

However, the real data check is of considerable interest – weather the described regularity and the assessment of the degree of mutual influence are always observed in the Russian economy. For the purpose of this test and evaluation in this paper, a comparison of the data on the investment attractiveness of Russian regions with the assessment of the dynamics of development of the real sector in these regions.

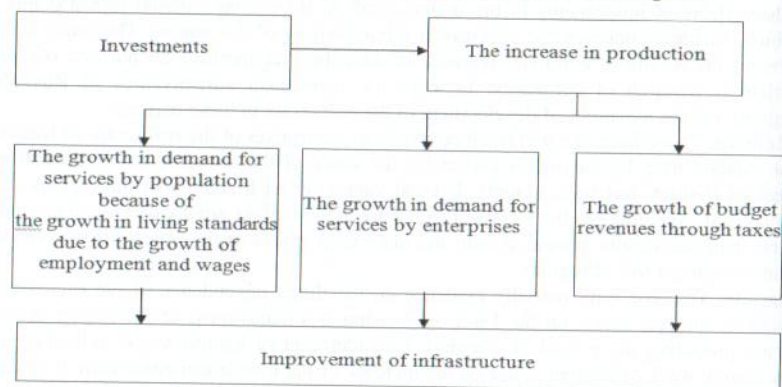


Figure 1 - Interaction of investments in the region and the growth of the real sector.

The tested hypothesis:

1. The assumption that the regions had a favorable investment climate at the beginning of the years 2000 will show in the coming years a positive dynamics of the integral index of the real sector activity.

2. The hypothesis that the regions had a high value of the integral index of the real sector activity at the beginning of the years 2000 in the 2014 year will have a favorable investment climate.

The paper will present the results of empirical research of described regularities. The aim of this research is to test these regularities and identify ways for further econometric research.

Very popular domestic research of investment attractiveness of regions is the paper of the rating agency "RA Expert"<sup>1</sup>.

The results of this evaluation will be used in this article. Among foreign papers in assessment of investment attractiveness Gdansk Institute for Market Economy [6] should be noted. The object of investigation here are Poland regions.

The approach of this paper and RA Expert method are quite similar. But in the Polish paper each component of the investment attractiveness is described in more details and the list of indices is provided.

Despite this, this method cannot be applied to study Russian regions, as baseline data used for Polish economy analysis are not all available for Russia. Thus, the review of the literature on the subject of the article allows to conclude that

<sup>1</sup> <http://www.raexpert.ru>

issues of the dynamics of the modern researchers are interested in real sector development depending on various indices, the investment attractiveness of the region. However, research works on the interaction of these two indices could not be found.

**Methodology.**

As part of the real sector of the region economy will cover the following activities: agriculture, hunting and forestry, fishing and fish farming; mining; manufacturing; production and distribution of electricity, gas and water; construction; transport and communications.

Initially, in all regions of Russia, the particular indices for each type of economic activity are calculated: the turnover of organizations, the net financial result of organizations and the volume of investments in fixed capital stock. All these indices are taken in a comparable form, i.e. per thousand people employed in this kind of activity. The list of the indices is determined by presence of statistical data. There are no anymore indices by regions and by economic sectors. We realized that this list is not complete and in the integral index of the region real sector operating more indices should be putted on. This assumption will be taken into account in conclusions.

Further particular indices are standardized according to the following formula:

$$P_{si}^* = \frac{P_{si}}{P_s} \quad (1),$$

where:

- $P_{si}^*$  - normalized value of s-th particular index for i-th region;
- $P_{si}$  - numeric value of s-th particular index for i-th region;
- $P_s$  - numeric value of s-th index in average for all regions of Russia.

Further particular indices are resulted in integral values for each activity of the regions:

$$M_{ji} = \sum_{s=1}^c P_{sji}^* k_s \quad (2),$$

where:

- $M_{ji}$  - integral level of enterprises state for j-th activity of i-th region;
- $c$  - quantity (similar for all regions) of resulted normalized particular indices;

$k_s$  - weighing factor of significance for s-th particular index set by expert way.

