

# We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900

Open access books available

185,000

International authors and editors

200M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index  
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?  
Contact [book.department@intechopen.com](mailto:book.department@intechopen.com)

Numbers displayed above are based on latest data collected.  
For more information visit [www.intechopen.com](http://www.intechopen.com)



---

# Statistical Research of Investment Appeal of Russian Regions

---

Burtseva Tatiana Alexandrovna

Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/intechopen.75465>

---

## Abstract

In this chapter, the methodological results directed on realization statistical research of investment appeal of Russian regions are offered. Methodological basis of research is the method of the dynamic standard, index and the coefficient analysis and the method of paired comparisons. The results of the study: (1) the method of the dynamic standard for creation of statistical model of region investment appeal is offered; (2) the normative model of region investment appeal to measure the productivity of the realization of regions investment policy in Russia is created; (3) new factors of region investment appeal are investigated and (4) statistically valid conclusions are drawn and practical recommendations are made. The results of the study are addressed to the Ministry of Economic Development of the Russian Federation in order to justify the amount of federal targeted investment programs financing in Russian regions.

**Keywords:** factors of region investment appeal, efficiency of regional investment policy, the system of region investment appeal, the normative model of region investment appeal, integrated statistical indicator

---

## 1. Introduction

Today, the regional policy becomes a key factor of the successful solution to some problems of economy modernization, investment, innovative activity and population life quality improvement. For the last decades, the Russian regions stored a vast experience of the economic development problem solution, which are worth to be studied and generalized. The last institutional changes in world politics constrain rethinking and keeping up to date approaches to managing social and economic development of regions. It brings to the forefront the questions of

measurement and analysis of the productivity of the public and municipal administration in the new conditions. In this regard, the development of the methodology of statistical research of the strengthening investment attractiveness of the Russian region using modern regional investment policy mechanisms is deemed relevant. Attention is drawn to taking into account the regional space heterogeneity, a wide range of factors that are not always unequivocally affect investment attractiveness, occasionally forced necessity to develop dynamic models on the basis of data from short-time intervals. In this regard, methodology of statistical research of investment appeal development of the Russian region is actually represented. The purpose is a success assessment converting by means of modern investment policy mechanisms in the regions. Therefore, methodological development for realization investment appeal statistical research of the Russian regions, and its results should provide carrying out a statistical assessment complex of realization productivity of regional investment policy. This policy must be adequate to the Russian state development statistics.

This chapter reveals the author ideas on solving the abovementioned issues, which, in her opinion makes them relevant not only for the theory but also for the practice of statistical research of the regional investment situation, including the terms of its development prospects.

The main result for statistical science is the normative model of region investment appeal to measure the productivity of the realization of regions' investment policy in Russia.

The main results of a research of the author for economic science: (1) the method of the dynamic standard for creation of statistical model of region investment appeal is offered and (2) new factors of region investment appeal are investigated.

The results of the study are addressed to the Ministry of Economic Development of the Russian Federation in order to justify the amount of federal targeted investment programs financing in Russian regions.

## 2. Literature review

The role of investment as a factor of economic growth was justified by English scientist-economist Keynes [1]. He was the first who developed a macroeconomic model, which established the relationship between investment, employment, consumption and income, thereby justifying the leading role of the state in regulating the market economy in a period of instability and crises [2]. According to Keynes, the investment activity in the country is primarily determined by the expected return on investment. The growth of savings by itself has no effect on these expectations and does not automatically lead to an increase in investment. Therefore, Keynes detected the purpose of government in the impact on the change in the volume of public investment and level of the marginal profitability of capital investments. In the current context within the economic theory, it is customary to believe that a volume of budget investment has a significant impact on the growth of gross domestic product (the main gauge of economic growth at the global level). This thesis is based on the multiplier effect, which was also suggested by Keynes. This thesis is the only theoretical justification of the need of state investment in the economy [3].

