

Contributions to Economics

Elena G. Popkova *Editor*

Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management

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ISSN 1431-1933

ISSN 2197-7178 (electronic)

Contributions to Economics

ISBN 978-3-319-60695-8

ISBN 978-3-319-60696-5 (eBook)

DOI 10.1007/978-3-319-60696-5

Library of Congress Control Number: 2017949362

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Printed on acid-free paper

This Springer imprint is published by Springer Nature

The registered company is Springer International Publishing AG

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Foreword

This volume contains the results of the latest research by modern scholars on the issues of uncertainty about the institutional environment and tools for global crisis management that were the result of the conference held in Athens, Greece, in April 2017 (www.archilab.online). The conference enabled a unification of the knowledge and experience of scholars from various spheres of science to solve the actual problems of global crisis management and to develop conceptual and methodological provisions of a new institutional theory. In economics, institutional environment is a totality of the basic political, social, legal, and economic rules that determine the framework of human behavior and create a basis for production, exchange, and distribution. Thus, institutional environment is a clear and ordered set of institutes that determines the framework conditions of functioning and development of economic subjects.

The publication of the conference proceedings ensures the international translation of these developments and attracts experts from around the world to conduct further studies in this sphere. This volume presents various opinions and ideas in a field of increasing sustainability of the modern global economy and socio-economic systems, as well as increasing the predictability and greater effectiveness of the institutional environment.

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Introduction

The global economic system is currently at the stage of active formation and development. Its limit and terms of existence change constantly; this is accompanied by the crises that influence the economic systems of all the countries that are part of the global economy. To solve the problem of global economic crises, a new direction was formed in modern science: global crisis management. The development of this direction requires the formation of categorical machinery, development of corresponding scientific and methodological bases, and conduction of a series of practical research projects. The purpose of this volume is the scientific substantiation of the necessity and compilation of the methodological and practical recommendations for overcoming the uncertainty of the institutional environment for increasing the effectiveness of global crisis management of modern socio-economic systems.

The main sections of the volume are:

- Global crisis management: problems, directions, and perspectives;
- Perspectives of eliminating the institutional traps within global crisis management;
- Fighting the “black holes” of the global economy as a means for managing the global crisis; and
- Specifics of the global crisis management at the modern stage of development of the global economy.

The target audience of the conference proceedings includes postgraduates, lecturers at institutions of higher education, and researchers who study the institutional foundations of the functioning and development of modern economic systems and global crisis management. Based on the conclusions and results offered, representatives of the targeted audience are likely to find essential knowledge and suggestions for future research.

The material in this volume will be used by its authors in such courses as “Institutional Economics” and “Management” for undergraduate and Masters degree students.

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Conclusions

Thus, on the basis of the modern theory of global crisis management and the new institutional theory, this volume studies the institutional environment that is specific to separate economic subjects, and for the global economy on the whole. This allows for the substantiation of “institutional traps” that hinder the intensive development of the global economy and its structural elements, and for distinguishing the problem of uncertainty of the institutional environment.

This uncertainty is caused by the fact that the modern global economy develops along an unsustainable trajectory, which is in turn caused by an imbalance in the system of interests of its participants—separate countries—and leads to changeability in the integration processes, within which the international economic integration either increases, or is replaced by disintegration. It also leads to instability in the economic growth and development of socio-economic systems.

The major scientific results that were obtained by the contributors to this volume are:

- The problems that global crisis management allowed to distinguish the perspectives of an increase in the sustainability of the global economy’s development;
- The methodological and practical recommendations offered that enable overcoming the uncertainty of the institutional environment and increasing the effectiveness of global crisis management;
- The scientific and practical advice developed that allows for correcting the state policy in the sphere of crisis management, and for increasing living standards.

The most important tools for overcoming the uncertainty of the institutional environment in order to increase the effectiveness of the global crisis management are: strengthening the interaction and cooperation between the state and private business—i.e., developing the system of public-private partnership; activating and supporting “cluster development” of entrepreneurship; leveling the socio-economic development of structural elements in socio-economic systems; and intensifying innovational processes.

It should also be noted that this volume provides a theoretical and methodological foundation for the scientific study of the new economy that is being formed under the conditions of the global crisis, and that it offers practical recommendations for formulating the strategies for adapting the economic subjects of these conditions. Nevertheless, the state of affairs in the modern global economy has been developing so rapidly that even the most precise and detailed forecasts quickly become outdated, and leading and highly effective tools and mechanisms lose their topicality.

Thus, research in the study of the institutional environment of the modern global economy and socio-economic systems, as well as the tools for global crisis management, should be conducted on a continuing basis, thereby opening the possibilities for further development of the scientific provisions formulated in this book.

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Part I
**The Global Crisis Management: Problems,
Directions, and Perspectives**

Reorganization of Entrepreneurial Structures Within Global Crisis Management: Problems and Perspectives

Anastasia A. Sozinova, Olga V. Fokina, and Lyudmila A. Fufacheva

Abstract This research offers a hypothesis that existing means of reorganization of entrepreneurial structures are ineffective within global crisis management, as they possess various significant drawbacks which hinder achievement of the goal of reorganization within global crisis management or suppose high cost for its achievement. The purpose of the article is to verify this hypothesis and to determine key problems and perspectives of improvement of the reorganization process of entrepreneurial structures within global crisis management. For the purpose of verification of the offered hypothesis, this work uses the developed proprietary method of evaluation of effectiveness of reorganization of entrepreneurial structures within global crisis management. The authors have conducted a comparative analysis of existing means of reorganization of entrepreneurial structures and evaluated their applicability and effectiveness within global crisis management. As an object for evaluation, a Russian global enterprise AvtoVAZ and Russian global enterprise Fiat were chosen. The authors determined the main problems of reorganization of entrepreneurial structures within global crisis management: weakening of the brand of entrepreneurial structures as a result of their reorganization and reduction of employees' loyalty to reorganized enterprises. The authors also offered the exchange as a perspective means of reorganization of entrepreneurial structures within global crisis management and proved its high effectiveness with the help of the developed estimate method.

JEL Classification Codes H12 • F6

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1 Introduction

Globalization of entrepreneurial activities stimulates creation of global entrepreneurial structures that conduct their activities on the global markets. Such format of doing business provides a range of advantages, both for enterprises (increased norm of income and profitability, expanded access to resources, possibility for establishment of long-term relations with contractors, etc.) and for consumers (larger assortment of products, flexible programs of loyalty, etc.).

This research offers a hypothesis that existing means of reorganization of entrepreneurial structures are ineffective within global crisis management, as they possess various significant drawbacks that hinder achievement of the purpose of reorganization within global crisis management or suppose high expenses for its achievement. The purpose of the article is to verify this hypothesis and to determine the key problems and perspectives of improving the process of reorganization of entrepreneurial structures within global crisis management.

2 Materials and Method

Reorganization of entrepreneurial structures is a legally established process of changing their internal organizational and economic structure. It could be done in four ways. The first one is transformation. It supposes changing the organizational and legal form of the enterprise. The second way supposes division of an enterprise. Within this process, a structural element is taken from an entrepreneurial structure (e.g., a division or branch). At that, the main enterprise continues to work together with a new independent subject (Kravets et al. 2014).

The third way is merging. It supposes unification of two previously independent entrepreneurial structures into a new unified enterprise. Within this process, previous enterprises cease to exist, and a new entrepreneurial structure appears. This supposes voluntary unification of enterprises that seek their own profit (Popkova et al. 2013).

The fourth way is acquisition. It supposes absorbing a previously independent enterprise. That is, the absorbed enterprise ceases independent existence and becomes a part of another entrepreneurial structure. It is a means of mandatory acquisition with damage to an enterprise's economic interests (Skiter et al. 2015).

Theoretical and methodological aspects of reorganization of entrepreneurial structures are given in detail in works of such authors as Ghosal (2015), Zhang (2016), Lisnichuk (2013), Liu (2012), Novikov et al. (2016), Tomasic and Zhang (2012), Romanowska (2009), etc. Fundamental basics of global crisis management are set in the works of such modern scientists as Takagi (2016), Starnawska (2015), Belobo and Pelsler (2014), Bengtsson (2014), McAleer et al. (2013), etc.

Analysis of recent research and publications on the studied problem showed that the issues of reorganization of entrepreneurial structures and global crisis management in most works of modern authors are viewed separately, which does not allow determining effectiveness of existing means of reorganization of entrepreneurial structures within global crisis management and causes necessity for specification and complex study of this issue.

In order to verify the offered hypothesis, this work uses the proprietary method of evaluating the effectiveness of reorganization of entrepreneurial structures within global crisis management, which supposes the use of the following formula:

$$ER = GP * LG / (ER + LP) \quad (1)$$

where:

ER—indicator of effectiveness of reorganization of entrepreneurial structures within global crisis management

GP—growth of profit as a result of reorganization of entrepreneurial structures

LG—level of achieving the goal of reorganization of entrepreneurial structures within global crisis management

ER—expenses for reorganization of entrepreneurial structures

LP—lost profit from reorganization of entrepreneurial structures

As is seen from formula (1), the offered method supposes that effectiveness of reorganization of entrepreneurial structures within the global crisis management is a ratio of profits from reorganization to expenses for achieving it.

Profits are evaluated as product of profits growth as a result of reorganization of entrepreneurial structures, which is measured in money units, and the level of achievement of the goal of reorganization of entrepreneurial structures within global crisis management, which is measured in unit fractions.

Expenses include cost of reorganization of entrepreneurial structures and lost profit from reorganization of entrepreneurial structures. These two indicators are measured in money units.

3 Results

Within global crisis management, the most important goal of reorganization of entrepreneurial structures is preservation of business and supporting its global competitiveness. In order to evaluate the possibility for achieving this goal with the help of existing means of reorganization of entrepreneurial structures, let's use Table 1.

The process of reorganization of entrepreneurial structures in detail and evaluation of their effectiveness in the context of global crisis management with the help of the developed method is shown graphically in Fig. 1.

Table 1 Comparative analysis of existing means of reorganization of entrepreneurial structures

Criteria of comparison	Means of reorganization of entrepreneurial structures			
	Transformation	Division	Merger	Acquisition
Number of initial enterprises	1	1	2 or more	2 or more
Final number of enterprises	1	2 or more	1	1
Character of reorganization	Voluntary	Voluntary	Voluntary	Mandatory
Advantages	Obtaining access to additional resources	Enlargement of business, expansion of influence spheres	Strengthening of market position, unification of resources, expansion of possibilities for development	
Disadvantages	Insignificant effect with large expenses	Growth of total expenses for doing business	Loss of independence by both merged enterprises	Loss of economic independence by absorbed enterprise

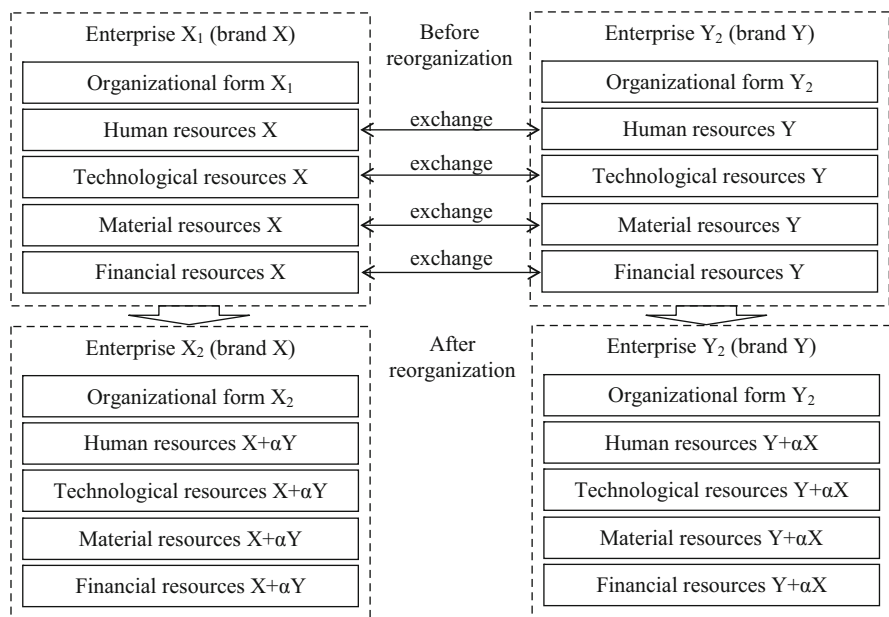


Fig. 1 Exchange as a perspective means of reorganization of entrepreneurial structures within global crisis management

As is seen from Fig. 1, before reorganization, there are two independent enterprises: X₁ and Y₁ with organizational legal forms, brand, and resources. During the process of reorganization, they exchange existing resources in proportion α and cease to exist. After reorganization, two new independent enterprises are created on

the basis of former enterprises: X_2 and Y_2 with renewed organizational and legal forms, former brands, and increased resources.

In our example, let us evaluate additional profit as RUB 30 million. The level of achieving the goal of reorganization is evaluated at 1, as this will allow preserving both enterprises and increasing their global competitiveness. As a result, we receive the following expression: $ER = 30 \times 1/10 = 3$. As effectiveness is larger than 1, it is possible to state the expediency of enterprises exchange within global crisis management and high effectiveness of the offered method of restructuring.

4 Conclusion

Theoretical significance of the conducted research consists in the fact that its results and proprietary conclusions contribute into development of the concept of management of entrepreneurial structures and the concept of global crisis management. The developed proprietary method of evaluating the effectiveness of reorganization of entrepreneurial structures within global crisis management as well as the results of the performed comparative analysis of existing means of reorganization of entrepreneurial structures and evaluation of their applicability within global crisis management pose certain novelty.

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Improvement of the Mechanism of Provision of Food Security of Russia Within Management of Risk System of Entrepreneurship

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Abstract The purpose of the work is to determine perspectives and to develop recommendations for improvement of the process of managing the risk system of entrepreneurship within provision of food security. The methodology includes the methods of regression and correlation analysis. The authors determine the role and meaning of risk management in the sphere of agro-industrial complex in provision of national food security and determine perspective modernization mechanisms of risk system of entrepreneurship in the sphere of agro-industrial complex of Russia as the main condition for national food security. This allows for conclusion that the system of management of entrepreneurial risks in the sphere of Russian agro-industrial complex has a lot of drawbacks, which include monopolistic participation of the state in the process of such management, which is the reason for low level of national food security. As a solution to this problem, the authors develop a model of improvement of the process of management of risk system of entrepreneurship in the sphere of Russian agro-industrial complex within provision of national food security, which allows eliminating this drawback and involve enterprises of agro-industrial complex into the process of risk management, which, in its turn, will lead to increase of its efficiency, more successful satisfaction of interests parties' needs (consumers who will receive access to a wider assortment of competing products), and solution of the problem of national food security.

JEL Classification Codes G31 • F52 • Q18

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1 Introduction

Under the influence of the tendency of globalization of the world economy and international division of labor, economic specialization of the countries of the world deepens to orientation at goods and services in production of which they possess advantages as compared to rivals.

Thus, the problem of food security of nonfood countries grows—i.e., the countries that do not possess advantages in the food sphere and, while specializing in manufacture of products of other spheres, depend on food import. The purpose of the work is to determine perspectives and to determine recommendations for improvement of the management process of risk system of entrepreneurship within provision of food security.

2 Materials and Method

The state has tools of influence on political, regulatory, institutional, and infra-structural risks, while private business is oriented at struggle with economic risks. Various aspects of risk management of entrepreneurial activities are viewed in detail in multiple works of such authors as Song and Zhuang (2016), Skiter et al. (2015), Popkova et al. (2013), Zhang et al. (2014), Kravets et al. (2014), Bachev (2013), Sozinova et al. (2016), Novikov et al. (2016), Soboleva et al. (2016), etc.

Theoretical and practical aspects of food security are viewed in works of such modern authors as Martin et al. (2016), Aliu (2016), Schindler et al. (2016), Borch and Kjærnes (2016), Wilson (2016), Wegren et al. (2016), etc.

Methodology of the research includes the method of regression and correlation analysis, which is used by the authors to study the character and closeness of connection between values of index of national food security (y) and level of various entrepreneurial risks (x_{1-7}).

Objects for economic analysis include Brazil, Canada, France, Germany, and Russia. Estimate indicators include building the models of paired linear regression of type $y = a + bx$ (with emphasis on the value of coefficient b) and calculation of coefficient of correlation of the given indicators.

3 Results

Based on official statistical information of analytical agencies for 2014, the following table was compiled for conduct of economic analysis (Table 1).