In conclusion, the integrated indices for each activity can be resulted in the enterprise integral index of the region real sector operating rate by means of weighing factor, which is taken as a proportion of the number of employees at the enterprises of this kind of activity in the total number of people employed in the real sector of the region. According to the results of calculations the regions are divided into 6 groups:

**Group RS1.** The value of the integral index of the region real sector performance for the entire affected period is no more than 0.7.

**Group RS2.** The value of the integral index of the region real sector performance for the entire affected period is from 0.8 to 1.0.

**Group RS3.** The region, which had different values of the integral index of the region real sector performance in different years, but in 2011 it was less than 1.

**Group RS4.** The region, which had different values of the integral index of the region real sector performance in different years, but in 2011 it was not less than 1.

**Group RS5.** The value of the integral index of the region real sector performance for all years is from 1.0 to 1.6.

**Group RS6.** The value of the integral index of the region real sector performance for all years is not less than 1.7.

As the evaluation of investment attractiveness of the regions the results of the RA Expert rating for 2001–2002 and for 2014 are used. The numerical values of the investment potential and investment risk of regions are taken.

**RESULTS**

At first a correlation between the activity of the real sector by the scale of the investment attractiveness of the region was checked. The results of regression are presented in Table 1. The coefficient of the investment potential is significant only in the pooled model and not very big. The meaning of the coefficients are similar in the all models. The coefficient of the investment risk is significant and sufficiently large. So we say that the first hypothesis wasn't checked out because only investment risk in the region have strong negative influence on the activity of the real sector.

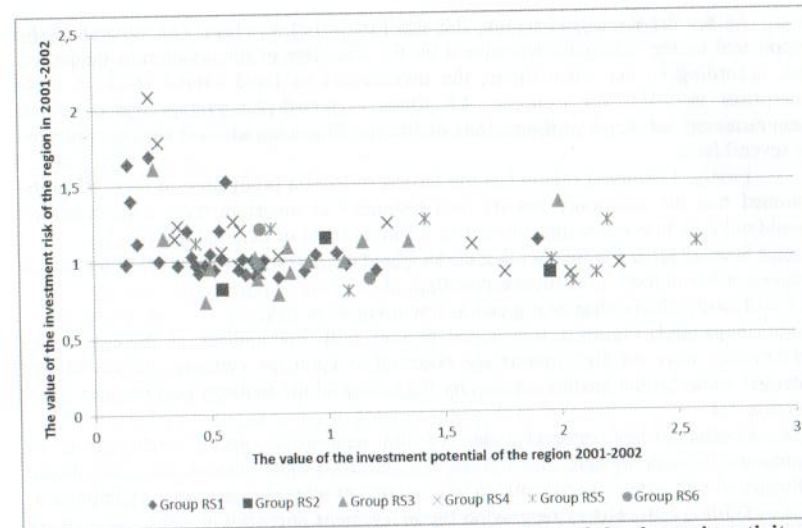
**Table 1 – Results of regression the activity of the real sector in 2005–2013.**

Variable	Models		
	pooled OLS	between	RE
investment potential 2001-2002	0,14 (0,36)***	0,14 (0,9)	0,14 (0,9)
investment risk 2001-2002	-2,04 (0,26)***	-2,04 (0,68)***	-2,04 (0,68)***
const	1,47 (0,10)***	1,47 (0,27)***	1,47 (0,27)***

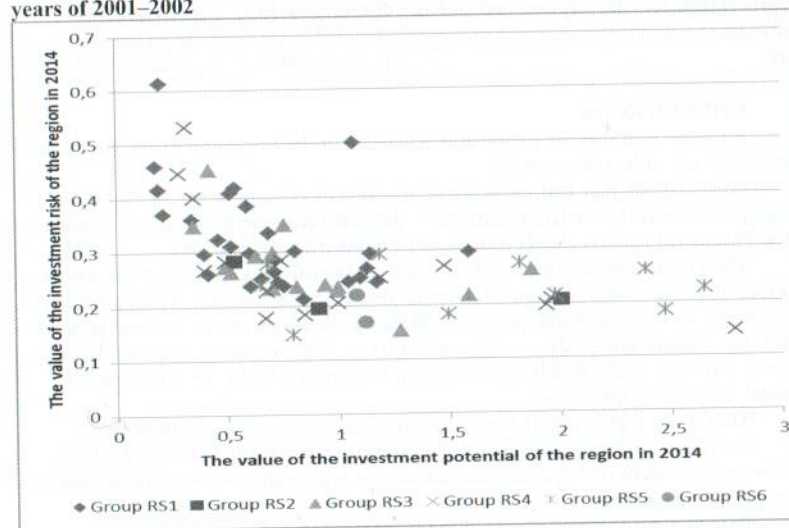
It is interesting to consider attentively the data. We can see in Figure 2 that the index value of the investment potential in almost all regions belonging to a group of outsiders in the real sector operation (group RS1), does not exceed 1.2. The exception is the Kemerov region, its investment potential is 1.9.