At the moment, many states and regions do not have the opportunity to develop their economies through public investment. This makes it necessary to attract foreign investment. Therefore, state policy includes the goal of creating a favorable investment climate for foreign investors. The investment climate of the region is recognized by the international community as one of the main characteristics of the success of its economy development; therefore, the scientific interest in measuring the region investment appeal is constantly growing. Experts of the World Bank in the report "A Better Investment Climate for Everyone" for 2005 define investment climate as "the many location-specific factors that shape the opportunities and incentives for firms to invest productively, create jobs, and expand".

Porter has proposed to understand country's competitiveness and investment appeal as the productivity of using its resources [4, 5]. According to the author, this must be taken into account when assessing the investment climate of the country and the region.

So far, the large number works of domestic and foreign scientists are devoted to investment subject and investment regional appeal. Also, a lot of reports on the carried-out practical researches and recommendations about investment policy improvement at different management levels were prepared.

The most important achievements of basic Russian researches in the field of regional economics are connected with Schools of Sciences by the academician Lvov (research of management efficiency problems) and academician Granberg (research of structural regions distinctions on formation and distribution of investment resources) [6], [29]. Methodology of statistical research of economic development asymmetry of the Russian regions developed by Burtseva [7], Zubarevich [8] and other authors. Investment appeal of regions and branches of economy was considered in works by Frenkel et al. [9].

The analysis of the works devoted to the theory of investment market and investment modeling allows to allocate two conditional research directions. The first direction includes research developing general provisions of economic theory, namely, research of economic balance and economic growth. Within the second direction, actually economical and statistical research of investment is carried out. Generalization and ordering of scientific research on various aspects of statistical measurement of regional investment appeal and development reveal existence of a whole complex of insufficiently studied problems in assessing productivity of regional investment policy realization.

We should note actual problems of statistical research of the region investment appeal: regional space heterogeneity, wide range of factors, need to use dynamic models on small time spans. To solve these problems, it is proposed to develop a normative model that allows to obtain a quantitative level of balance in the indicators relative to each other and to identify the slowing or rising indicators, which will provide an integral statistical measure of the region investment appeal.

Solving these problems will allow providing new quality of an important problem of the state strategic planning—monitoring of investment strategy and medium-term programs of social and economic development of subjects for the Russian Federation.

Methodological development offered by the author allows to overcome successfully listed problems and also develops the methodology of statistical research of regional investment appeal according to the concept of the Russian state statistics development, which makes them relevant not only for theory but also for the practice of statistical research of the investment regional situation, including in perspective of its development.

The proposed methodological developments expand the methodology of Kaplan and Norton [10]. They allow realizing the monitoring of region investment policy on the basis of an integral statistical measure of the region investment appeal. The quantitative level of the integral statistical measure is the proportion of the number of completed relationships between the growth rates of the actual indicators characterizing a particular investigated object to the number of given ratios in the normative model.

### 3. The method of the dynamic standard

The essence of the method of the dynamic standard is the formation in accordance with some objective (e.g., maximization of the company's profit, increasing the cost of equity, increasing regional investment appeal), groups of indicators characterizing the purpose and, to the greatest extent, reflecting the real state of the object of research in dynamics. The quantitative composition of the indicators should be no lower than the established (no less than 6 and no more than 25). The method of the dynamic standard is the procedure of selection of economic indicators and their ordering.

The main idea of the method belongs to Syroezhin [11], it was further developed by his students [12]. It consists of the fact that not commensurable indicators in statics become commensurable in dynamics.

In modern scientific works and publications, there are examples of the application of the method of dynamic standard [13–17].