As a result of the research on the basis of Table 1, the following results were obtained. According to the received model of paired linear regression $y = 0.31 - 1.66x_1$, with increase of risk of violation of supply chain integrity by

Table 1 Summary table for economic analysis for 2014

Indicators		Values of indicators for countries				
		Brazil	Canada	France	Germany	Russia
Entrepreneurial risks	Violation of integrity of supply chains (x_1)	50	8	11	17	25
	Unfavorable influence of geographic and climate factors (x_2)	40	50	44	52	56
	Unfavorable influence of institutional factors (x_3)	30	17	7	13	28
	Aggravation of human resources (x_4)	20	10	15	12	8
	Changes in laws and state regulation (x_5)	20	15	18	26	13
	Unfavorable market fluctuations (x_6)	10	25	36	47	34
	Reduction of accessibility of financial resources (x_7)	10	22	24	32	41
Index of food security		68.1	83.7	83.4	83.7	62.7

Source: Allianz Risk Pulse et al. (2014), The Global Food Security Index (2014)

one point, index of food security reduces by 1.66 points. As is seen from the model $y = 0.92 - 1.93x_2$, with increase of risk of unfavorable influence of geographical and climatic factors by 1 point, index of food security reduces by 1.93 points.

Based on the model $y = 0.55 - 1.79x_3$, it is possible to conclude that with increase of risk of unfavorable influence of institutional factors by 1 point, index of food security reduces by 1.79 points. As is seen from the model $y = 0.87 - 0.60x_4$, with increase of risk of aggravation of human resources by 1 point, index of food security reduces by 0.60 points.

According to the model $y = 0.16 - 1.84x_5$, with increase of risk of changes in law and state regulation by 1 point, index of food security reduces by 1.84 points. The model $y = 0.43 - 1.85x_6$ shows that increase of the risk of unfavorable market fluctuations by 1 point leads to index of food security reducing by 1.85 points.

According to the model $y = 0.92 - 1.81x_7$, with increase of risk of reduction of financial resources accessibility by 1 point, index of food security reduces by 1.81 points. Coefficients of correlation of indicators in the received models 1–3 and 5–7 constitute more than 90%, in model 4–62%. This shows that all the studied factors (x) perform reverse influence on the resulting indicator (y).

Possibilities and perspectives of modernization of risk system of entrepreneurship in the Russian agro-industrial complex are shown in Table 2.

For achievement of the largest and quickest effect, it is recommended to implement these mechanisms within the following model of improvement of the process of management of risk system of entrepreneurship in the Russian agro-industrial complex within provision of national food security (Fig. 1).

Table 2 Possibilities and perspectives of modernization of risk system of entrepreneurship in the Russian agro-industrial complex

Risks of entrepreneurial activities in the sphere of agro-industrial complex	Perspective means of managing these risks	Modernization mechanisms of risk system of entrepreneurship
Unfavorable influence of geographical and climate factors	Active implementation of innovations: usage of the latest technologies, equipment, and raw materials	Intensive conduct of scientific research, cooperation with R&D centers
Unfavorable market fluctuations		
Changes in law and state regulation	Reduction of dependence of business on the state and growth of its independence	Stimulation of healthy competition on domestic markets, cancelling protection measures
Reduction of accessibility of financial resources	Development of financial system	Effective anti-inflation policy
Unfavorable influence of institutional factors	Development of institutional system	Effective struggle with bureaucracy and corruption
Violation of integrity of supply chain	Anti-crisis management of business: reduction of dependence on import of technologies, equipment, and raw materials	Vertical integration stimulating expansion of business and increase of its market power

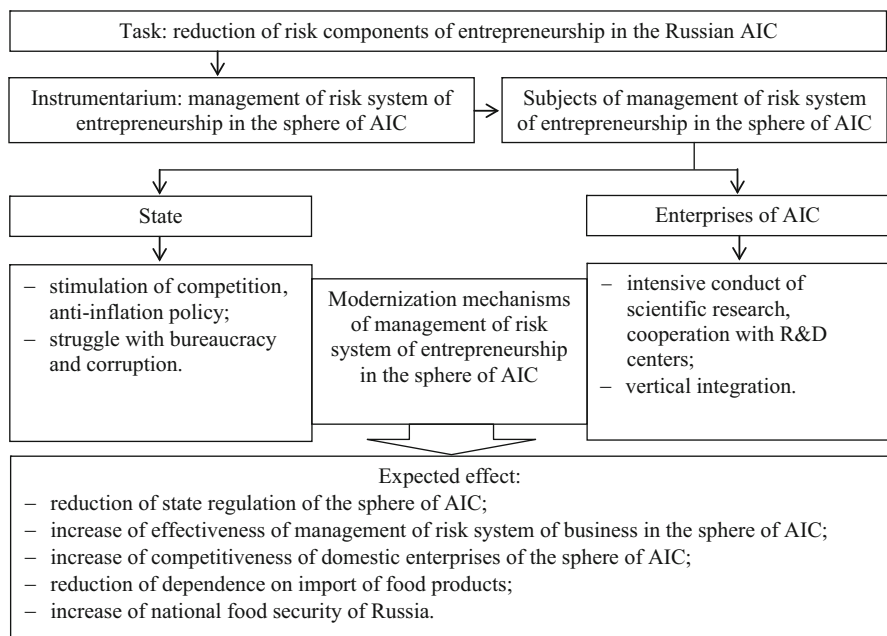


Fig. 1 Model of improvement of the process of management of risk system of entrepreneurship in the Russian agro-industrial complex within provision of national food security

As is seen from Fig. 1, within the offered model of improvement of the process of management of risk system of entrepreneurship in the Russian agro-industrial complex within provision of national food security, it is offered that subjects of such management include not only bodies of public authority but enterprises of the sphere of agro-industrial complex.

4 Conclusion

It should be concluded that this research was performed within the concept of risk management and concept of food security, contributing into their development through expansion of their methodological basis and proving the necessity for complex solution to their applied problems, which reflects theoretical significance of the received results. Practical significance of this work consists in the fact that proprietary conclusions and recommendations could be used for improvement of the process of management of risk system of entrepreneurship in the Russian agro-industrial complex within provision of national food security.

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The Concept of Economic and Social Development of Region Within Global Crisis Management

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Abstract The purpose of the article is to develop the concept of economic and social development of Russian regions that corresponds to requirements of global crisis management. With the help of methods of correlation and regression analysis, the authors determine the most important factors of economic and social development of modern Russian regions. The objects of the research include regions of Russia of various sizes and various places in ranking of socioeconomic development—for the purpose of representativeness—Moscow and Leningrad Oblasts (leading regions), Kirov and Volgograd Oblasts (medium regions), and Kostroma and Pskov Oblasts (underdeveloped regions). The results of the analysis contradicted the provisions of existing concept of economic and social development of the region. Thus, instead of direct correlation of subsidizing and socioeconomic regional development, we can see reverse and insufficiently strong connection; instead of reverse connection between competition in regional markets and socioeconomic regional development, we see strong direct correlation. The influence of post-industrialization and development of foreign economic relations is insignificant. At the same time, the offered hypothesis on strong and direct influence of other factors on socioeconomic development of a region—investments, interaction of state and business within public–private partnership, level of informatization, and innovative activity—was confirmed. This shows that the use of existing concept could be a reason for high aptitude of Russian regions to economic crises. That is why as an alternative to existing concept of economic and social development of a region, this work offers a new proprietary concept, adapted to modern economic conditions and requirements of global crisis management.

JEL Classification Codes R11 • R58 • H12

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1 Introduction

Under the conditions of globalization and integration, a region in the national economic system becomes a full participant of economic relations with high level of independence. Being under the strong influence of global economic processes, modern region should be able to adapt to them and undertake measures in the sphere of global crisis management for overcoming potential and current negative consequences of such influence.

The working hypothesis of this research consists in the fact that existing concept of economic and social development does not conform to needs of modern Russian regions and is not applicable under the conditions of globalization of world economy which develops according to the market type. The purpose of the article is to verify the offered hypothesis and to develop a new concept of economic and social development of Russian regions that corresponds requirements of the global crisis management.

2 Materials and Method

Conceptual issues of economic and social development of region are viewed in detail in works of such modern authors such as Tyuleneva and Lisnyak (2015), Sozinova et al. (2016), Husainova (2015), Kravets et al. (2014), Rodnyansky et al. (2014), Skiter et al. (2015), Kuznetsova (2014), Popkova et al. (2013), Carl (2016), Izmailova et al. (2016), Khalimova (2016), Zvyagintseva et al. (2016), Soboleva et al. (2016), etc.

3 Results

The objects of the research include regions of Russia of various sizes which have different positions in the ranking of socioeconomic development for provision of representativeness of the selection—Moscow and Leningrad Oblasts (leading regions), Kirov and Volgograd Oblasts (medium regions), and Kostroma and Pskov Oblasts (underdeveloped regions). The following indicators are analyzed:

- Index of socioeconomic development of the region (y)
- Index of development of competition in the region (x_1)
- Volume of subsidies for regional entrepreneurship, RUM million (x_2)
- Share of service sphere in region's economy, % (x_3)
- Volume of export, \$ million (x_4)
- Volume of investments into main capital per capita, thousand RUB per capita (x_5)

Table 1 Data for regression and correlation analysis for 2015

Indicator	Region (Russian Oblast)					
	Moscow	Leningrad	Kirov	Volgograd	Kostroma	Pskov
y	68.18	59.20	40.84	46.80	26.41	26.52
x_1	71.49	11.76	1.96	6.66	27.74	1.88
x_2	7865.35	1180.55	943.95	2372.30	672.70	621.15
x_3	56.00	45.20	52.40	44.90	39.40	62.00
x_4	5742.3	15,767.6	1031.4	4276.1	363.7	295.4
x_5	88.02	112.36	43.33	75.77	40.17	40.93
x_6	56.6	60.2	30.5	31.3	25.1	42.4
x_7	0.46	0.42	0.41	0.41	0.40	0.43
x_8	0.47	0.38	0.32	0.38	0.23	0.23

Sources: Ranking of socioeconomic position of regions (2016), Ranking of Russian regions for the level of development of public–private partnership (2015), Ranking of regions for the level of development of information society (2016), Ranking of innovational development of subjects of the Russian Federation (2014), Ranking of heads of regions for the level of support for development of competition (2015), Rosstat (2015)

- Index of development of public–private partnership in the region (x_6)
- Index of development of information society in the region (x_7)
- Index of innovational development of the region (x_8)

The data for regression and correlation analysis is given in Table 1.

The results of regression and correlation analysis neither proved nor contradicted the provisions of existing Russian concept of economic and social development of region. Thus, instead of direct connection between subsidizing and socioeconomic regional development, we see reverse and insufficiently strong connection, and instead of reverse connection of competition at regional markets and socioeconomic regional development, we see strong direct connection. The influence of post-industrialization and development of foreign economic relations is insignificant.

At the same time, the offered hypothesis on strong and direct influence of other factors on socioeconomic development of region—investments, cooperation of state and business within public–private partnership, level of informatization, and innovational activity—was confirmed. This shows that the use of existing concept could be a reason for high vulnerability of Russian regions to economic crises.

That is why as an alternative to existing concept of economic and social development of region, this work offers a new proprietary concept, adapted to modern economic conditions and requirements of global crisis management. This concept supposes that region should be integrated into international economic processes. Openness of economy is one of the most important preconditions of formation and increase of national and global competitiveness of the region.

In the process of state regulation, it is necessary to strive for supporting the high level of competition at regional markets for stimulation of innovational activity of regional enterprises. The most important tasks of regional authorities should include creation of favorable investment climate, provision of high level of

Table 2 Comparative analysis of existing and offered concept of economic and social development of region

Comparison criteria	Existing concept	Offered concept
Priority type of economy	Closed economy	Open economy
Means of keeping competitiveness of regional business	Limitation of competition (protectionism) and subsidizing of business	Keeping high competition (free trading) and stimulation of innovational activity of business
Main vectors of development of region	Post-industrialization, expansion of foreign economic activities (mostly export)	Informatization, public-private partnership, attraction of investments

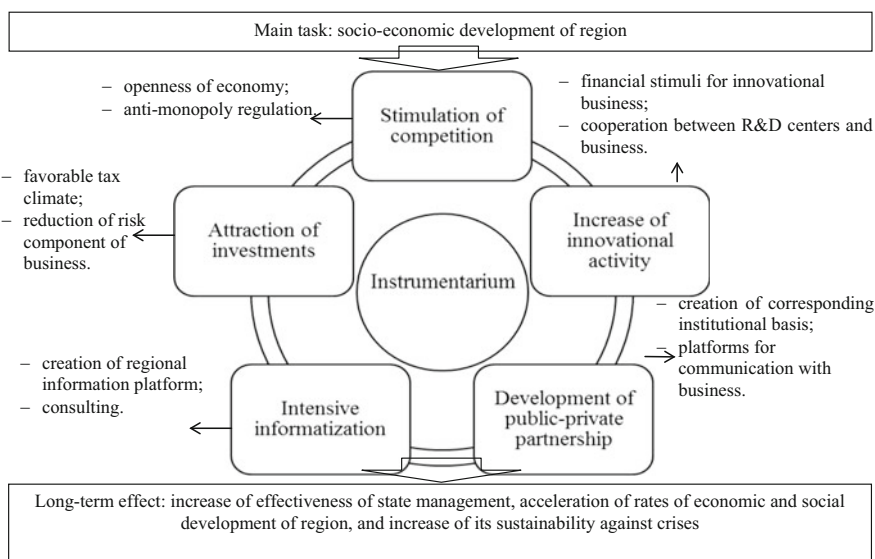


Fig. 1 Concept of economic and social development of region within global crisis management

economic agents’ knowledge on state of affairs in region, and establishment of relations with private business for realization of joint projects—primarily in the sphere of development of regional infrastructure (Table 2).

The proprietary concept is based on determined real socioeconomic interconnections that are peculiar for economy of modern Russia. Due to that, it is characterized by higher effectiveness as compared to existing concept, based on unreliable ideas and which supposes use of false tools that perform reverse effect. The offered concept is presented in Fig. 1.

As is seen from Fig. 1, the offered concept’s main task consists on provision of socioeconomic development of the region. In the long term, it is possible to expect the following positive effects: increase of effectiveness of state management, acceleration of rates of economic and social development of the region, and increase of its sustainability to crises.

4 Conclusion

The performed research contributes into development of the theory of regional economy, theory of state management, theory of globalization, and theory of crisis management, through systematization of scientific knowledge, accumulated by these theories, their reconsidering and supplementing—which ensures high theoretical significance of this paper.

Practical significance of this work consists in importance and necessity for using the developed concept of economic and social development of the region within global crisis management in the process of state management of regions of modern Russia for the purpose of increase of effectiveness of such management and provision of sustainability of regional economic systems to crises.

A limitation of the results of the performed research is its fundamental purpose, despite founding on statistical information and basis for practical activities of modern Russian regions. In order to overcome this limitation during further research, it is expedient to pay increased attention to detailed elaboration of the offered conceptual provision of economic and social development of the region within global crisis management by the example of specific regions and evaluation of experience of their practical realization.

We consider that further perspectives of development of the concept of economic and social development of region within global crisis management are related to shift of accents from public to corporate management and expansion of participation of private entrepreneurial structures in this process.

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Economic Security of Agro-Industrial Complex as a Basis of National Food Security

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Abstract Food security is one of the most important directions of provision of state's national security. Financial instability and deepening of systemic economic crisis actualized the necessity for monitoring of the state of food independence as an objective condition for economic sovereignty of Russia. The article views modern approaches to determination of indicators of food security, based on methodology of the Doctrine of food security of the RF and modern scientific concepts. The estimate calculation and analysis of indicators of food security and level of independence from external supplies for 2000–2014 are given. The system of economic security of agro-industrial complex in view of differentiated approach to the mechanism of its provision is given. Based on the results of analysis of food independence and existing situation in the agrarian sphere, the spheres of agro-industrial complex with critical level of economic independence are determined.

JEL Q18 • Q17 • Q13

1 Introduction

Realization of national interests of Russia is based mainly on provision of food security. Thus, achievement of food security supposes formation of comprehensive stable system that ensures high-quality food consumption on the basis of competitive agro-industrial complex (Gravshina 2015).

The issue of provision of food security in Russia was set in mid-1990s, which was caused by systemic crisis of agricultural sphere that led to quick reduction of volumes of agricultural production related to the growth of dependence on imported raw materials (Kotova and Safonova 2012). Beginning from 1996, there were attempts for passing the Federal law “On O food security,” but the offered projects

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were declined due to the lack of financial conclusion of the Government. The Decree of the President of the RF dated January 30, 2010, No. 120 established the Doctrine of food security, which legally set the definition and indicators of food security of Russia (Doctrine of food security of the Russian Federation 2010). Despite the fact that the Doctrine regulates 14 indicators of evaluation of the state of food security in view of the sphere of consumption, production, national competitiveness, and organization of management, the main attention was focused on the problem of food independence, which, under the conditions of Russia's membership in the WTO and orientation at import substitution, is a priority.