On the other hand both regions of a top group (group RS6) – Leningrad and Tyumen region had the value of the investment potential not very big in 2001–2002. It should be mentioned that on the basis of the calculation method used for the integral index of the real sector performance, a significant impact on the index value has a volume of investments in fixed capital stock of enterprises. That is, in both these regions, in spite of their low investment potential, during the reporting period there have been significant investments in the real sector enterprises.

Consideration of backflow, i.e. influence of successful work of the real sector on the increase of the investment attractiveness of the region, gave results similar to the previous case (Figure 3). Leningrad and Tyumen region had the value of the investment potential not very big in in this period too. Tyumen region is specialized in extractive industries, to attract investment in which it is enough to have fossil deposits, special investment climate is not required.



**Figure 2 - Distribution of regions with different values of the dynamic activity of the real sector by the scale of the investment attractiveness of the region for the years of 2001–2002**



**Figure 3 - Distribution of regions with different values of the dynamic activity of the real sector by the scale of the investment attractiveness of the region for the years of 2014**

As for the Leningrad region, the situation is not so clear. The success of the region real sector is largely determined by the activities of manufacturing industries, and, according to our calculations, the investments in fixed capital stock in these enterprises in 2011, for example, 4.8 times exceeded the average value for all manufacturing industries of the regions of Russia. This contradiction can be explained by several facts.

Firstly, Leningrad region has the largest in Russia production of cars. It can be assumed that the monopoly has its own resources to invest in itself and, therefore, should not seek to become more attractive for investment of external funds.

Secondly, despite the fact that in the whole the investment potential of the area is reduced, it has higher infrastructure potential.

Thirdly, the Leningrad region has low investment risk.

In general, Figure 3 shows that regions with low indices of the real sector performance have no high investment potential and, on the contrary, the investment potential value for the leading regions by the results of the industry performance is not less than 1.1.

Coefficients of integral index of the region real sector performance are significant in both models, but not so big (table 2). That means, that statistically influence of real sector of economy on investment attractiveness are not very important.

**Table 2 – Results of regression the investment potential in 2013.**

Variable	Models	
	pooled OLS	between
integral index of the region real sector performance	0,35 (0,05)***	0,41 (0,14)***
const	0,55 (0,05)***	1,49 (0,15)***

## CONCLUSIONS

It can be said that the hypotheses advanced in the beginning of the article have been confirmed, although not in full.

Most regions that had unfavorable investment climate at the beginning of the years 2000 showed low integral indices of the real sector performance in subsequent years. This dependence is clearly illustrated by collected statistical data.

The conclusion is clear – the absence of attractive environment for investors, deprives the real sector of opportunity to obtain funds for the development and, accordingly, there is no development. Without the development of the real sector the region has neither the funds nor the incentives to improve their investment climate. There is a vicious circle, which apparently can be broken only by the active measures of regional and federal authorities.

That is, the region itself has no internal sources to improve the situation.

However, the study showed that low investment attractiveness of the region is not always the result of poor performance of the real sector. Some regions does not show such dependence.

Based on the obtained results, it can be assumed that the availability of favorable investment climate is less important for the development of extractive industries and large enterprises that are monopolists.

In general, the empirical study provided information on the general trends in the dependence between the real sector of the region's economy and its investment

attractiveness. Therefore, further work in this area is planned to continue with the use of more complex econometric methods.

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