Syroezhin noticed that noncomparable static characteristics of the national economy are comparable in dynamics. The proposed dynamic standard is organized by pace (coefficients, indexes) growth (or base chain) set (system) of indicators, such that maintaining for a long-time interval specified in a dynamic normative order of indicators provides the maximization of integral evaluation. Form of expression the ordering of the indicators is the ranking of performance (assigning grades), if not all indicators are able to link strictly in order, the presentation days to serve the count of preferences and/or the corresponding matrix of preferences, in this case, the integral meter has the form of a normative model. The quantitative level of the integrated meter (integrated assessment) in this case is the ratio of the number of performed correlations between growth rates (indices) of growth of actual indicators characterizing the specific object under study, to the number of set relations in a normative model. Accordingly, the resulting quantitative levels vary in the range from 0 to 1, the closer the value is to 1, the more quantitative is the valuation level.

The algorithm for constructing normative models is disclosed in detail in the work of Pohostinsky [18]. The normative model differs from the matrix of preferences and its indicators

are categorized by the transitive property, and this allows to obtain always a single measurement result.

Advantages of the method over other methods of building an integrated measure, for example, multidimensional average, are as follows:

1. it provides a complex convolution of directly incommensurable indicators, reflecting different aspects of the functioning of the economic system (presented in ordinal scale of measurement);
2. it makes possible to obtain integral evaluation, which is an integral meter, which characterize the system by studying the property as a whole taking into account the relationship of phenomena within it;
3. the normative model, each figure retains its own role and there is no effect of cancelation "positive" and "negative" changes captured by different indicators;
4. it has a high information capacity, which allows to obtain a dynamic integrated assessment based on a large number of indicators at a short time sample of observations, for example, only two periods to build an evaluation and three periods to sort the indicators and their groups (factors), its relative growth.

## 4. Research algorithm

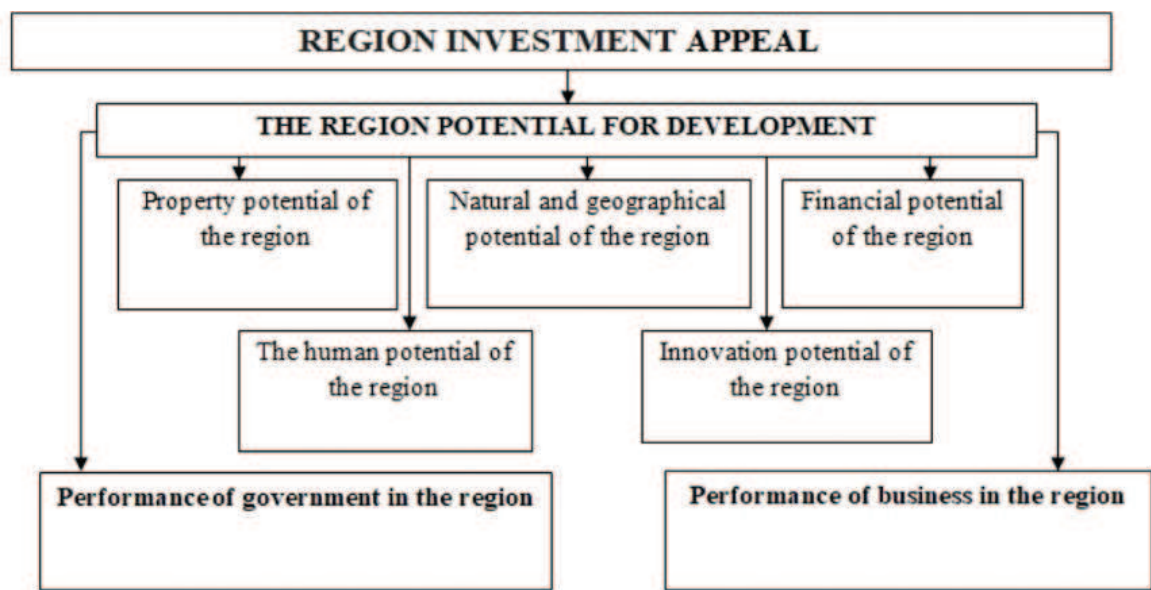
### 4.1. Step 1: indicators of region investment appeal

The classical concept of "*investment appeal*" means the existence of certain investment conditions that affect the investor's goals and determine its choice when considering investment objects. The efficiency of the investment policy of the region is characterized by the degree of achievement of long-term goals of its development, the reproduction of the potential of the region and the growth of the quality of life of the population. Therefore, from our point of view, region investment appeal (RIA) is a complex of natural, geographical and socioeconomic factors that determine the effectiveness of the investment policy of the region and its socioeconomic development.