Food security is sustainable national manufacture of food products in volumes that are not lower than the set threshold values of its share in commodity resources of internal market of corresponding products. Thus, provision of economic security of agro-industrial complex became a dominant of a new state agrarian policy which should be based on the national strategy of development of agrarian sphere of economy and be based on the main provision on multifunctionality of agriculture and increase of its role and position in the country's economy (Altukhov 2014).

2 Materials and Methods

The study was conducted on the basis of materials of the Federal State Statistics Service of the RF with the methods of complex economic analysis. A methodological basis for the research included indicators of the level of food independence, applied by Russian state bodies according to the Doctrine of food security, and indicators and concepts of determination of this indicator and system of economic security of agro-industrial complex on the whole.

The level of food independence was determined by the following formula:

$$I_{fi} = \frac{S_a^b + Q - S_a^e}{C_p} \quad (1)$$

where I_{fi} , level of food independence; S_a^b , reserves at the beginning of the year; S_a^e , reserves at the end of the year; Q , production volume, and C_p volume of private and production consumption within the country.

Indicator of dependence on external supplies is determined by the following formula:

$$I_{fd} = \frac{Im}{Q - Ex} \quad (2)$$

where I_{fd} , level of dependence on external supplies; Im , import level; and Ex , export level.

The main source of information for calculation of these indicators is the balance of resources and use of agricultural raw materials and food (Mazeina 2011; Shagayda and Uzun 2015).

3 Results

Determination of the state of food independence in Russia is based on ratio of volumes of agricultural production (in view of passing reserves) to consumption. The Doctrine sets the threshold values of the level of food independence for eight groups of food products—at that, for most products of the offered list, the given indicator exceeds the level of 80%, which is given in the recommendations of the FAO (Food and Agriculture Organization of the United Nations).¹

3.1 *Analysis of Food Independence*

Let us conduct the analysis of the level of food independence of Russia with the use of the offered methodology. The results of calculations are given in Table 1. Over the analyzed period, food independence was achieved for grain, potato, and fish products. For meat and meat products, the indicator of food independence was below the threshold value (85%), but there was a tendency for its increase, which is explained by realization of top-priority national project “Development of agro-industrial complex” and the State program for development of agriculture and regulation of agricultural products market, raw materials, and food.

For milk and dairy products, the level of food independence was achieved in 2000, and in the following period it reduced, constituting 78.3% in 2014, which is by 11.7% lower than the threshold value.

3.2 *Analysis of Food Dependence on External Supplies*

An important direction of study of the level of food independence is determination of the indicator of dependence of food market on external supplies. This indicator takes into account not only incoming but also outgoing food flows and is a ratio of import volumes to internal production minus export. Analyzing the value of this indicator for Russia, it is possible to state that dependence of food market for main types of products is significantly differentiated (Table 2).

¹FAO—Food and Agriculture Organization of the United Nations

Table 1 Indicators of food independence of Russia for main products in 2000–2014 (%)

Food products	Normative	2000	2005	2010	2014
Grain	>95	95.9	117.5	122.4	144.7
Potato	>95	101.2	102.0	101.0	103.7
Meat and meat products	>85	69.1	62.0	72.4	83.5
Milk and dairy products	>90	91.3	82.3	80.6	78.3
Fish products	>80	–	–	117.5	114.4

Table 2 Indicators of food dependence on external supplies in Russia in 2000–2014

Indicator	2000	2005	2010	2014
<i>Production (million tons)</i>				
Grain	65.4	77.8	61.0	105.3
Potato	29.5	28.1	21.1	31.5
Vegetables and gourds	11.4	12.1	13.3	16.9
Meat and meat products	4.4	5.0	7.2	9.1
Milk and dairy products	32.3	30.8	31.8	30.8
Eggs and egg products (million)	34,085	37,091	40,600	41,859
<i>Export (million tons)</i>				
Grain	1.3	12.2	13.9	30.1
Potato	0.03	0.03	0.09	0.07
Vegetables and gourds	0.2	0.9	0.5	0.8
Meat and meat products	0.04	0.07	0.1	0.1
Milk and dairy products	0.5	0.5	0.5	0.6
Eggs and egg products (million)	326	197	244	305
<i>Import (million tons)</i>				
Grain	4.7	1.5	0.4	0.9
Potato	0.6	0.5	1.1	1.0
Vegetables and gourds	2.2	3.5	3.2	2.9
Meat and meat products	2.1	3.1	2.9	2.0
Milk and dairy products	4.7	7.1	8.2	9.2
Eggs and egg products (million)	1168	882	901	1235
<i>Dependence on external supplies (%)</i>				
Grain	7.3	2.3	0.8	1.2
Potato	2.0	1.8	5.2	3.2
Vegetables and gourds	19.6	31.3	25.0	18.0
Meat and meat products	48.2	62.9	40.8	22.2
Milk and dairy products	14.8	23.4	26.2	30.5
Eggs and egg products (million)	3.5	2.4	2.2	3.0

The given calculations allow stating that under the conditions of economic globalization and without stable and competitive agro-industrial complex, achievement of food independence is impossible. At present, agro-industrial complex in Russia cannot compete with Western manufacturers as the level of investment and innovative activities influences indicators of foreign economic activities. As of

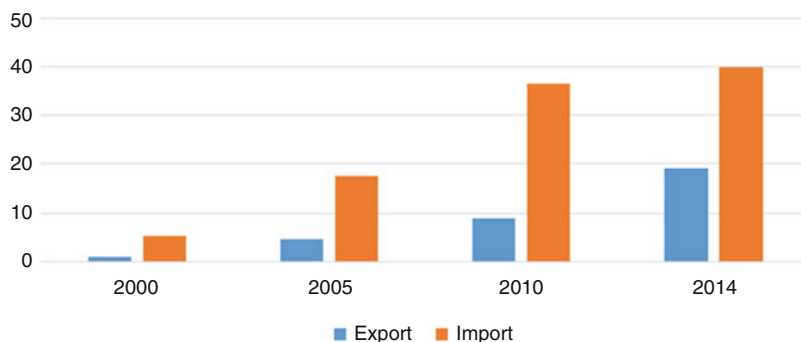


Fig. 1 Export and import of food and agricultural raw materials in Russia (\$ billion)

2014, the volumes of imported food and agricultural raw materials exceed the volumes of export by 2.1 times (Fig. 1).

3.3 *Economic Security of Agro-Industrial Complex*

Emphasizing on foreign economic factors of threats to economic security of agro-industrial complex leads to stimulation of protection measures, while the main part of the problems is caused by internal systemic risks and threats that do not allow national agro-industrial complex to reach the level of 1990. Despite the positive tendencies in agri-food sphere, as of 2015, the volume of gross agricultural products constituted 95% of the 1990 indicator, and the volume of livestock products constituted 70% (Fig. 2).

Economic security of agro-industrial complex is a large multilevel system, which requires a differentiated approach to the mechanism of its provision. It is expedient to state three levels of security of agro-industrial complex:

1. Economic security at the level of the sphere
2. Economic security at the level of economic subject
3. Economic security at the level of the spheres of agro-industrial complex (Fig. 3)

Operating the results of analysis of food independence, it is necessary to distinguish at each of the given levels the elements of agro-industrial complex, of which economic security is under threat. At the level of the sphere, the most vulnerable are dairy and meat sub-complexes—the perspective of increase of production and import substitution for them is rather distant. Milk cattle breeding is in crisis, which is caused by reduction of the number of cows in husbandries of all categories and use of extensive technologies in semi-subsistence husbandries. It is necessary to perform the following measures:

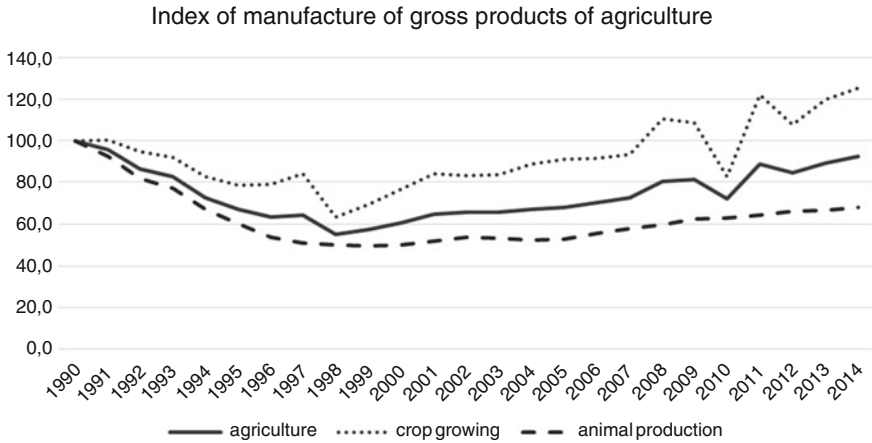


Fig. 2 Index of manufacture of agricultural products in the RF (in comparable prices, in % to 1990)

- Creation of the mechanism of economic interest of agricultural enterprises in growth of milk production
- Formation of full-scale forage base
- Increase of cow efficiency by means of improvement of their breeding abilities

The given measures should be quick, as the state of dairy cattle breeding influences the development of food market of the country on the whole. A significant role for effective organization of mil production belongs to rational use of state regulation of formation of food markets and infrastructure of dairy cattle breeding (Mazeina 2011).

At the level of agricultural manufacturer, all the subjects are threatened—as the problems caused by degradation of production potential, deformation of integration connections, and low investment activities are peculiar for agricultural organizations and for small economic forms which account for more than 50% of gross products.

The main directions of provision of economic security of national manufacturers are the following:

- Systematic monitoring of internal and external threats
- Full self-financing in view of state programs
- Capability for self-development and progress by means of activation of investment and innovative activities
- Control over the process of pricing for products and services of all members of the sphere of agro-industrial complex
- Modern material and technical basis which allows issuing the products with the least expenses
- Financial sustainability and payment capacity
- Provision of manufacture of high-quality agricultural products (Kulagina 2010)

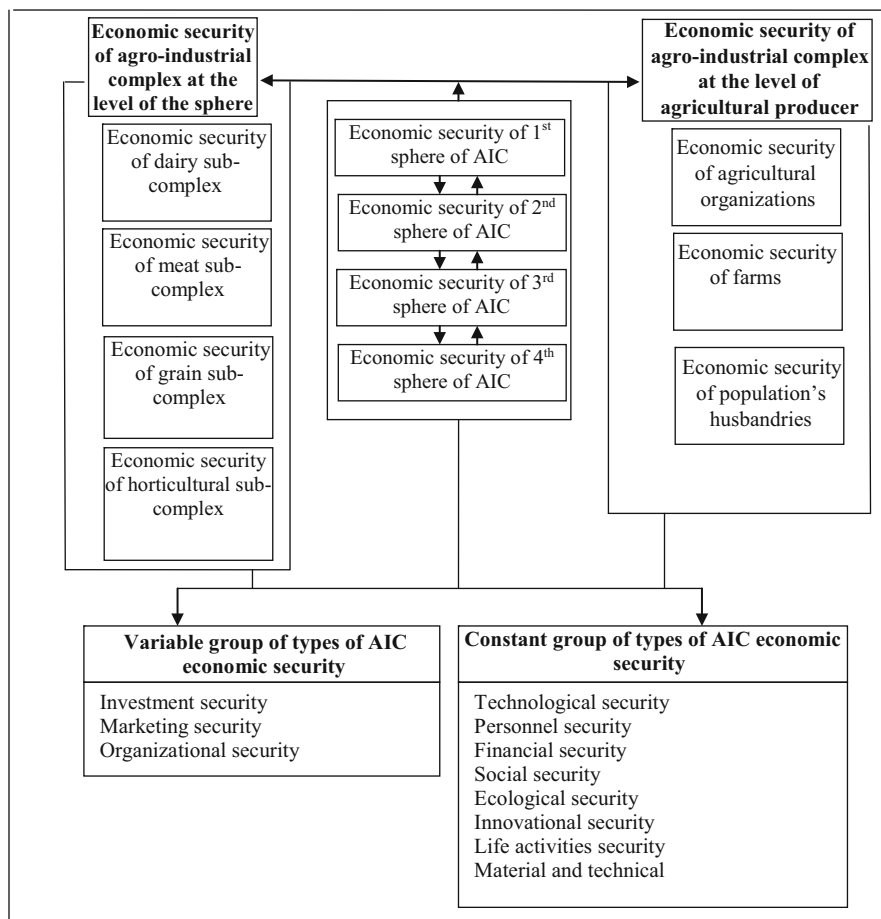


Fig. 3 System of economic security of agro-industrial complex

Economic security at the level of the spheres of agro-industrial complex requires equal approach due to complex nature of functioning of the chain “supply—production—processing—sales.” Besides, it is necessary to limit trade networks during establishment of trade margin (Yakubovich 2014).

Due to the fact that the given elements are in close interrelation, and their autonomous functioning is impossible, formation of economic security of agro-industrial complex requires complex approach that takes into account observation of national interests and principles of provision of food independence.

Table 3 Forecast of the level of food independence and export potential of Russia for 2020

Food products	Level of food independence (%)	Export potential (+)/need (-) (million tons)
Grain	132	+2
Sugar	168	+2
Vegetable oil	239	+2
Potato	121	+6
Vegetables	90	-2
Fruit	39	-6
Meat and meat products	107	+0.6
Milk and milk products	79	-10
Eggs	124	+10

4 Discussion

During provision of the most favorable economic conditions, food independence of Russia for a range of products may grow substantially, thus increasing the volumes of export. The forecast of the level of food independence and export potential in view of full realization of capabilities of the agrarian sector, presented by the academician Ushachev, shows that Russia has all capabilities to reach positive export balance for grain, vegetable fat, sugar, pork, poultry meat, and eggs (Table 3) (Ushachev 2014).

The problem of reliable provision of food independence of the country requires development and realization of an effective long-term strategy of formation of economic security of agrarian sphere of economy. At present, development of a complex system of provision of economic security of agro-industrial complex includes the following elements:

- Perfection of the mechanism of investments attraction by means of creation of favorable investment climate
- Creation of regional innovational systems for taking the national agro-industrial complex to innovational path of development
- Expansion of mechanisms of public-private partnership for practical use in the sphere of agro-industrial complex
- Correction of production and sectorial structure of agro-industrial complex of industrial territory in view of natural and climate, economic, and social conditions of agricultural production
- Development of the system of threshold indicators of food independence for each industrial territory in view of possibilities of achievement of economic security of agro-industrial complex
- Improvement of the system of information and consultation services for subjects of agro-industrial complex

- Improvement of the system of state support for agro-industrial complex of industrial territory for the purpose of increase of the level of economic security of agro-industrial complex and achievement of food independence
- Improvement of the system of state order for agrarian products, including creation of wholesale food markets within the limits of an industrial territory
- Establishment of the system of monitoring in the sphere of agrarian reforms, economic security of agro-industrial complex, and food security of industrial territory
- Improvement of the system of quality management of agrarian products
- Management of development of rural social infrastructure (Kulagina 2011)

5 Conclusions

Reliable provision of food independence of Russia in context of its membership in the WTO and the Customs Union is a necessary condition for preservation of integrity and strengthening of sovereignty of the RF. That's why the issue of provision of food independence is complex and relates to sustainable macroeconomic development of the state, its possibilities to conduct effective agrarian policy, and use of advantages of international division of labor in agro-industrial production. While possessing high potential in development of agricultural production, Russia cannot overcome systemic crisis that appeared in agro-food sphere at the beginning of the 1990s. Formation of the system of economic security of agro-industrial complex is a necessary condition for sustainable development of agriculture, creation of competitive advantages of the sphere of agro-industrial complex, and increase of competitiveness of products in internal and external markets.

Acknowledgments The work was performed within the Russian Humanitarian Science Foundation's project No. 17-02-00179 "Development of the methodology of the complex express diagnostics of the level of economic security and model of ranking of regions of modern Russia on the basis of analysis of the factors of threats and risk-oriented system of indicators."

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Increase of Customer-Oriented Approach by Means of Evaluating the Loyalty of Services' Consumers

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Abstract Over the recent years, a lot of Russian commercial organizations faced the problems caused by the global economic crisis and increased competitiveness in the local market. For the most part, the increased competition leads to necessity for finding so-called competitive advantages of service organizations. Very often, apart from price competition, the “consumers’ loyalty” plays the role of a competitive advantage.

The article views semantics of the definition of “consumer loyalty.” The authors intensify the necessity for analysis of consumers’ loyalty at service enterprises due to peculiarities of the service sphere. The work provides an example of calculation of consumer loyalty with the method of NPS index.

1 Results and Discussion

Growth of competition leads to necessity for the formation of so-called competitive advantages of service organizations. Very often, apart from price competition, the “consumers’ loyalty” plays the role of a competitive advantage.

Economists state that companies have to create sustainable competitive advantages. Companies that count on long presence in the market have to constantly look for new competitive advantages. Besides, each enterprise during formation of competitive advantages has to be seen by customers as an advantage for them (Arsaliyev 2012; Gornostaeva et al. 2014; Popkova 2013a,b; Popkova et al. 2012; Yusupov 2013; Zhidkov et al. 2014).