For the statistical research of investment appeal of Russian regions is proposed to use an integrated statistical indicator, which is based on measures that assess the "state of capacity development in the region" and the influence of the factors such as "the performance of business activities in the region" and "the performance of activities of public administration bodies in the region." **Figure 1** shows the structure of regional investment appeal. This interpretation is based on the scientific idea that the RIA is determined not only by the factors of the investment potential of the region, but also by the factors of the effectiveness of its investment policy.

Statistical estimation of the region potential is a traditional task of statistical measurement. The region potential includes components such as natural and geographical potential, property potential, financial potential, human potential and innovative potential. New for statistical measurement of its factors are "performance of government in the region" and "performance of business in the region."





**Figure 1.** The structure of the region investment appeal as an object of statistical study.

Statistical assessment and monitoring of these factors are new tasks of statistical research. Their solution requires improvement and refinement of the methodology of statistical research of RIA in the search for adequate scientific methods of assessment, the principles of the formation of its information basis.

The study of existing methods for estimating RIA (the methodology of the agency “Universe,” the agency “Expert-RA” and others) made it possible to find out that a large number of statistical indicators are used for its construction. The solution of such a problem became possible in the framework of the system approach. Therefore, the region was considered by us as a socio-economic system, and its investment attractiveness as its system-wide property, for the study of which a system of statistical indicators was formed. It consists of indicators that assess the potential and the results of the development of the region, which characterize the identified factors of the RIA. Absolute indicators selected in the system are presented in **Table 1**.

**4.2. Step 2: the normative model of region investment appeal**

The dynamic standard and the normative model of region investment appeal are presented in **Tables 2** and **3**. Formalization of the dynamic standard was tested using pairwise comparisons in accordance with targets of research (see **Table 2**). If, in accordance with the target installation rate in the row of the matrix needs to grow faster than the rate in the column below target was performed setting the “growth” that is put in matrix 1 at the intersection of row and column, while the symmetrical choice is -1. Otherwise, the -1, while the symmetric place puts 1. If relationship between the indicators is not set, then put a zero, the matrix diagonal has only zeros. Thus, in the matrix set 49 targets.

Formally, the dynamic standard of preferences is set by a matrix  $(E = \{e_{ij}\}_{n \times n})$ , each element of which reflects the normative relation between performance (faster/slower) of the row and column of the matrix (see **Table 2**).

No.	Indicator name
<i>Factor "Potential for development of the region"</i>	
1	Population in the region
2	Value of fixed assets in the region
3	Residual value of fixed assets of the region
4	Internal costs for research and development of the region
5	Investments in fixed assets (Capex)
<i>Factor "Performance of government in the region"</i>	
6	Number of employed in the economy of the region
7	Incomes of the population of the region
8	Total number of unemployed in the region
9	Fund for remuneration of workers in the region
10	Gross regional product (GRP)
11	Tax revenues of the consolidated budget of the region
12	Revenues of the consolidated budget of the region
13	Expenditures of the consolidated budget of the region
<i>Factor "Performance of business in the region"</i>	
14	Balanced financial performance of organizations in the region
15	Number of employees employed in small enterprises in the region
16	Number of small enterprises in the region
17	Number of organizations in the region
18	The number of unprofitable organizations in the region

**Table 1.** Absolute indicators of RIA ( $P_i$ ).

The matrix E is described as follows:

$$e_{ij} = \begin{cases} 1, & \text{if } GR(P_i) > GR(P_j) ; \\ -1, & \text{if } GR(P_i) < GR(P_j) ; \\ 0, & \text{if the reference} \\ & \text{ratio between} \\ & GR(P_i) \text{ and } GR(P_j), \end{cases} \quad (1)$$

where  $i, j$  are the numbers of indicators in DS;  $P_i, P_j$  are indicators having the  $i$ -th and  $j$ -th numbers in DS, respectively;  $GR(P_i) > GR(P_j)$  and  $GR(P_i) < GR(P_j)$  are reference of ratio between rates (indices) of growth.



No and indicator name in DS, Pi	No indicator in DS																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Population in the region	0	-1	-1	-1	0	0	-1	-1	-1	-1	-1	0	-1	-1	0	0	-1	1
2. Incomes of the population of the region	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
3. Number of employed in the economy of the region	1	0	0	-1	1	-1	-1	-1	-1	0	0	0	0	-1	0	0	-1	0
4. Number of employees employed in small enterprises in the region	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5. Total number of unemployed in the region	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Fund for remuneration of workers in the region	0	-1	1	0	0	0	-1	0	0	0	-1	0	0	0	-1	0	0	0
7.GRP	1	0	1	0	0	1	0	1	1	0	0	0	-1	1	-1	1	1	1
8. Value of fixed assets in the region	1	0	1	0	0	0	-1	0	-1	0	1	0	0	-1	0	0	0	0
9. Residual value of fixed assets of the region	1	0	1	0	0	0	-1	1	0	0	1	0	0	-1	0	0	0	0
10. Number of small enterprises in the region	1	0	0	-1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
11. Number of organizations in the region	1	0	0	0	0	1	0	-1	-1	-1	0	1	-1	-1	-1	1	0	0
12. Number of unprofitable organizations in the region	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0
13. Internal costs for research and development of the region	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
14.Capex	1	0	1	0	0	0	-1	1	1	0	1	0	0	0	-1	0	0	0
15. Balanced financial performance of organizations in the region	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0
16. Tax revenues of the consolidated budget of the region	0	-1	0	0	0	0	-1	0	0	0	-1	0	0	0	0	0	1	1
17. Revenues of the consolidated budget of the region	1	0	1	0	0	0	-1	0	0	0	0	0	0	0	0	-1	0	1
18. Expenditures of the consolidated budget of the region	-1	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	-1	-1	0

**Table 2.** The dynamic standard (DS) of region investment attractiveness.

Thus, formed matrix E, after identifying additional relationships, is a normative model (Table 3).

Reflection of the results of the adopted and implemented managerial decisions is the actual relation matrix of indicators  $P_i$ . The closer the actual ordering of the indices to a given normative order in the model, the higher is the level of region investment attractiveness. The matrix of actual correlations of growth performance ( $F = \{f_{ij}\}_{n \times n}$ ) is described as follows:

$$f_{ij} = \begin{cases} 1, & \text{if } GR(P_i) > GR(P_j) ; \\ -1, & \text{if } GR(P_i) < GR(P_j) ; \\ 0, & \text{if } GR(P_i) = GR(P_j), \end{cases} \quad (2)$$

where  $i, j$  are the numbers of indicators;  $P_i, P_j$  are indicators having the  $i$ -th and  $j$ -th numbers, respectively;  $GR(P_i), GR(P_j)$  are actual rate (index) of growth of the  $i$ th and  $j$ th indicators, respectively.

An integrated assessment of region investment attractiveness is the estimation of proximity of actual and normative models set in order the rates (indices) of growth indicators ( $Y$ ).

$$Y = \frac{\sum_{i=1}^n \sum_{j=1}^n b_{ij}}{\sum_{i=1}^n \sum_{j=1}^n |e_{ij}|} \text{ where } b_{ij} = \begin{cases} 1, & \text{if } e_{ij} = 1 \text{ simultaneously with } f_{ij} \geq 0 ; \\ \text{or} \\ -1, & \text{if } e_{ij} = -1 \text{ simultaneously with } f_{ij} \leq 0 ; \\ 0, & \text{otherwise} \end{cases} \quad (3)$$

$n$  is the number of indicators in DD;  $i, j$  are the numbers of indicators in DD;  $b_{ij}$  is the element of the matrix of coincidence of actual and reference ratios of growth rates ( $B = \{b_{ij}\}_{n \times n}$ );  $e_{ij}$  is the element of the matrix NM,  $f_{ij}$  is the element of the matrix  $F = \{f_{ij}\}_{n \times n}$ .