Let us pay attention to the fact that if the main players issue similar products or provide similar services according to observation of all quality standards, the only difference between service suppliers seen by a customer will be a difference in the service quality.

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There is a range of methods for evaluating services quality, which are used by marketing services. Methods of “critical cases,” SERVQUAL and SERVPERF, evaluate services quality from the point of view of consumers, based on the data received in the course of the research and customers’ survey. The result of the analysis is a source for managerial decisions for the purpose of increase of services’ quality (Sazonov 2013, p. 11).

In the course of the research, we considered a principle of evaluation of services’ quality, both from the consumer and manufacturer’s aspect. However, we’re inclined to think that it is expedient to orient at preference and evaluation from the consumer, as he forms an opinion on the services’ provider and, then, passes his experience to other customers through verbal communication, thus influencing the company’s image. It is possible to state that high-quality service is an effective sales tool that ensures sustainable competitive advantage of service and other organizations.

Customers’ idea on high-quality service at service enterprises has changed radically in our days. At present, we see high-quality service as convenient location, wide assortment of goods and services, leadership in the sphere, quickness, company’s capability to adapt to changing tendencies of goods and services, and competitive prices.

High-quality service is concentration of all material and labor resources of a company for satisfying customers. During the work on increase of provided services’ quality, the company’s management has to achieve consolidation of its workers for reaching the common goal. The necessity for consolidation of all company’s employees is explained by the notion “service” which includes a range of components—sales organization, storage works, logistics, order processing, etc. All works influence the perception of quality of goods or services purchased by a customer.

In the past century, economy and marketing received such notions as “good profit” and “bad profit.” In the first case, it is profit that provides stable continuous development; in the second case—profit that provides instantaneous financial result from operations. The philosophy of these notions consists in the fact that the enterprise that plans to stay in a certain market should stick to midterm or long-term strategy of business development. Long-term and midterm strategy of business orients a company’s manager at longer achievement of the desired economic effect which is, however, more stable. The companies oriented at instantaneous profit cannot keep competitive positions for a long time.

As a term or notion, quality of services has a lot of definitions and treatments. The scientists offer an opinion that evaluation of quality should be conducted by the opinion of services’ customers—as they may perform such evaluation from the first-person perspective. During evaluation of service quality, we have to refuse from subjective evaluation. Practice shows that there’s necessity for personal approach to each service consumer. Such approach forms customers’ notions on the high-quality service. That is, the notion “high-quality service” is treated as synonymic to the notion “consumers’ loyalty,” which, in its turn, determines competitive advantage of the company.

Within this work, we shall interpret the term “sustainable competitive advantage” as service quality, namely—level of customers’ satisfaction.

Over a long time, scholars cannot come to the single opinion on the methods of evaluation of services' quality. It is possible to distinguish two main methods of customers' satisfaction evaluation.

The first and less effective method supposes sending questionnaires to customers. This is one of the first methodologies in creating indices of customers' satisfaction. As of now, it is still used by many companies. The methodology of survey is simple and consists of the following: the customer is offered to answer to a range of questions regarding probability of ordering a service and further servicing in the company. After completing the questionnaire, a customer has to insert it into an envelope—which was paid for by the company—and send in to the company. The questionnaire usually contains around 50 questions, criteria of evaluation of which differ from “fully satisfied” to “very dissatisfied” by the service. Disadvantages of this system consist in inconvenience of completion of the questionnaire for customers. Firstly, the process of answering the questions is labor-intensive, as it requires a lot of time from respondents—and time is the main value in the modern society. Secondly, it is very inconvenient to send the form, which is caused by necessity to send it by post. Such system may not give an idea on the real status of customer satisfaction index. The practice of these reports confirms its low effectiveness, as coefficient of questionnaires return does not exceed 7% of respondents.

The second method of evaluation of service company quality is distinguishing the client's feedback by completing a free questionnaire in the company or by the call center line. Let us note that a drawback of such questionnaire is participation of respondents of two psychological types. The first type of respondents is called “optimists” and the second—“pessimists.” Such system of became popular during evaluating the quality of services in many well-known countries—e.g., Metro and Cash & Carry. In this system, evaluation of quality is performed by the result of calculating the index Net Promoter Score (NPS).

An enterprise can independently determine this index for its activities, designating the difference between “useful” and “harmful” profit. This difference could be determined by answering the following question: “is there a probability that you will recommend your company to your acquaintances and relatives?” In this case, it is a key question during evaluating the quality of services of one's company.

As a result of answers to this question, a scale is built that reflects the value of the Net Promoter Score. The Net Promoter Score is based on the idea that customers of any company are divided into three categories.

The category “promoters” includes the supporters who always use the company's services and make their friends do it. So-called passive clients are satisfied customers who do not have any enthusiasm, who can easily switch to the rivals, and the probability of them recommending the company to their friends is very low. The category of “opponents” supposes customers dissatisfied by the company's services.

The answer to the key question, and, actually, a criterion for distribution unto the NPS groups, is formalized indicator expressed in the number format and provided by the customer as a sign of agreement with the key question. During calculation of this indicator, a lot of companies use a 5-point scale. This indicator is very

popular—for example, Ebay uses it during evaluation of its activities, with 3-point system. Many other companies came to the conclusion that the optimal value of the NPS indicator is 10-point scale from 0 to 10, proportionally to a positive answer of a client to the main question—those putting 10 or 9 points by the 10-point scale are promoters, and then they go along the scale downward. Monitoring of the results of this indicator allows increasing the base of customers that expressed their opinion on the issue of quality of the company's provided services.

At present, the NPS is very popular—it is used by such companies as Apple, BMW, Toyota, Dell, Philips, Ge, Allianz, Procter and Gamble, American Express, and many others. The global level of the companies using this indicator proves its expedience and effectiveness of use at other, less popular companies. In Russia, practice of NPS hasn't yet found its equivalent application due to weak development of the managerial structure of companies from the service sphere—however, certain Russian companies already use this tool.

This technology for evaluation of the services quality is studied by scholars, estimated in practice, and criticized. However, one strong fact supports the defense of the “key issue”—there is direct dependence between profitability of companies that use this method and level of these companies' NPS.

It is possible to conclude that selection of the system of measurement and monitoring of the level of customers' satisfaction and loyalty are very important, as it is a basis for improvement of quality of service. Obviously, the process of work's quality should have a priority in companies' goals with long-term perspective of development.

Let us note that with all diversity of the factors of service's competitiveness and various definitions of this notion, it is possible to say that quality of work with customers is directly related to loyalty and provides company with one of the most important factors of competitiveness and sustainable competitive advantage.

Let us remind that NPS is index that shows consumers' adherence to the company, product, or service. In other words, index of loyalty NPS is called the index of readiness to recommend and conduct recurrent purchases in this company.

The level of consumer loyalty of a service company could be evaluated with this index by performing three steps.

At the first stage, a service's consumer answers the question “What is the probability of your recommending the company/product/service to your friends, colleagues, and relatives?” At that, evaluation is performed according to the 10-point scale, where 10 is “certainly recommend” and 0—“not recommend in any case.”

At the second stage, depending on the received points, the consumers are divided into three groups, shown in Fig. 1: 10–9 points, supporters of the brand/product; 8–7 points, neutral consumers; 6–0 points, critics.

The third stage includes calculation of the consumer loyalty index—NPS. This index allows for evaluation of customers' loyalty and automatic processing of the received results.

The use of online surveys simplifies the process of analysis of the consumer loyalty.

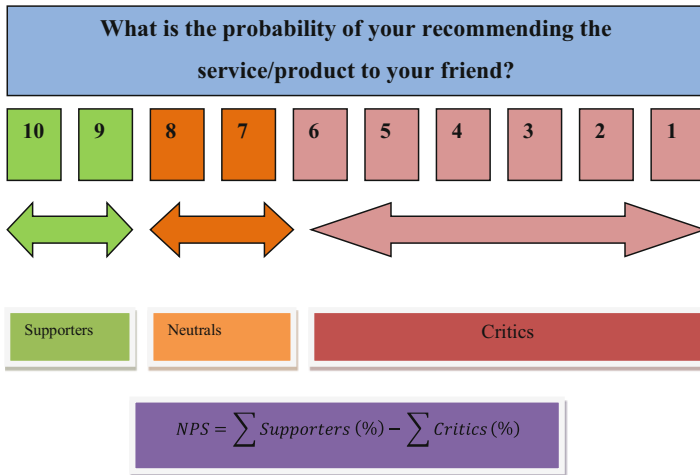


Fig. 1 NPS index. Tracking customers' loyalty

Regardless of the direction of organization's activities, the NPS indicators allows for quick determination of customers' opinion on an important issue and for quick reaction to negative feedbacks. Besides, NPS allows setting internal and external checkpoints for comparing the received results with rivals.

The so-called Likert scale allows determining the level of consumer loyalty. It could be used at any website of enterprises that provide services and manufacture goods.

As a rule, the NPS index is calculated several times over a year and several years. Constant evaluation of loyalty allows for effective work on the receipt of a competitive advantage and improvement of the results. Using the means of information services helps a company's management to receive necessary data for evaluation of the situation.

There is a range of advantages for use of this method for evaluation of consumer loyalty of the services of service companies. One of the advantages of the use of this method is speed of the research conduct. In order to perform the above research, we had to ask the respondents only one question—which significantly reduces the labor intensity of the analysis.

Another important advantage of this method is simplicity of its application. Consumer loyalty index uses generally accepted technologies, so everyone can easily understand it. The last advantage—but not the least as to the importance level—is comparability. The possibility for comparing the results of the performed research to rivals' results, who use this indicator during evaluation of loyalty, is created.

Food companies, like other service enterprises, try to increase the level of consumer loyalty with various methods. The most widespread are such methods of increase of consumer loyalty at service enterprises: discounts, gift certificates,

bonus cards, agreement with customer, transparency, testing of services, and forecasting and modeling of customer's wishes.

The loyalty system of an enterprise includes free drinks or desserts to regular customers. Also, regular customers receive free parking spots. Free table reservation and invitations to private events are also a part of the loyalty program. Modern loyalty system is not just discounts but regular congratulations with personal dates. In order to stimulate regular customers, some companies created special cards with bonuses.

A lot of organizations show their care for the customers. Members of the loyalty programs can download mobile apps for public catering, leaving their data for the system. The accounting system conducts detailed statistics of visits and food selection, which allows for personalized discounts on certain dates. Based on frequency of visits to the establishment, the guests receive bargain offers, which they may get when attending the establishment. Also, the customers receive information on different events.

In order to motivate consumers, establishments have special codes fixed to the tables—by scanning them, a guest may determine whether he won a bonus: dessert, main course, or cocktail.

Establishment's loyalty consists in provision of high-quality services, discounts, and special attitude toward guests. They have to receive information on new things from the restaurant's activities—thus, its care will be highly evaluated.

2 Conclusions

Expansion of the company's possibilities aims at increase of business profitability and growth of economy and well-being of the country on the whole, as enterprises for provision of services are related to small business, and any country's economy has to be based on enterprises of small business.

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Information and Psychological Convergence: Methodology of Creation

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Abstract The process of interaction of human and informational environment and formation of threats to a person and society is determined by external sociopolitical conditions and global informatization as well as by internal conditions in the form of psychological factors and mechanisms. Such combination of external and internal determinant of society development leads to emergence of the phenomenon of informational and psychological convergence which determines not only informational and psychological influence on a human but informational and psychological security. Study of informational and psychological convergence requires new project and synergetic approaches and methodology as systemic basis for developing the concept of informational and psychological security of a person. The study helps to solve the task of creating the design methodology and instrumentarium of creation of a comprehensive concept of informational and psychological convergence that leads to approach of the elements inside the system of security and other regulators of interrelations in society and to develop recommendations aimed at improvement of informational and psychological convergence in implementation of security of a person and society.

1 Introduction

Modern stage of the world history is characterized by intensive development of society, which determines the topicality of the issue of convergence. While the process of convergence was characterized by stability and sustainability and was realized by traditional unification strategies, approved by several generations, modern social processes of globalization, technologization, and informatization require from a person and institutes of society new strategies and tactics of convergence which take into account complexity and multidimensionality of modern changes that were unknown to the humanity in the past. Actualization of the issue of considering the convergence of creation of informational and psychological

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_6

security of person and society is predetermined by not only scientific and technological and informational changes but by social factors of our time. They include globalization and informatization of society's life and intensive changes in all spheres of living activities that began in the previous century and have a radical character.

The topic of the research is actualized by the fact that changes with the dominant of convergence processes became a necessary condition for development of society not only due to laws of society's development but also due to the universal character of convergence mechanism which preserves and translates human experience and new social practices, including convergent. Thus, special topicality belongs to creation of mechanisms of internal convergence and mechanisms of external convergence with society, science, and technologies which will correspond to conditions of the modern world.

The paradigm of convergence could become such a common foundation of a mutual character: constitutive, answering the question "what," and regulative, answering the question "how." The paradigm of convergence can become a project framework and connecting tissue, the interface that ensures scientific experience, and new public practices of interaction of science, technology, and society. It is a decisive aspect for the concept "convergent technologies" (Alieva et al. 2012).

2 Theoretical Basis of the Research

Topicality of the research on this scientific problem is predetermined by the fact that in modern globalizing world, the problem of informational and psychological influence on a human with the use of various methods, means, and technologies has come into the foreground. Psychological methods of manipulating people and of secret and open constraint of a person as a specific means of management were always peculiar for various cultures and historical conditions and were used at all level of social interaction of people—from interpersonal to mass communication. However, at present—at the times of global informatization—this influence became convergent; it transformed into informational and psychological, posing the main threat to informational and psychological security of person and society. Such convergence of informational and psychological methods and technologies, which we shall call informational and psychological convergence, led to a new synergetic effect, behind which there are new threats to security of person and society, conflicts, and wars. It became the most effective social regulator of social relations.

Firstly, let us pay attention to the very notion of convergence, which is derived from Latin *convergo*—to approach—and which means approach of two and more phenomena. The phenomena are various aspects of one system or totality of different systems: society, culture, technologies, etc. This term is used in mathematics, biology, linguistics, and ethnography and means the processes of convergence. The notion of convergence has multiple levels. It is found in discourses of

different sciences: natural, social, and humanitarian. The notion of convergence began to be used by philosophers and sociologists in social and political sciences in the twentieth century.

One of the main concepts of modern bourgeois sociology, political economy, and political science that treats social development of modern age as dominating tendency for approach of two social systems—capitalism and socialism, with their further synthesis in a certain “mixed society” that combines positive features and attributes of each of them. (Philosophical encyclopedic dictionary 1983)

A. G. Dugin states that “starting from 1970s, the ideology struggle between socialistic and capitalistic groups somewhat slowed down. The “age of de-escalation” began. Soviet and American politicians began a careful dialog for the purpose of leaving the nuclear confrontation behind and ordering the “armament drive.” In this period, many people became interested in the “theory of convergence”” (Dugin).

The beginning of the twentieth century introduced another understanding of convergence into the convergent discourse—convergence of technologies—which was named NBIC convergence; it was treated as “not only mutual influence but interpenetration of technologies when boundaries between separate technologies are erased, and a lot of interesting results appear within interdisciplinary work at the joint of the spheres”. This phenomenon was called NBIC-convergence—according to the first letters of the spheres: N-nano; B-bio; I-info; C-cogno. The very term was introduced in 2002 by M. Roco and W. Bainbridge in the report “Converging Technologies for Improving Human Performance” (Roco and Bainbridge 2004).

Convergence is applied not only at all levels of knowledge, technologies, and society. In the broad understanding:

Convergence is viewed as growing and transforming interaction between scientific disciplines, societies, and spheres of human activities for achievement of compatibility and integration. Convergence is important for the information society, and analysis of social consequences of convergence allows solving the problems that cannot be solved by disciplinary science and creating new technologies and knowledge. (Baksansky 2014)

The concept of convergence entered the methodology of research as one of the methods of development of concepts. Specifics of the concept determine the methods of its conduct. One of such methods is the method of research integration and design. Integration is achieved by consecutive, three-stage application of the methods of divergence, transformation, and convergence. Convergence in this case is:

Consecutive solution of alternative and secondary problems until the development of the final solution that characterizes achievement of the goal of the research. Peculiarities of convergence are use of the methodologies of strict logical selection, elimination of uncertainty, and exclusion of alternatives for the set criteria. The main role here should belong to the formula of decision making that decreases their diversity. (Study of management systems)

Let us view the phenomenon of informational and psychological convergence, the sense of which has two main aspects: firstly, informational and psychological influence on human, and, secondly, informational and psychological security.