Score  $Y$  varies from 0 to 1. Equal to 1, if all regulations set the ratio of the rate of improvement is actually implemented. Equal to 0, if the actual order of indices is opposite to the normative order of indicators in the model. The closer  $Y$  is to 1, the greater is the proportion of regulatory relationships between indicators implemented in reality.

The generated model can be considered as the factor system. The influence of each indicator on  $Y$  growth, which is the effective rate, determined by the formula:

$$\Delta Y(P_i) = \frac{\sum_{j=1}^n b_{ij}^0 - \sum_{j=1}^n b_{ij}^b}{\sum_{j=1}^n |e_{ij}|} \text{ and } b_{ij} = \begin{cases} 1, & \text{if } (e_{ij} = 1 \text{ and } f_{ij} \geq 0) \text{ or } (e_{ij} = -1 \text{ and } f_{ij} \leq 0) \\ 0, & \text{if others case} \end{cases} \quad (4)$$

where  $\Delta Y(P_i)$  is the increase in the assessment caused by the dynamics of the ratio of the growth rate of the  $i$ th indicator with others;  $n$  is the number of indicators;  $i, j$  are the numbers of indicators;  $b_{ij}^0, b_{ij}^b$  are the elements of the matrix of coincidence of actual and reference

No and indicator name in DS, Pi	No indicator in DS																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Population in the region	0	-1	-1	-1	0	-1	-1	-1	-1	-1	-1	0	-1	-1	-1	-1	-1	1
2. Incomes of the population of the region	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1
3. Number of employed in the economy of the region	1	-1	0	-1	1	-1	-1	-1	-1	-1	-1	0	-1	-1	-1	-1	-1	1
4. Number of employees employed in small enterprises in the region	1	0	1	0	1	1	0	0	0	1	1	1	0	0	0	1	1	1
5. Total number of unemployed in the region	0	-1	-1	-1	0	-1	-1	-1	-1	-1	-1	0	-1	-1	-1	-1	-1	0
6. Fund for remuneration of workers in the region	1	-1	1	-1	1	0	-1	-1	-1	-1	-1	0	-1	-1	-1	0	0	1
7.GRP	1	0	1	0	1	1	0	1	1	0	1	1	-1	1	-1	1	1	1
8. Value of fixed assets in the region	1	0	1	0	1	1	-1	0	-1	0	1	1	-1	-1	-1	1	1	1
9. Residual value of fixed assets of the region	1	0	1	0	1	1	-1	1	0	0	1	1	-1	-1	-1	1	1	1
10. Number of small enterprises in the region	1	0	1	-1	1	1	0	0	0	0	1	1	0	0	0	1	1	1
11. Number of organizations in the region	1	0	1	-1	1	1	-1	-1	-1	-1	0	1	-1	-1	-1	1	1	1
12. Number of unprofitable organizations in the region	0	0	0	-1	0	0	-1	-1	-1	-1	-1	0	-1	-1	-1	0	0	0
13. Internal costs for research and development of the region	1	0	1	0	1	1	1	1	1	0	1	1	0	1	0	1	1	1
14.Capex	1	0	1	0	1	1	-1	1	1	0	1	1	-1	0	-1	1	1	1
15. Balanced financial performance of organizations in the region	1	0	1	0	1	1	1	1	1	0	1	1	0	1	0	1	1	1
16. Tax revenues of the consolidated budget of the region	1	-1	1	-1	1	0	-1	-1	-1	-1	-1	0	-1	-1	-1	0	1	1
17. Revenues of the consolidated budget of the region	1	-1	1	-1	1	0	-1	-1	-1	-1	-1	0	-1	-1	-1	-1	0	1
18. Expenditures of the consolidated budget of the region	-1	-1	-1	-1	0	-1	-1	-1	-1	-1	-1	0	-1	-1	-1	-1	-1	0

Table 3. The normative model of region investment appeal.

ratios of rates (indices) of growth in current and base periods, respectively;  $e_{ij}$  is the matrix element of the reference relationships between the growth indicators.