This research tries to determine convergent transformation of human conscience in the form of general regularity in the age of informational globalization that does not depend on the type of social mode. Regardless of the fact on which side a person is, he is involved by informational flow into psychological influence that allows making it an obedient “psycho-robot,” managing it, and turning it into a “zombie” with the help of special means and the technology of changing the human mind for the purpose of open and hidden psychological constraint of a person and society. Treatment of informational and psychological security as protection of individual and public conscience from informational influences that cause social processes of dysfunctional and psycho-emotional character led to the necessity to view these problems in conceptual and methodological aspect to reconsider convergence as methodology and tools of design of informational and sociopsychological interpenetration and interaction in the modern society.

On the one hand, society has necessity for breakthrough methods and technologies that conduct convergence of humanitarian, natural, and technological aspects of provision of informational and psychological security of a person, as well as humanitarian reflection of the technological reality of informational society. At present, there is no convergent methodology of design of the concept of informational and psychological security of a person and society. Without convergence of methodology and method of design, it is impossible to imagine effective concept of informational and psychological security of society. Development of effective model of informational and psychological security of person and society requires methodology of design in the form of convergence.

3 Methods and Subject Basis of the Research

Theoretical and methodological basis of the research consists of studies of foreign and Russian scholars. The research uses dialectical method that allows determining common regularities of development of ideas on convergence and tracking transformation of its idea in the historical context.

The methodological basis includes the systemic approach that orients the study at opening the integrity of the object, determining diverse types of connections of a complex object, and bringing them down into single theoretical picture. Systemic approach allows seeing convergence as a complex system in which elements of informational and psychological convergence are connected.

Consideration of the global problem caused by its development led to the necessity to use the methods of structural and functional approach.

The tools for the determination of specifics of the selected object include comparative and historical and comparative and competitive methods that allow for the determination and comparison of the levels in the development of the study's

object and changes and making historical parallels, analyzing peculiarities of classical and modern concepts of convergence.

4 Results of the Research

The performed research of the design of informational and psychological convergence could be presented in the form of the following provisions.

Informational and psychological convergence is the process of interaction of informational and psychological elements within social systems, characterized by their approach and a certain level of coordination of these elements' influence on social relations.

The methodology of informational and psychological convergence could be determined as a study of the means of organization of various subjects' activities on approach of informational and psychological systems and its realization in the concept of informational and psychological security.

The classification model of informational and psychological methods of convergence includes two groups of methods. The first group includes the methods based on the general informational and psychological influence on humans and social relations. The second group combines the methods of informational and psychological security.

Object of informational and psychological convergence is activities on the approach of various informational and psychological phenomena that emerge as a result of convergence and lead to appearance of social relations that allow controlling the informational and psychological phenomena.

Depending on the methods, it is possible to distinguish negative informational and psychological convergence that leads to threats and negative influence on a human and society and positive informational and psychological convergence that ensures informational and psychological safety.

The model of the process of informational and psychological convergence consists of three stages. The first stage is the process of divergence, dividing the problem field of the research into components—means, methods, objects, and items. The second stage is the transformation of the problem in the form of a clear scheme of transformations. The third stage is the conduct of convergent activities aimed at the elements of the system which will result in achievement of new goals of convergence.

The theoretical significance of the research consists in determination of the methodology of creating a comprehensive model of convergence of informational and psychological influences on humans and society. Practical value of the research consists in its providing a new approach to understanding the structure of informational and psychological system of security.

Thus, convergence explains the existing reality with all its complexity in the form of informational and psychological influence on a human and provides

methodological basis and a guarantee of the possibility for perceiving this reality on the whole.

Terminological diversity, observed in modern social and public sciences, allows making several conclusions. Firstly, modern social and cultural processes are complex, nonlinear, and instable. Secondly, dynamics of these processes has common regularities, related to alternation of the processes of divergence and convergence. Thirdly, modern stage of development of science and society points out at domination of the processes of convergence. But the very phenomenon of convergence has not been sufficiently studied by social and philosophical sciences.

The notions, which are discussed in the article, have instrumental character but are also phenomena that have to distinguish from the natural flow of development of nature and society the aspects that are peculiar for the general dynamics of scientific and technological and social development. Covering in one notion, the determining tendency of the coming transformation of science, technology, and society is a rather difficult task, and terminological diversity does not help to solve it.

5 Conclusions

The article performs analysis and specification of the terms necessary for development of methodology and tools of design of the concept of informational and psychological convergence. The above provisions could be the basis for development of the comprehensive model of convergence of informational and psychological influences on a human and society. Practical significance of the study consists in the fact that it provides a new approach to creation of the model of informational and psychological system of safety.

Acknowledgment The study was performed with financial support of the Russian Foundation for Basic Research, project No. 16-36-00154 “Development of convergence as a methodology and instrumentarium of creation of informational and psychological security of person and society.”

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National Venture Ecosystems in Management of Innovational Process Development

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Abstract Venture capital is the most important factor in increasing the economic transformation effectiveness, performed in many countries during the transition of national economy to the innovational path of development. Application of the ecosystem approach to the study of venture capital financing allows for deeper research from the positions of interaction of participants, factors, and mechanisms that influence nonlinearity of innovational processes. The article views the role of the venture ecosystem as a source of innovational process development. The main characteristics of the national venture ecosystems at the modern stage are analyzed. It is noted that against the background of growth of the global market of venture capital, the Russian venture ecosystem is peculiar for outflow of investors, depreciation of portfolios of many Russian venture funds, and domination of investments into projects of late stages. It is partially caused by influence of international sanctions on the domestic market of venture capital that led to the economic isolation of Russia from the external world. Analysis of existing problems of the Russian venture ecosystem showed that its sustainable development will be achieved only by systemic interaction of all members in the conditions for the development of entrepreneurial environment that corresponds to specifics of economic relations in Russia. The article shows perspectives of development of the Russian venture ecosystem, based on effective symbiosis of government and private initiative against the background of favorable institutional conditions.

JEL Classification Codes B52 • G24 • G28

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© Springer International Publishing AG 2017
E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_7

1 Introduction

The success of the formation of an innovational economy largely predetermines the role and place of a country in the global economy, as well as its international competitiveness and economic security. Functioning of modern Russian economy is peculiar for the search for possibilities to provide a completely new stage of development of society on the basis of the innovational process. The process of creation and implementation of innovations is related to high investment risk together with high expected incomes and the potential of growth of innovational projects' commercial price. This requires special mechanisms that ensure realization of innovational projects by effective management and financial resources under the conditions of high risks. Solving this task became possible due to venture capital financing that combines financial and intellectual resources. In its turn, effectiveness of venture capital financing is largely determined by the level of cooperation, competition, and self-development of its diverse participants. That's why venture capital financing should be viewed from the positions of the system and studied through the prism of the systemic approach (Kleiner 2008) that allows not only seeing it from positions of a single one on the basis of systemic analysis and synthesis but also determining the mechanism of increase of its effectiveness for achievement of goals.

The purpose of this work consists in the study of regularities of development and mechanisms of complication of national venture ecosystems and their role in management of innovational process development, which will allow for substantiation of provisions and recommendations that stimulates its development in the Russian economy.

2 Research Methods and Materials

This research is based on the consolidation of principles of evolutionary economy and institutional theory, according to which the institutes with maximal set of favorable attributes that stimulate effective development of society and economy are preserved and further developed. While the evolutionary approach (Popkova and Tinyakova 2013) allows studying the changes of system and their components in time, ecosystemic approach pays a lot of attention to their structural and functional organization, cycles of things' turnover, and establishment of functional ties, including those with the environment. The latter approach is the basis of the concept of innovational ecosystems. The very notion "ecosystem" was introduced into scientific turnover in 1935 by an English botanist A. Tensley (1935). Ecosystem approach views the innovational ecosystem from the point of view of interconnections and interrelations between their components and interconnections with external factors and other ecosystems (Fernando 2010). The concept of ecosystems is also peculiar for the study of the significance of the organizational culture with

creation or implementation of the novelty. The concept of ecosystems that is reflected in the works of K. Fukuda et al. (2008), D. Jackson (2011), and B. Mercan et al. (2011) could be applied not only to the study of the innovational process but to the study of perspectives of venture capital development. The notion of venture ecosystem was introduced into scientific turnover by J. Noel in the late 2000s (Noel 2008).

The needs of the practice of innovational transformation make economic science study peculiarities and conditions of venture capital functioning and the mechanism of its formation and development. Venture capital financing is based on the combination of financial and intellectual resources, as well as cooperation of its participants.

Venture capital financing in Europe, which started in the 1970s, was based on borrowing and adapting the 30-year experience of the USA—that's why the process of establishment of the sphere was very intense. Venture investments began to be used actively not only in Europe but also in other countries, including China, Japan, South Korea, Australia, and Singapore.

Necessity for the development of venture capital financing in Russia—which began in 1993—is one of the topical issues of Russian innovational economy formation. Despite the fact that venture business has been developing actively in recent years, the necessary support infrastructure was created, the legal based is improved, the volume of venture investments grows, and there are examples of success of venture projects, there are still certain problems (Ugnich 2013). The existing mechanism of venture capital financing is not always capable of functioning as an efficient mechanism that stimulates the development of the innovational process.

The concept of innovational ecosystems (Wessner 2007), which appeared before the concept of venture ecosystems, views their different levels. However, regardless of the level of a venture ecosystem, it is basically a complex open system.

3 Results of the Research

3.1 National Venture Ecosystems: General Structure and Development

Let us characterize national venture ecosystems, which will allow determining their specific features. Description of any complex systems includes two main components: morphological and functional.

Morphological description allows understanding the system's structure, which includes a lot of elements and their attributes, a lot of connections, and composition—uniting the elements into functional groups and ration of these groups. A group of venture ecosystems is represented by multiple elements that ensure promotion of venture capital for stages of innovational process—from the scientific

idea to appearance of commercial product. The elements of a venture ecosystem include its members—e.g., separate government funds and institutes of development, corporate investors, pension funds, business angels, etc. It is possible to note that the specter of venture ecosystem participants expands, super-angel funds appear, crowd funding actively develops, etc. All the above elements could be conventionally unified into functional groups as to different features. The share of participants of a Russian venture ecosystem, created with the help of the state, in which activities are aimed mainly as support for innovational development, constitutes no more than 40%. This shows insufficient level of self-development of venture ecosystem and allows characterizing the stage of its development—according to the J. Noel’s classification—as developing one (Noel 2008).

In certain studies, the analogy between a biological ecosystem and the banking system is viewed (Comes 2012), as well as innovational ecosystem (Romanov and Akhmadeev 2015), as three levels: plants that herbivorous animals eat that, in their turn, are food for predators. These three levels correspond to three levels of the banking system: individuals and companies, subsidiary banks, and main banks. In an innovational ecosystem, predators are represented by corporations, and preys by small innovational enterprises. While in a biological ecosystem the exchange energy is biomass, in the venture ecosystems, it is venture capital (Table 1).

Also, it is possible to group participants of a venture ecosystem according to participation at the stage of venture capital movement—seed, start-up, early stage, expansion, and exit. With movement up the stages, commercial risk and profitability of investments reduce. Special role belongs to availability of sources of venture financing at early stages with high risk, which stimulates overcoming the “death valley” and realization of the innovational process. Russian venture ecosystem is characterized by small volume of venture investments at early stages (seed and start-up), which negatively influences overcoming the “death valley” by Russian innovational companies.

Analysis of the ratio between venture capital dominating at early and late stages of financing could be done by the example of the rule of “product pyramid” which is used for the description of ecosystems. The share of venture capital, aimed at maximization of income (not support) at early stages (“seed” and “start-up”), should be larger than at late stages. Let us prove that by the example of venture ecosystems of the USA, Europe (EU countries), and Russia (Fig. 1).

Venture investments that are aimed at maximization of income dominate at early stages only in venture ecosystem of the USA, while in venture ecosystems of

Table 1 Comparative characteristics of biological and venture ecosystems

Ecosystem	Products	First level	Second level	Third level
Biological	Biomass	Predators	Herbivorous	Plants
Venture	Venture capital	Investors aimed at growth of income	Investors aimed at supporting innovational companies	Participants of everyday financing (creating conditions for formation of innovational companies)

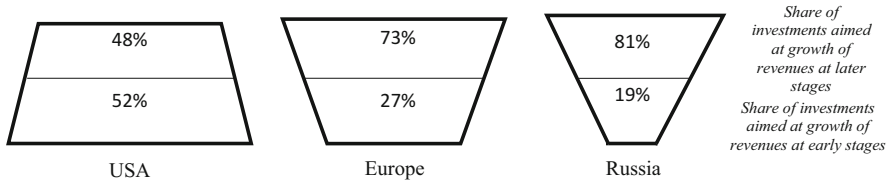


Fig. 1 Comparative characteristics of venture ecosystems according to the rule of “product pyramid” by the volume of direct and venture investments (aimed at income growth, 2013)

Europe and Russia, the rule of “pyramid” is not performed (government financing and means of institutes of development dominate there). This shows that the laws of spending energy in venture ecosystems of Europe and Russia are violated, which negatively influences their sustainability and reduces the effectiveness of self-development mechanism.

Functional description of the system is based on the explanation of the mechanism of its functioning with distinguishing a certain set of parameters. For each element, private subsystem, and the system on the whole, functionality is set by certain parameters:

- Incoming parameters (complex of the system’s parameters that cannot influence the external environment). A vivid example is the flow of investments and intellectual resources.
- Managing parameters, with the help of which it is possible to perform direct influence according to certain requirements, which allows for the management of the system (e.g., government regulation and stimulation of development of venture financing).
- Disturbing influences, the values of which change randomly with time and created deviations and uncertainty (e.g., competition, development of scientific and technical progress, financial crisis).
- Outgoing parameters (complex of the system’s parameters that directly influence the state of external environment). Examples of such parameters in the Russian venture ecosystem are its total volume of deals for a year (in 2015, \$2.19 billion), average deal (in 2015, \$ 1.5 million), the number of investors exits (in 2015, 26), etc.

Venture financing that is based on the principles of risk division, stage-by-stage financing, patience to company’s growth, and highly qualified management of the project corresponds to the principles of partnership organizational culture. Partnership culture is characterized by dynamics entrepreneurial and creative origin, emphasizing on development and acquisition of new possibilities, stimulation of innovations, improvisation, private initiative, and freedom. Organizational culture of a venture ecosystem is based on coordination of its members through their cooperation and competition. Competition here is understood as interrelations and rivalry emerging between “types” with similar requirements.

3.2 Problems of Development of the Russian Venture Ecosystem

Beginning from 2014, the Russian market of venture capital has been experiencing the significant decrease of activity. Surely, it is largely caused by sanctions and other unfavorable foreign economic factors. However, the main reason is weakness of market mechanisms which do not ensure sustainability of venture ecosystems by creation of powerful stimuli for their participants to increase their effectiveness. It is known that availability of private investment component is very important during realization of many tools of state policy. Thus, the volume of export of portfolio companies of the funds created with the participation of the Russian Venture Company's capital is estimated at \$27 million in 2014, which is only 0.3% of the volume of the Russian high-tech export (Ugnich et al. 2016). As foreign experience shows, support for innovational projects by state venture funds is an effective method of increasing the volumes of their financing. Using the assets of venture funds with state participation only reduces the probability of projects' successful passing all stages of the innovational process and achieving the stage of "exit" (Brander et al. 2014). At the same time, the mixed form of participation of state and private capitals in innovational projects allows the beginning enterprises to receive larger volume of financing. Availability of capital increases control over the targeted investing of assets and effectiveness of their use. One of the new sources of private capital is super-angel funds that are a syndicate of business angels with different experience of management. As a rule, the fund is managed by more experienced business angels—which reduces investment risk (Kraemer-Eis et al. 2014). Super-angel funds in the Russian venture ecosystem didn't become popular. Thus, for example, a super-angel fund Simile Venture, created in 2012, prefers to finance Internet companies in quickly developing markets of Turkey, Southeast Asia, and Latin America. Growth of super-angel funds would allow increasing the volume of venture investments at early stages and their effectiveness by means of risk reduction.

4 Conclusions

Successful functioning of innovational process and promotion of innovational projects require venture ecosystem, the effectiveness of which is determined by stimulating mechanism of "control," caused by order of business and effective cycle of venture capital, based on interaction of various investors (including state participation). Effective development of venture ecosystem requires single direction of all its participants which depends on existing conditions of the institutional environment. Development of venture capital financing is possible only under the conditions of the effective system of protection of ownership rights and availability of stimuli for attraction of investments into innovational enterprises and projects.

The Russian venture ecosystems achieving the sustainable self-development is possible only if systemic interaction of all its members is achieved in the conditions of development of entrepreneurial environment that corresponds to specifics of economic relations in Russia.

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Public Authorities and Business on the Possibilities of Region's Development

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Abstract The purpose of this chapter is to determine positions of representatives of public authorities and large and small business as to perspectives of region's development in the long term.

Discussion: Development of administrative and territorial entities of various countries depends on positions of various institutional groups as to the possibilities provided by external and internal environment. With a certain degree of convention, it is possible to suppose that expectations are realized in actions of various groups. The performed analysis is based on the idea that the most significant groups of the Russian society at the regional level are public authorities and large business. They accumulate the two most important resources—administrative power and capital. Small business is represented in this chapter as a background. Voronezh Oblast is a specific object of the research, represented in the country. However, most of position that reflect the possibilities of socio-economic development of the region are not specific and could be viewed as common for most of Russian regions.

Results: This chapter analyzes positions of representatives of public authorities and business as to possibilities of region's development. The received results allow stating that all groups of experts think that the strongest and most probable possibility is increase of financing of defense and military complex enterprises. Significant possibilities are the following: expansion of scales of financing of region's economy development, performed by private investors; growth of demand for products of enterprises of agro-industrial complex of the region in the world market; realization of the federal programs of development of import substitution perspective directions; federal authorities' making decisions on creation of territories with subsidized conditions of economic activities. As for expansion of business's participation in solving social problems, the positions are different. The least significant and least probable possibilities are the following: growth of demand for educational services of regional universities; using the existing recreational resource and converting the income of shadow economy into open financial resources.

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_8

JEL Classification Codes O18 • H11

1 Introduction

Development and realization of the programs of socio-economic development of administrative and territorial entities should be performed on the basis of interests and expectation of various institutional groups. Specifics of institutional belonging predetermine economic behavior of individuals as personalities and representatives of certain institutional groups. This is studied in economic literature: Baudrillard and Jaspers (2014), Hobson (2011), Galbraith (1979), Kornai (2012) and Marx (1973).

The results of studies as to positions of representatives of small business on possibilities and threats to region's development were published earlier (Risin et al. 2016).

Taking into account that the strongest in economic and institutional aspects are public authorities and large business, this chapter provides detailed analysis of their points of view and fragmentary reproduction of the results of research of positions of small business representatives.

2 Methodology of Research

The initial position for evaluation of problems and perspectives of region is traditional SWOT analysis, which presents possibilities and threats to region's functioning.

In order to learn the positions of public authorities and large business on perspectives of region's development, a survey of their representatives was conducted. The questionnaire included 15 positions that reflect possibilities and perspectives of region's development. The list of possibilities (Table 1) was formed by experts that represent various institutional groups of the region: public authorities, local administration, large business, small business, managers of budget organization, and representatives of public organization. Each position was evaluated according to two parameters—strength of influence and probability of realization.

Strength of influence of possibilities on socio-economic development of the region was evaluated by the experts according to the 5-point scale: strong—5 points, moderate—4 points, small—3 points, no influence—2 points. The probability of the use of a possibility was evaluated in the following way: high—“5,” medium—“4,” low—“3.” Lack of probability is not included into the scale, as its presence is fixed by the very fact of inclusion of a certain position into the list of possibilities. While evaluating the probability of realization of the possibility and threat, the authors did not use the generally accepted scale in fractions of a unit for

Table 1 Representatives of public authorities and large business on possibilities of region's development (score)^a

Possibilities of region's development	Average score (public authorities)		Average score (large business)	
	Influence strength	Probability of use	Influence strength	Probability of use
1. Sustainable demand for nickel ore in domestic and global markets	3.45	3.42	3.75	3.81
2. Demand for products of Voronezh enterprises for technical modernization of material and technical base of Russia	4.30	3.82	4.44	3.88
3. Expansion of scale of budget financing of development of region's defense complex companies	4.33	4.03	4.50	4.00
4. Expansion of scale of financing of development of region's economy, performed by private investors	4.48	4.09	4.19	3.94
5. Expansion of participation of business in solving social problem of the region (including with the help of the mechanism of public-private partnership, development of social entrepreneurship)	4.18	3.76	4.13	3.75
6. Growth of demand for products of the region's agro-industrial complex enterprises in the global market	4.12	3.91	4.19	4.00
7. Growth of demand for educational services of the region's universities from foreign consumers	3.58	3.64	3.69	3.44
8. Realization of federal projects of transport infrastructure development (highway Moscow-Sochi, concession highways, airport)	3.91	3.85	4.31	4.13
9. Realization of federal programs of development of perspective directions of import substitution	4.21	3.73	4.44	4.44
10. Realization of cluster projects in a wide specter of spheres of economy and social sphere	4.18	3.94	3.88	3.63
11. Federal authorities' making decision on creation of territories with subsidized terms of economic activities (special economic zone, etc.)	4.24	3.70	4.06	3.94
12. Use of previously unused tourist and recreational resources of the territory	3.73	3.61	3.75	3.50
13. Transfer of large companies (or their departments) from the capital to the regions	4.06	3.67	3.94	3.63
14. Growth of transit flows along the transport corridor "North-South," development of "transit" economy	4.06	3.76	3.88	3.44

(continued)

Table 1 (continued)

Possibilities of region’s development	Average score (public authorities)		Average score (large business)	
	Influence strength	Probability of use	Influence strength	Probability of use
15. Converting the incomes of “shadow economy” into open financial resources	3.91	3.33	3.75	3.63

^aSemi-bold shows high values of strength and probability of influence

provision of comparability of the results for both parameters. It is probably that the term “probability” is conventional in this case, but it fits the context.

The general common evaluation of possibilities as to the strength of influence and probability of realization includes average arithmetic weighted values for each questionnaire item. Evaluation of coordination of experts’ opinions was done with the fuzzy sets method.

This chapter analyzes positions of experts that represent public authorities of the region (33 experts), large business (17 experts), and small business (21 experts).

For the purpose of evaluating the level of coordination, fuzzy sets method was used (Konysheva and Nazarov 2011; Nazarov 2016).

The algorithm of the method used in the process of questionnaire surveys includes the following provisions.

1. Building the function of belonging μ_A of fuzzy set of estimates A in the following way:

Calculation of frequency of different evaluation of the offered alternatives (points) with formulas (1 and 2) is performed.

$$k := 1 \dots 5 \text{ (points)} \tag{1}$$

$$Z_{k,j} := \sum_{i=1}^n \left[\left[\left(X_i^{\{j\}} \right) \right] = k \right], \tag{2}$$

where $X_i^{\{j\}}$ — i -th element of subset j of matrix X (distribution of points on issues and experts).

Z —matrix of evaluation frequency;

n —number of surveyed experts for each group.

2. For the built fuzzy set of expert evaluations, the level of belonging of each of them to the set of evaluations A is determined. For that, the shares of each evaluation in the replies are calculated with formula (3).

$$G = \frac{1^*}{n} Z, \tag{3}$$

As a result, fuzzy set of expert evaluations G is received.

3. For further processing of the results, the limitation of the received values of the set was performed, necessary for calculating the Hamming distance—by

dividing the values of the set G by the maximal value of each possibility or threat offered by the experts (maximal value of the level of belonging of each score to fuzzy set of scores with expert's reply to each questions equals one). The values of expert scores of matrix of the group L are calculated by the works of L. Kobyshev and D. Nazarov (Konyshva and Nazarov 2011; Nazarov 2016).

4. For calculation of fuzzy index, the crisp set L_0 was used, which is the closest to the viewed fuzzy set, with application of a conventional function $iff()$ (formula 4)

$$L_{0k,j} := iff(L_{k,j} > 0, 5, 1, 0) \quad (4)$$

5. Calculation of fuzzy index is performed by the linear scale (Hamming distance) by formula (5):

$$I_A^L = \frac{2}{n} \sum_{i=1}^n |\mu_A(x_i) - \mu_{A_0}(x_i)|, \quad (5)$$

$\mu_A(x_i)$ —characteristical function of fuzzy set,

$\mu_{A_0}(x_i)$ —characteristical function of crisp set, closest to the viewed fuzzy set.

6. Calculation of modules of deviations of elements of fuzzy set of scores from the closest crisp set is performed with formula (6).

$$L_1 = |L - L_0| \quad (6)$$

Fuzzy index is calculated by formula (7).

$$L_3 = \frac{2}{n} \sum_{k=1}^n L_{1 k,j} \quad (7)$$

For evaluation of experts' positions on possibilities of region's development, the following allowances are made:

- Average values that characterize high level of influence and probability of realization of possibilities, equal to 4.0 and higher, belong to strong (high)
- Values of fuzzy index below 0.2 characterize high coordination of experts' positions

3 Main Part: Public Authorities and Large Business on Perspectives of Region's Development

Generalization of the results of processing of the data, received in the process of surveying the representatives of public authorities and large business of the region, is given in Table 1.

Table 2 Representatives of public authorities and large business on possibilities of region's development (fuzzy indices)^a

Possibilities of region's development	Average score (public authorities)		Average score (large business)	
	Influence strength	Probability of use	Influence strength	Probability of use
1. Sustainable demand for nickel ore in domestic and global markets	0.4857	0.2600	0.2000	0.2667
2. Demand for products of Voronezh enterprises for technical modernization of material and technical base of Russia	0.1750	0.2400	0.2667	0.3000
3. Expansion of scale of budget financing of development of region's defense complex companies	0.2118	0.1000	0.1818	0.1333
4. Expansion of scale of financing of development of region's economy, performed by private investors	0.1111	0.2600	0.2286	0.2857
5. Expansion of participation of business in solving social problem of the region (including with the help of the mechanism of public-private partnership, development of social entrepreneurship)	0.2000	0.1867	0.3000	0.2286
6. Growth of demand for products of the region's agro-industrial complex enterprises in the global market	0.3143	0.1000	0.2000	0.3429
7. Growth of demand for educational services of the region's universities from foreign consumers	0.3467	0.3250	0.3000	0.2400
8. Realization of federal projects of transport infrastructure development (highway Moscow-Sochi, concession highways, airport)	0.4250	0.3529	0.1778	0.1333
9. Realization of federal programs of development of perspective directions of import substitution	0.1867	0.1750	0.2667	0.1000
10. Realization of cluster projects in a wide specter of spheres of economy and social sphere	0.2600	0.1846	0.1333	0.2000
11. Federal authorities' making decision on creation of territories with subsidized terms of economic activities (special economic zone, etc.	0.2400	0.1333	0.3000	0.2667
12. Use of previously unused tourist and recreational resources of the territory	0.3765	0.2600	0.2667	0.3111
13. Transfer of large companies (or their departments) from the capital to the regions	0.3250	0.2000	0.2286	0.3429
14. Growth of transit flows along the transport corridor "North-South", development of "transit" economy	0.2933	0.2571	0.0923	0.1000

(continued)

Table 2 (continued)

Possibilities of region's development	Average score (public authorities)		Average score (large business)	
	Influence strength	Probability of use	Influence strength	Probability of use
15. Converting the incomes of "shadow economy" into open financial resources	0.3714	0.1739	0.2667	0.2286

^aSemi-bold shows highly coordinated opinions

Table 2 contains the data on the level of experts' opinions' coordination (the experts represent public authorities and large business) as to the strength of influence and probability of use of region's development possibilities.

4 Conclusions

Generalization of the above allows stating that opinions of representatives of public authorities and large and small business are coordinated regarding most of the positions that reflect possibilities of region's development. This could be treated as closeness of interests of these institutional groups.

According to the representatives of public authorities and large and small business, the strongest and the most probable possibility for the region's development is increase of financing of defense complex companies.

Significant possibilities are the following: expansion of scales of financing of region's economy development, performed by private investors; growth of demand for products of region's agro-industrial complex enterprises in the global market; realization of federal programs of development of perspective directions of import substitution (opinion of small business representatives is the most careful); creation of territories with subsidized conditions for economic activities. As for the probability of realization of these possibilities, the opinions of experts from the three groups differ—at that, the level of coordination of each group's experts is low.

There are differences in opinions of various groups' experts as to expansion of participation of business in solving the social problems of the region—its influence is highly evaluated by representatives of public authorities and large business, while small business does not consider this perspective to be significant. As for the probability of this event, all experts (including small business) consider it to be low.

The least significant and least probable possibilities, according to the experts of all three groups, are the following: growth of demand for educational services of regional universities; use of existing recreational resources; converting incomes of "shadow" economy into open financial resources. As to these possibilities, experts' opinions are coordinated.

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Tax Strategy of Global Crisis Management: Threats and Perspectives

Yulia G. Tyurina, Maria A. Troyanskaya, and Vera A. Volokhina

Abstract The purpose of this chapter is to study threats and perspectives of current Russian tax system and to develop the taxation strategy that fully corresponds to modern requirements of global crisis management. Apart from general scientific methods of the research, the work uses a specially developed proprietary method of evaluation of tax system effectiveness. The additional tools for analysis of the tax system state include the method of regression and correlation analysis. The authors analyze the role of the tax system in global crisis management, perform evaluation of effectiveness of current Russian approach to provision of tax security and related threats within global crisis management, determine perspectives of improvement of the tax system in Russia, and offer the tax strategy of global crisis management. As a result of the research, the authors come to the conclusion that ineffective tax systems are “black holes” of modern global economy. Shadow economy that is not accounted for by the official statistics very actively develops in them. Modern Russia is peculiar for ineffective tax system that hinders successful conduct of global crisis management. It might be one of the causes for a long period of decline on Russian economy, despite the active efforts for its overcoming.

JEL Classification Codes H21 • H12 • F62

1 Introduction

The financial crisis that began in 2008 and led to a lot of unsolved problems showed the necessity for systemic and complex conduct of measures within global crisis management. Playing an important role in the formation of entrepreneurial climate, taxes pose a certain interest in this context. Current tax strategies of the countries of

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the world are not adapted to conditions of crisis and do not allow preparing the economy to its emergence and further overcoming of its consequences.

Thus, actuality of search for new directions of tax policy within conduct of global crisis management rises. While conducting the research, the authors found on the offered scientific hypothesis that modern Russia is peculiar for ineffective tax system that hinders successful conduct of global crisis management. The purpose of this chapter is to verify this hypothesis and to study threats and perspectives of current Russian taxation system and to develop a tax strategy that would fully correspond to modern requirements of global crisis management.

2 Materials and Method

Conceptual and applied issues of formation and functioning of the tax system, as well as evaluation of its effectiveness, are viewed in the works of authors such as Luković (2016), Troyanskaya and Tyurina (2013), De Miguel et al. (2015), Bánfi (2015), Troyanskaya (2013), Funashima (2015), Arzayeva et al. (2015), among others.

Theoretical and methodological provisions of the development and conduct of the strategy of global crisis management are studied in the works of researchers such as Bryzhan and Hryhor'Eva (2015), Skiter et al. (2015), Sobkevych (2015), Shagieva (2013), Kravets et al. (2014), Kiselev and Shagieva (2013), Huete (2013), among others.

Apart from general scientific methods of the research—synthesis, induction, deduction, systemic and problem analysis, etc.—the offered hypothesis is verified with the help of the proprietary method of evaluation of tax system effectiveness. This method supposes conduct of evaluation with the following formula:

$$Et/s_n = (IFR_n - VSE_{n-1})/VSE_n \quad (1)$$

where Et/s —effectiveness of tax system;

IFR —total volume of inflation-free tax revenues into state budget;

VSE —volume of shadow economy;

n —studied period (year).

The authors find dependence between it (x_1) and the volume of tax revenues into the state budget for income tax (y_1).

The indirect indicator that reflects regularities of development of entrepreneurship is the level of business activity. Based on the study of its dynamics, the authors find dependence between it (x_2) and the volume of tax revenues into the state budget for corporate tax (y_2).

The received value of coefficient b in the model of the paired linear regression of type $y = a + bx$ is evaluated on the basis of the A. Laffer's concept.

3 Results

Ineffective tax systems are “black holes” of the modern global economy. Shadow economy that is not accounted for by the official statistics actively develops in them. Shadow business does not pay taxes and does not register the employees, which creates unfavorable conditions for labor activities and is not a reason for high level of official unemployment.

High level of taxes predetermines lower global competitiveness of the national economy for investors and entrepreneurs, which is a reason for hiding incomes, transferring them abroad, refusal from realization of investment and innovational projects, weak development of entrepreneurship, lower level and rate of economic growth than the potential one, etc.

Tax system plays an important role in conduct of global crisis management—it stimulates creation of favorable conditions for the development of entrepreneurship and attraction of investment into economy. Dynamically developing business that shows high innovational activity is an important anti-crisis tool. It is necessary for non-admission of crisis phenomena in economy and for overcoming them.

Tax system helps to redistribute total national income in favor of the least socially protected groups. That’s why under the conditions of crisis, tax income of the state allows supporting acceptable level of the country’s population. Being an important share of country’s population, they are used for overcoming the consequences of crisis within the selected political course. This process is shown in Fig. 1.

Let us evaluate the effectiveness of existing Russian approach to provision of tax security with the help of the developed method. Time frame of the research is 2010–2015. This period is selected for clarity of changes in the tax system, as in 2010 the unified social tax in Russia was replaced by social security contributions with preservation of the 26% rate, after which in 2011 the rate was increased to 34%, and then reduced to 30%. These changes influence income tax and corporate tax selected for the research. The estimate data for evaluation is given in Table 1.