### 4.3. Step 3: Calculations

In this chapter, the presented results allow to claim that the proposed methodological developments can be applied to a large variety of tasks related to the monitoring of development strategies of regions and other objects of strategic planning. The decline in balance performance or growth with their help received a quantitative rating, which in turn allows you to implement monitoring of investment strategy in the tactical period. This methodology does not require serious mathematical tools; however, if growth of indicators is necessary to apply automated processing for calculation of the estimates, so the author used her own computer program and implemented the development of regulatory models for integrating quantitative evaluations of the investment attractiveness of the region, the city and municipal district.

## 5. Results

As the periods of research are selected: 2001–2007 (base period) and 2009–2015 (reporting period) as well as chain dynamics for 2009–2015. The choice of study periods for the baseline dynamics is due to the fact that in 2006–2007, Russia and its regions were given an investment rating by international agencies. The sense of the reporting period is that this was the period when the regions of Russia left the financial crisis and actively attracted foreign investments, and implemented a large number of investment projects.

**Tables 4** and **5** show the quantitative levels of investment attractiveness of regions—leaders in Russia, calculated according to the author’s algorithm.

Thus, the imposition of sanctions in 2014 significantly affected the investment climate of the Kaluga region, since its economy is more dependent on the activities of foreign investors. For the Tula, Voronezh and Moscow regions, Moscow and Russia in general, the sanctions played a stimulating role.

Regions	Y		$\Delta Y$	National rating of investment attractiveness of regions in 2015
	2001–2007	2009–2015		
Tula region	0.57	0.79	0.22	2
Russia	0.69	0.76	0.08	—
Voronezh region	0.52	0.76	0.24	4
Moscow region	0.61	0.66	0.05	5
Kaluga region	0.65	0.61	−0.04	1
Moscow	0.69	0.52	−0.17	3

**Table 4.** Quantitative levels of investment attractiveness of regions.

No.	Regions	Y						
		2009	2010	2011	2012	2013	2014	2015
1	Tula region	0.45	0.67	0.70	0.61	0.51	0.52	0.83
2	Voronezh region	0.47	0.42	0.74	0.71	0.51	0.61	0.69
3	Moscow	0.54	0.54	0.39	0.68	0.42	0.57	0.61
4	Russia	0.54	0.64	0.63	0.77	0.53	0.50	0.53
5	Moscow region	0.55	0.72	0.65	0.59	0.55	0.40	0.43
6	Kaluga region	0.48	0.55	0.67	0.71	0.53	0.61	0.40

**Table 5.** Dynamics of quantitative levels of investment attractiveness of regions.

6. Recommendations

The author has conducted a research of dynamics of region investment appeal of the Kaluga region—the leader in formation of favorable investment climate for foreign investors and to creation of industrial parks in Russia. It is as a result proved that in connection with imposition of economic sanctions the area has faced development problems, namely, deterioration in a solvency of the population, employment and effectiveness of activity of small business. All this has brought to rating downgrade of area to “National rating a state of investment climate in territorial subjects of the Russian Federation.” For large businesses in the Kaluga region, the technology of creating industrial parks is effectively applied.

7. Conclusion

Author examines the effectiveness of region government policy on investment policy. Investment policy among her works plays a major role, through the human, innovation, and financial side and the development of strategies to attract investment. For realization of statistical research in Russia regions, she proposes normative model of region investment appeal, monitoring effectiveness of government and business for the development of the region. It is as a result proved that in connection with imposition of economic sanctions the leaders in formation of favorable investment climate in Russia regions have faced development problems. She proved that the imposition of sanctions in 2014 significantly affected the investment climate of the Kaluga region, since its economy is more dependent on the activities of foreign investors. For other leaders—the Tula, Voronezh, and Moscow regions, Moscow and Russia in general, the sanctions played a stimulating role.