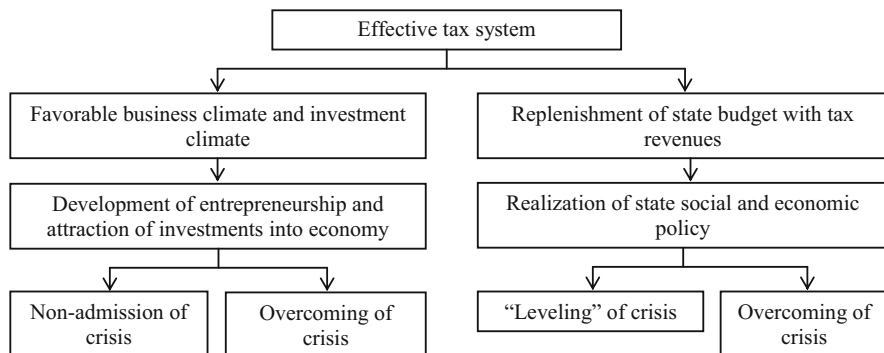


Fig. 1 Role of tax system in conduct of global crisis management

Table 1 Estimate data for evaluation of effectiveness of Russia's tax system in 2010–2015

Indicators	Values of indicators for periods (<i>n</i>)					
	2010	2011	2012	2013	2014	2015
IFR (RUB billion)	13,146.4	16,000.7	18,950.3	19,761.9	20,912.7	22,461.1
VSE (RUB billion)	27,246.4	34,463.1	42,980.1	49,947.7	56,078.9	63,093.0
GDP (RUB billion)	68,116	82,055	97,682	108,582	116,831	126,186
Income tax (RUB billion)	2432.1	3024.1	3865.9	3853.6	4057.1	4177.8
Economic activity (%)	67.7	68.3	68.5	68.7	68.9	69.1
Corporate tax (RUB billion)	407.5	512.0	606.4	731.2	773.8	853.5
Business activity (%)	14.0	17.0	22.0	28.0	35.0	71.0

Source: Rosstat (2015), Federal Tax Service (2016)

Based on the data of Table 1, let us calculate the level of effectiveness of the Russian tax system by the years. The calculations will have the following form:

$$Et/s_{2011} = (16,000.7 - 13,146.4)/34,463.1 = 0.08;$$

$$Et/s_{2012} = (18,950.3 - 16,000.7)/42,980.1 = 0.06;$$

$$Et/s_{2013} = (19,761.9 - 18,950.3)/49,947.7 = 0.01;$$

$$Et/s_{2014} = (20,912.7 - 19,761.9)/56,089.9 = 0.02;$$

$$Et/s_{2015} = (22,461.1 - 20,912.7)/63,093.0 = 0.02.$$

The received values of the effectiveness indicator show its low level (0.02 in 2015, which is below 1) and its negative dynamics in 2011–2015, which reflects gradual reduction of effectiveness of the Russian tax system (from 0.08 in 2011 to 0.02 in 2015).

As a result of the regression analysis, the following model of the paired linear regression $y_1 = 132.5 - 1.8x_1$ was obtained. The received value of coefficient b_1 shows that growth of economic activity by 1% leads to reduction of the volume of tax revenues for income tax in the Russian state budget by RUB 1.8 billion.

Also, the regression model $y_2 = 6.77 - 1.4x_2$ was received. The obtained value of coefficient b_2 shows that growth of business activities by 1% leads to reduction of the volume of tax revenues for corporate tax to the Russian state budget by RUB 1.4 billion. As a result of correlation analysis, it was found out that both regression models are statistically significant, and correlation coefficient of both studied indicators constitutes 99%.

Negative value of coefficients b_1 and b_2 shows the reverse dependence $y(x)$ —i.e., instead of growth of tax revenues for income tax and corporate tax during growth of economic and business activity we observe their reduction, which shows that the level of tax rates for these taxes in Russia is above the optimal level. Therefore, the Russian tax system is ineffective—according to the Laffer's criterion.

This is proved by growth of the volume of shadow economy, which constituted 50% of GDP in 2015, growing by 25% as compared to 2010. Its share exceeds the maximum allowed level of 10%, which is a negative phenomenon. Based on the

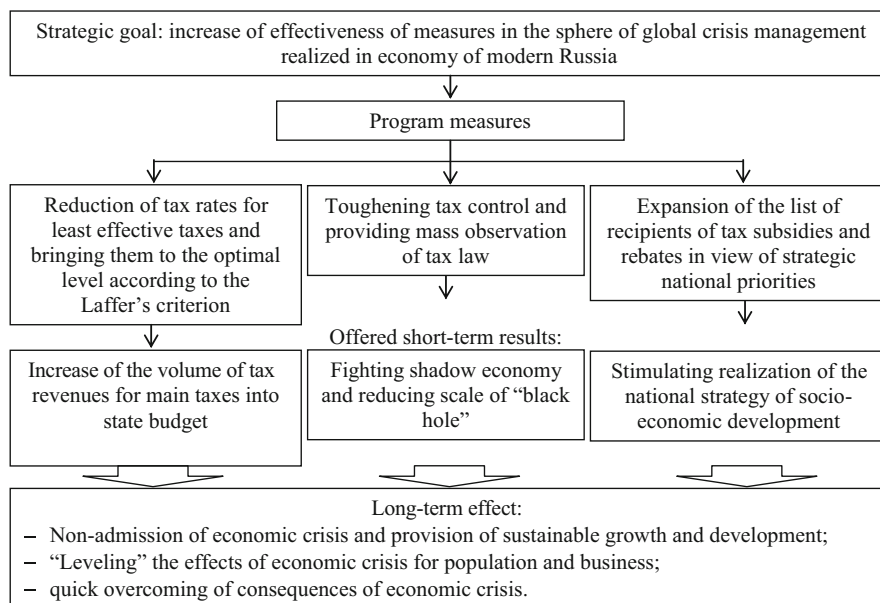


Fig. 2 Tax strategy of global crisis management

performed evaluation and analysis, it is possible to conclude that according to all applied criteria the tax system of modern Russia is ineffective.

The perspective directions of improvement of taxation system in Russia are the following:

- Reduction of tax rates for least effective taxes and bringing them to the optimal level according to the Laffer's criterion
- Toughening tax control and providing mass observation of tax law
- Expansion of the list of recipients of tax subsidies and tax rebates in view of strategic national priorities

For achievement of maximal effect from realization of these measures, the developed proprietary tax strategy of global crisis management is used, adapted to modern Russian conditions (Fig. 2).

4 Conclusion

In conclusion, it is necessary to emphasize that tax threats of crisis management grow in the context of globalization. That's why the issues of provision of tax security acquire strategic importance for the growth and development of national economy and should be solved at the national level. Under the conditions of crisis, there is a need for limitation of influence of free market and toughening of measures

of state regulation and control, as general national interests come to the foreground, exceeding significance of individual commercial profit.

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Economic Security as a Basis for National Food Sovereignty

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Abstract Agriculture has undergone strong pressure from imported food, which negatively affected the volume of agricultural production. The decline in production of agricultural products was more pronounced than the decline in the demand for food. Modern recovery of demand in the consumer market is going more rapidly than the recovery of agricultural production. In this regard, it is necessary to improve regional agricultural policy in the direction of establishment of a balance between the spheres of agro-industrial complex and provision of state support of subjects of food security of the population from the standpoint of competitiveness in the national and international level.

JEL Classification Codes Q18 • F52 • G28

1 Introduction

Agriculture is among the most economically vulnerable sectors of the economy. It is difficult to find another sector of the national economy, which suffered so much during the economic transformations of modern Russian history. Moreover, the results of such negative changes are quite obvious, spreading not only on purely economic indicators, but also having social consequences, manifested in the decline in the well-being of the rural population, degradation of social infrastructure in rural areas, the decline in the prestige rural lifestyle.

The economic vulnerability of agriculture or, in other words, the vulnerability of this sector from the impact of economic factors (mainly macroeconomic) risk for a variety of reasons, the main ones are the special situation of the industry in a number of other sectors of the economy that imposes greater dependence on the enterprises receiving agricultural raw materials for processing, lack of political

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security of the industry, and significant dependence of agricultural production on the human factor. The region is one of the main interested parties to ensure the economic security of agriculture.

2 Materials and Methods

This study is relevant due to the fact that in the modern society and regional, political, and business elites, there is a request for measures to prevent sharp fluctuations in agricultural output, as well as the realization that stability of the agricultural sector at the regional level can and should be provided with comprehensive measures of the formation factors of economic security.

The authors resorted to such methods of scientific research, as a monographic survey of the recent publications on the topic of the article, historical analysis, evaluation of statistical data characterizing the state of the industry dynamics, logical analysis, quantitative evaluation of key performance indicators, and organizational modeling.

3 Results

Food security is the ability of the system of production, storage, processing, wholesale, and retail trade in food products to provide them consistently and evenly during the year, all categories of the population of the territories concerned of the amount of consumption that meets the scientifically based medical standards (Kostyaev and Timofeev 2000).

Different looks at the phenomenon of food security are offered by Kostusenko, who offers to see and meet the needs of the population in accordance with the existing effective demand (Kostusenko 2009). However, the tenor of the reasoning of the discussed phenomenon: the conditions and mechanism of food security need to be created from the outside, and that means government. It does not specify a key industry of food security—agriculture. As the experience of recent history, trade copes with the food security of the population.

A detailed analysis of the concept of food security is presented by Gumerov. From his point of view, food security is achieved under several conditions:

1. Physical availability of food—the ability of organizations of the agro-industrial complex to manufacture, import and deliver the food to the consumer in amounts corresponding to the rational needs of all segments of the population;
2. Economic accessibility—the equality of social strata in the ability to rationally consume a reasonable amount of food;

3. Reliability of food security—the guarantee of food security of the population regardless of changes in weather conditions;
4. Sustainability of food systems—the ability of economic entities involved in the provision of food, to operate in the mode of expanded reproduction (Gumerov 2003).

As characteristics of the state of food security in the region, Czekalinski considered the security of the average resident of the region with basic foodstuffs, the prevalence of forms of food retail in the region, solvency of the population in the food market, and material and financial situation of agricultural producers and the food industry (Czekalinski 2012, 2013).

Kutsenko says that economic security is directly determined by the share of imports in domestic consumption. Thus, from the above statements, it follows that the competitiveness of the agricultural area affects the ability to produce a certain amount of food and, consequently, to occupy a certain place in the regional food market. In fact, you can agree that providing food security, the need to act comprehensively in several directions: to restrain imports to a reasonable level at the macroeconomic level; to provide an acceptable level of solvent demand in the food market; promote growth of the food supply by implementing a program of development of agricultural production, and industrial processing of agricultural products (Kutsenko 2015).

Makhanko puts the activities of agricultural producers under a regime of expanded reproduction in dependence on the state of investment attractiveness of the agrarian sector of the region. We agree with this position and, moreover, believe that the role of public authorities of the specific subject of the Russian Federation in maintenance of a mode of expanded reproduction of agricultural producers should be leading (Makhanko 2016).

Voronova considers food security as a condition for sustainable social climate in society and a crucial element of national security (Voronova 2012).

Veklenko and Zolotarev (2015) have food security in the region directly linked to the competitiveness of the agricultural sector, offering specific recipes to ensure the competitiveness of regional agro-industrial complex, involving the intensification, diversification, and optimization of the structure of agricultural production in the region, as well as improving product quality and development of cooperation and integration.

Kazakova, Mineeva, and Pshentsova argue that the state of food security Russia can reach in about 10–15 years (Kazakova et al. 2015). However, this result is the authors' dependence on full implementation of measures of state support of development of agriculture, including ensuring a reasonable pace of technical modernization, informatization, and development of rural areas.

Krylatykh believes that food security must be guaranteed, including a consistent supply of food to the requirements of technical regulations (Krylatykh 2013). According to Ushachev, the problem of import substitution is closely related to food security and requires the use of all existing potential of the country (Ushachev 2016).

In addition, in the world of science is a widespread point of view according to which food security is considered from the standpoint of population health (Friel and Ford 2015), protection and development of natural, in particular of the soil, the capacity of the national agriculture (Rickson et al. 2015), and further intensification of agricultural production (Chartres and Noble 2015).

There is a much unexpected point of view, according to which we should warn from the excessive build-up of food in their territory, due to the fact that it could trigger environmental problems and violation of agricultural lands that is in conflict with other important sectors of society (Brunstad et al. 2005).

However, in the world scientific literature, common point of view about the need to make food security a more serious matter highlights such aspects of the universal values of effective food security as the ability of agriculture as a sector of the economy and modern industry to withstand natural disasters (de Haen 2008) and to ensure the availability of food to all social strata (Falcon and Naylor 2005; LeBlanc et al. 2005).

4 Discussion

Throughout the period since 1991, the production of agricultural products in the analyzed region was characterized by negative trend. The majority of the years ended in reduction in the volume of agricultural output to the level of previous year in comparable valuation (Fig. 1).

The information presented is of great interest from the standpoint of summing up the total change in annual volume of agricultural output over a long retrospective period. In this respect, the author of the article presented by the national statistics index of production of agricultural products multiplied together among themselves,

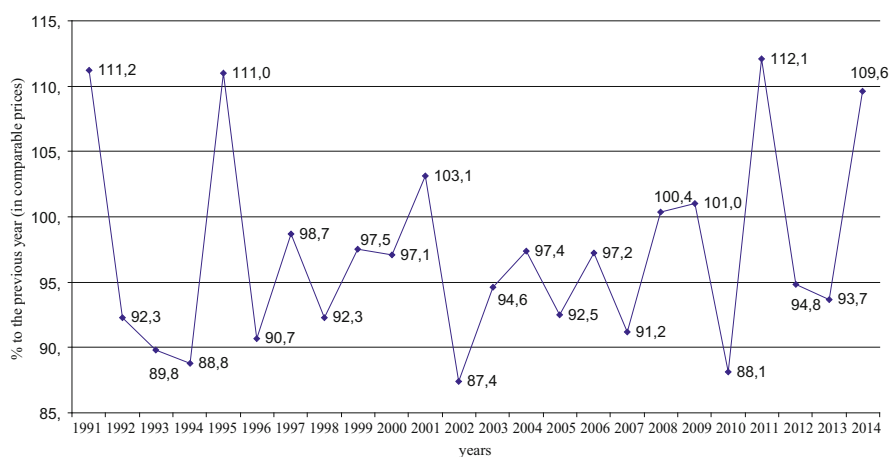


Fig. 1 Index of production of agriculture of the Kirov Oblast

Table 1 The index of production of agricultural products for the period 1991–2014 (%)

Category household products	2014 in % to 1991
All categories of farms and types of production	47.17
<i>Of all the categories of farms</i>	
Crop production	51.30
Livestock products	45.95
<i>Of all types of products</i>	
Products agricultural organizations	50.82
The products of the farms	47.59

which allowed identifying the picture of production agriculture over the last analyzed period (year 2014) relative to the base period (1991). The assessment is conducted in the context of agricultural production and farm categories (Table 1).

The analysis presented clearly shows that the products of agriculture of Kirov Oblast have decreased over the years 1991–2014, that is 22 more than twice—to 52.83%. Thus, there is a systematic decline in agriculture in the region.

Such outcome could easily be described as the manifestation of a negative factor in the economic security of agriculture of Kirov Oblast. It is obvious that under this factor it is impossible to consider the effect of any natural cause, as the climate in Kirov Oblast during the study time has not undergone any significant changes.

The negative factor of economic security equally impacts crop and livestock production in Kirov Oblast. Such conjugation may be due in part to the fact that the bulk of the products for sale are produced in agricultural organizations of Kirov Oblast in the field of animal husbandry. The crop mainly serves livestock production, producing feed for farm animals.

Picture of the distress of the agricultural sector is even more obvious when considering physical indicators. One of the main types of products of agriculture of Kirov Oblast is cattle. Figure 2 shows how over the period 1990–2014 years, the volume of production of cattle for slaughter in slaughter weight in all categories of farms of Kirov Oblast was reduced from 77.5 to 22.8 thousand tons or 3.4 times.

The most important feature of the development of agriculture in the study region was the fact that agricultural production has lagged significantly behind demand for the respective types of food. As can be seen from Table 2, the resources of meat (including offal) and meat products (slaughter weight) for 2009–2014 has increased from 101.7 to 116.6 thousand tons or 14.6%. Thus, the indicator characterizes the resource demand in the considered type of product.

In accordance with the data of Table 2, the demand for meat and meat products in Kirov Oblast grew by 14.6% in 2009, while meat production fell by 8.1%. Thus, meat production in Kirov Oblast is not able to withstand the threats and challenges of economic security.