Acknowledgements

The reported research was funded by Russian Foundation for Basic Research and the government of the Kaluga region of the Russian Federation, grant № 17-12-40003a(p) “Influence of

the results of financial and economic activity of enterprises of the commercial sector of the economy of an investment-attractive region on the achievement of the goals of its social and economic development (for the example of the Kaluga region)".

## Author details

Burtseva Tatiana Aleksandrovna

Address all correspondence to: [taburtseva@tksu.ru](mailto:taburtseva@tksu.ru)

Department of Management, Tsiolkovsky Kaluga State University, Kaluga, Russia

## References

- [1] Keynes JM. The Means to Prosperity. London: MacMillan and Co; 1933. 355 p
- [2] Keynes JM. The General Theory of Employment, Interest and Money. 2011. Direct access: <http://cas.umkc.edu/economics/people/facultypages/kregel/courses/econ645/winter2011/generaltheory.pdf>
- [3] McConnell KR, Brue SL. Economics in 2 volumes (Vol. 1. Economics: Principles, Problems, and Policies). Moscow: Infra-M; 2008
- [4] Porter ME. The competitive advantage of nations. Harvard Business Review. 1990;3:73-79
- [5] Russell M. The Russian economy: Will Russia ever catch up? European Parliamentary Research Service. 2015;28:36-42
- [6] Burtseva TA. Methodology of statistical research of investment attractiveness of Russian regions. Statistics Problems. 2015;1:29-45
- [7] Burtseva TA et al. Statistical research of investment development of Russian regions. International Journal of Environmental and Science Education. 2016;11:8182-8192. Direct access: <http://www.ijese.net/makale/1073>
- [8] Zubarevich NV. Regions of Russia: Inequality, crisis, modernization independent. Moscow: Institute of Social Policy; 2010
- [9] Frenkel AA et al. The rating of regions on an integrated indicator of investment attractiveness. 2009;1:56-60
- [10] Kaplan RS, Norton DP. Using the balanced scorecard as a strategic management system. Harvard Business Review. 1996:75-85
- [11] Syroezhin IM. Improving the System of Indicators of Efficiency and Quality. Moscow: Economics; 1980
- [12] Dragisa S. A comparative analysis of the economic movement on the basis of growth matrix. Socio-Economic Planning Sciences. 1986;20(2):75-78



- [13] Zakharchenko NN. Economic Measurement: Theory and Methods. Saint Petersburg: Saint Petersburg State University of Economics and Finance Press; 1993
- [14] Zavgorodniaia AV. Diagnosis and Modelling of the Environment of the Firm. Saint Petersburg: Saint Petersburg State University of Economics and Finance Press; 1999
- [15] Zhambekova RL. The methodology of the system of economic diagnostics of the enterprise: The Dissertation on competition of a scientific degree of the doctor of economic Sciences: 08.00.05. Saint Petersburg State University of Economics and Finance; 2000
- [16] Burtseva TA. Indicative model of monitoring the investment attractiveness of the region. Statistics Problems. 2009;6:37-45
- [17] Svetunkov SG, Zagranovskaia AV, Svetunkov IS. The Rating of Development of Regions and the Dynamics of their Socio-Economic Status. Complex-valued analysis and modeling of uneven socio-economic development of regions of Russia. 2012. [www.sergey.svetunkov.ru/economics/complex/MD2012](http://www.sergey.svetunkov.ru/economics/complex/MD2012)
- [18] Pogostinskiy YA. A Normative Model of System Analysis of Economic Activity of the Enterprise: Monograph. Saint Petersburg: Saint Petersburg State University of Economics and Finance Press; 1999