The import of meat (including offal) and meat products (slaughter weight) on the territory of Kirov Oblast in the studied period increased from 38.2 thousand tons in 2009 to 68.0 thousand tons in 2014 or 1.8 times. As a result, the production of meat in the region and importation into the territory of the region is almost equal.

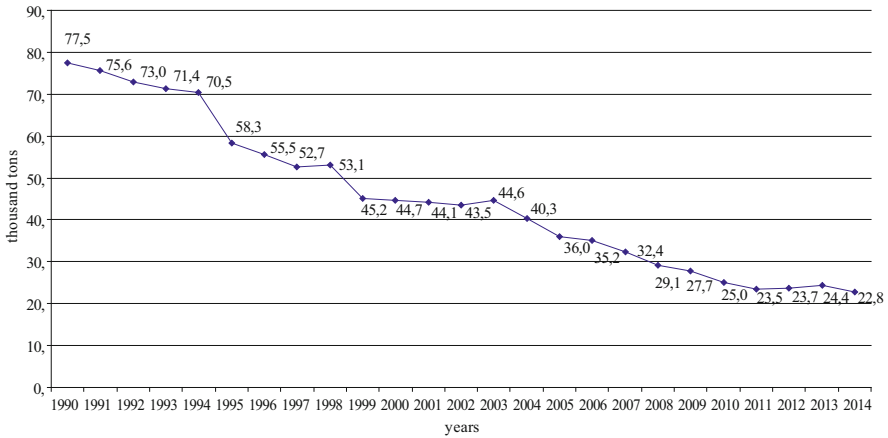


Fig. 2 The production of cattle in all categories of farms of Kirov Oblast

Table 2 Resources of meat (including offal) and meat products (slaughter weight) in comparison with the production of livestock and poultry in all categories of farms of Kirov Oblast, thousand tons

	2009	2010	2011	2012	2013	2014	2014 in % to 2009
Resources	101.7	104.7	106.1	107.4	112.3	116.6	114.6
Production	59.3	59.2	55.4	54.9	54.5	54.5	91.9

5 Conclusion

Thus, summing up the present study, it should be noted that the economic security of agriculture is closely linked to food security. The main threats to economic security of agriculture are such as:

- Freedom of movement of goods across the country
- Competition from foreign suppliers of agricultural raw materials (particularly—transportable raw materials)
- Competition from the food industry that are leaders by price and non-price competition in the Russian market.

Accordingly, as factors of economic security of agriculture should be noted:

- Orientation at interregional and international competition, the ability to withstand the price, and non-price pressure from the imported food
- Assistance from the state in overcoming the most dangerous factors of competition from imported food, leaving no chance to save this or that branch of agriculture through the development of primarily non-tariff regulatory instruments of foreign trade, particularly food imports

The tightening of requirements of technical regulations for food in part of withdrawal of the available number of ingredients of food products, the resources of which are formed in the market mainly through imports

The policy of state support of agricultural producers from the standpoint of the criterion of competitiveness—support should go mainly to companies implementing investment projects aimed at increasing competitiveness;

The establishment of a reasonable balance between the state support of agricultural producers and enterprises of processing of agricultural products—food industry needs to get enough momentum to ensure the competitiveness of the national and international level.

Acknowledgements The work was performed within the Russian Humanitarian Science Foundation's project No. 17-02-00179 "Development of the methodology of the complex express diagnostics of the level of economic security and model of ranking of regions of modern Russia on the basis of analysis of the factors of threats and risk-oriented system of indicators."

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Assistive Technologies Market: State and Perspectives

Natalia A. Sadovnikova, Ekaterina S. Darda, and Elena N. Klochkova

Abstract State policy of the Russian Federation in the sphere of support for handicapped and individuals with disabilities is aimed at formation of the effective system of development of domestic production of assistive technologies and devices. Full analysis of tendencies and regularities of formation of the Russian market of assistive technologies at the modern stage is performed—in view of indicators of production volumes—as well as evaluation of perspectives of development by 2017 of such assistive technologies and devices as support and tactile cane, crutches, and rails; wheelchairs with manual drive (room, walking, and active type), with electric drive, small scale; prosthetic devices, including implants and orthoses; orthopedic footwear; mattresses and pillows for preventing pressure sores; devices for dressing, undressing, and capture of items; special devices for reading the “talking books” and optical correction of partial sight; light and vibration signal indicators; hearing kits, including customized ear plugs; phone devices with text output; voice producing machines will allow for evaluation of the main directions of development of this market segment and of the level of formation of “accessible environment” for the handicapped and individuals with disabilities.

JEL Classification Codes C15

1 Introduction

The Convention on the Rights of Persons with Disabilities (http://www.un.org/ru/documents/decl_conv/conventions/disability) (Articles 20 and 26), the Resolution of the World Health Assembly WHA58.23 (The World Health Organization), and the UN Standard Rules on the Equalization of Opportunities for Persons with

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Disabilities (<http://www.un.org/ru/documents/>) emphasize the importance of assistive devices and suggest that states provide access to assistive devices and technologies by provision of sufficient volume of production and moderate price, thus stimulating teaching the handicapped, specialists, and employees of rehabilitation services. Thus, analysis of the assistive technologies market for the purpose of determination of existing tendencies and evaluation of development perspectives is very topical.

2 Materials and Methods

2.1 Object of the Research

According to the UNESCO, assistive/helping/technologies are devices, products, equipment, and software or services aimed at support or improvement of functional capabilities of persons with limited health. Assistive devices and technologies allow people with limited functions to improve their capabilities and, therefore, possibilities for independent life and participation in public life.

The notion of assistive technologies includes assistive, adaptive, and rehabilitation devices for people with limited possibilities. According to the types of existing limitations of capabilities, it is possible to distinguish assistive technologies and devices used with limited moving functions, limited hearing and speech, or cognitive disorders.

2.2 Analysis Methods and Tools

Analysis of existing tendencies in the assistive technologies market is performed with the use of analytical indicators of time rows. For the purpose of determination of perspectives of development of Russian market of assistive technologies and devices, this chapter gives forecasting values for the following types of assistive technologies and devices: support and tactile cane, crutches, and rails; wheelchairs with manual drive (room, walking, and active type), with electric drive, small scale; prosthetic devices, including implants and orthoses; orthopedic footwear; mattresses and pillows for preventing pressure sores; devices for dressing, undressing, and capture of items; special devices for reading the “talking books” and optical correction of hypovision; light and vibration signal indicators; hearing kits, including customized ear plugs; phone devices with text output; voice producing machines.

3 Received Results

3.1 Analysis of Tendencies of Assistive Technologies Market Development

Over 2009–2015, positive tendency was observed for the handicapped provision with prosthetics and orthopedic footwear. The average annual growth rate constituted 8% for each group. The number of mattresses and pillows for preventing pressure sores grew by 10.3%. The number of means for dressing, undressing, and capture of objects was growing by more than 25% annually; their number grew by 1.6 times, as compared to 2014.

The situation is quite opposite with the following groups of technical means: special clothing; special devices for reading the “talking books,” for optical correction of partial sight; guide dogs with equipment set; medical thermometers and tonometer with voice output. Over 2011–2015, there was negative dynamics of the provision of the handicapped with these means. The same applies as to the following groups: “TV with teletext for programs with hidden subtitles” and “Telephone devices with text output.” At that, their number grew by more than two times in 2015, as compared to 2014. As to provision with sound signalizers and hearing kits, large growth of indicators was observed in 2015, as compared to the previous year. The number of voice producing devices grew by 1.5 times in the last year. In 2011–2015, their number grew by 20% annually.

At last, in 2011–2015, the number of services for sign language interpretation grew by 10%. Over the last year, their number grew by 1.5 times.

According to the Ministry of Labor of the RF (www.rosmintrud.ru), in 2015, 83,070 handicapped children were recommended technical means of rehabilitation, including 82.4% during reexamination (Table 1). The largest number of the handicapped account for the ones requiring orthopedic footwear (54.8%); diapers (29.5%); removable joint-immobilizers of lower limbs (25.8%); walking carts with manual drive (19.5%); corsets, headholders, retractors, obturators (17.2%); hearing kits, including hand-made ear plugs (13.4%); and lower limb devices (10.5%), rests (10.4%), and walkers (10.3%).

3.2 Forecasting Assessments of the Assistive Technologies Market

For forecasting of dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1).

The existing dynamics of volumes of production of support and tactile canes, crutches, rests, and rails is approximated by the following model:

Table 1 Indicators of precision and adequacy of forecasting models of main indicators of the assistive technologies and devices market in the Russian Federation

Indicator	Model	Indicators of adequacy	Indicators of precision
Production of support and tactile canes, holds, and rails	$Y(t) = -1,055,918.798 - 338,069.452 \times t + 1,431,731.604 \times \sqrt{t}$	84.76	36.44
	$Y(t) = +124,804.320 + 183,605.828 \times \ln(t)$	29.27	0.16
	$Y(t) = -163,519.500 + 264,566.125 \times t - 27,316.574 \times t^2$	68.78	0.05
Production of wheelchairs with manual drive and electric drive, small scale	ARISS(1, 0, 1)	28.83	18.54
	$Y(t) = -28,540.797 - 32,784.141 \times t + 146,948.359 \times \sqrt{t}$	33.63	29.01
Production of prosthetics, including endoprosthetics, and orthosis	$Y(t) = t/(+0.000004 + 0.000007 \times t)$	51.77	23.88
	$Y(t) = +407,451.469 + 112,571.430 \times \ln(t)$	63.10	48.47
	$Y(t) = t/(+0.000001 + 0.000001 \times t)$	55.41	43.51
	$Y(t) = +407,643.969 + 34,226.465 \times t$	61.23	41.80
	$Y(t) = 540,804.943 + 59,974.074 \times t$	41.88	55.13
Production of orthopedic footwear	$Y(t) = 560,593.750 \times \exp(+0.079 \times t)$	56.62	54.67
	$Y(t) = 507,922.250 + 81,896.195 \times t - 2,740.351 \times t^2$	32.78	54.86
	$Y(t) = t/(+0.000001 + 0.000001 \times t)$	61.87	30.86
Production of mattresses and pillows for preventing pressure sores	$Y(t) = -27,487.914 - 20,060.846 \times t + 94,819.117 \times \sqrt{t}$	43.81	35.13
	$Y(t) = +51,504.842 + 19,152.745 \times \ln(t)$	80.43	33.31
Production of devices for dressing, undressing, and capture of objects	$Y(t) = +501.000 + 241.893 \times t$	75.22	19.25
	$Y(t) = +541.773 + 760.993 \times \ln(t)$	68.71	25.87
	$Y(t) = t/(+0.0014 + 0.0003 \times t)$	71.77	33.30
Production of special devices for reading "talking books," for optical correction of partial sight	$Y(t) = 27,812.427 + 12.643 \times t$	50.80	0.89
	$Y(t) = +27,849.041 + 11.468 \times \ln(t)$	50.68	0.87
	$Y(t) = 1./(+0.000038 - 0.000004 \times \exp(-t))$	60.15	1.76
Production of sound signalizers, light, and vibration	ARISS (2,0,1)	52.76	41.09
	$Y(t) = +22,075.973 - 2793.938 \times \ln(t)$	73.020	5.273
	$Y(t) = +22,063.570 - 847.571 \times t$	69.465	5.501
	$Y(t) = +22,587.762 \times \exp(-0.057 \times t)$	70.461	5.022

Production of hearing kits, including hand-made ear plugs	$Y(t) = + 69, 272.295 \times \exp(+0.051 \times t)$	79.55	34.37
	$Y(t) = + 68, 712.188 + 14036.663 \times \ln(t)$	73.71	31.81
	$Y(t) = + 67, 869.708 + 4, 484.357 \times t$	70.34	33.23
Production of phone devices with text output	$Y(t) = + 25, 866.608 - 6, 200.736 \times t + 556.216 \times t^2$	54.71	5.70
	$Y(t) = + 19, 581.160 - 6, 070.512 \times \ln(t)$	78.31	2.37
	$Y(t) = + 40, 828.579 + 5, 060.005 \times t - 25387.684 \times \sqrt{t}$	70.36	5.32
Production of voice producing devices	$Y(t) = + 551.366 + 204.857 \times \ln(t)$	63.08	21.82
	$Y(t) = -108.113 - 150.904 \times t + 785.608 \times \sqrt{t}$	50.03	20.90
	$Y(t) = t/(+0.001 + 0.001 \times t)$	52.59	18.34

$$Y(t) = -1,055,918.798 - 338,069.452 \times t + 1,431,731.604 \times \sqrt{t}$$

The received forecasting assessments of volumes of production of support and tactile canes, holds, and rails allow predicting with 95% probability that the volumes will constitute 289,074 in 2016 and will reduce to 196,650 in 2017.

For forecasting of dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1). The best results for building forecasting models in this case is provided by auto-regression moving average model with parameters 1, 0, 1.

The obtained forecasting assessments of volumes of production of wheelchairs with manual drive (indoor, outdoor, and active type), electric drive, and small scale allow supposing with 95% probability that the volume will constitute 137,910 in 2016 and will reduce to 135,736 by 2017.

For forecasting of dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1). The existing dynamics of volumes of production of prosthetics, including endoprosthetics, and orthosis is approximated by the following model:

$$Y(t) = +407,451.469 + 112,571.430 \times \ln(t)$$

The received forecasting assessments of volumes of production of prosthetics, including endoprosthetics, and orthosis allow expecting with 95% probability the level of 641,537 in 2016 and 654,796 in 2017 (Fig. 1).

Dynamics of the indicator of volume of production of orthopedic footwear has a tendency for growth. For forecasting the dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1). Dynamics of the volumes of production of orthopedic footwear is approximated by the following model:

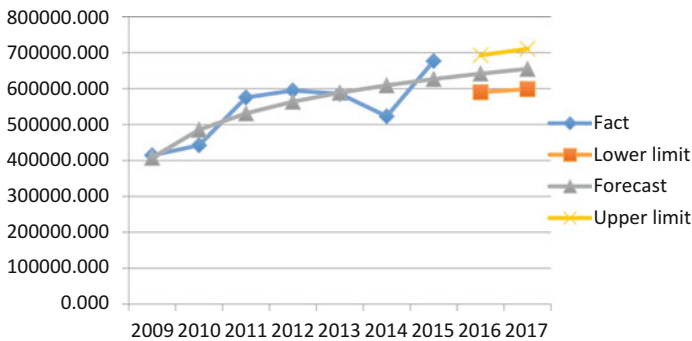


Fig. 1 Forecasting assessments of volumes of production of prosthetics, including endoprosthetics, and orthosis

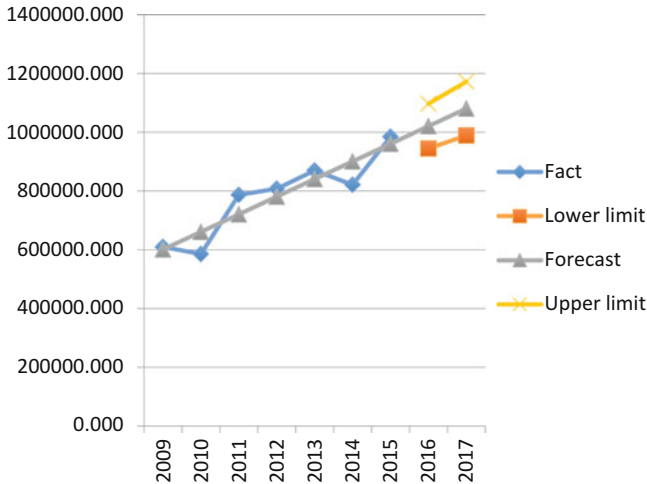


Fig. 2 Forecasting assessments of volumes of production of orthopedic footwear

$$Y(t) = 540,804.943 + 59,974.074 \times t$$

The received forecasting assessments of volumes of production of orthopedic footwear allow expecting with 95% probability the level of 1,020,598 in 2016 and 1,080,571 in 2017 (Fig. 2).

Volumes of production of mattresses and pillows for preventing pressure sores were growing in 2009–2015. For forecasting of dynamics of this indicator, let us view the indicators of precision and adequacy of several models (Table 1). Dynamics of volumes of production of mattresses and pillows for preventing pressure sores is approximated by the following model:

$$Y(t) = t / (+0.00001 + 0.00001 \times t)$$

The received forecasting assessments volumes of production of mattresses and pillows for preventing pressure sores allow expecting with 95% probability the level of 85,664 in 2016 and 86,581 in 2017.

For forecasting of dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1). Thus, the existing dynamics of volumes of production of devices for dressing, undressing, and capture of objects is approximated by the following model:

$$Y(t) = +501.000 + 241.893 \times t$$

The received forecasting assessments of volumes of production of devices for dressing, undressing, and capture of objects allow expecting with 95% probability the level of 2436 in 2016 and 2678 in 2017.

For forecasting of dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1).

The existing dynamics of volumes of production of special devices for reading “talking books” and optical correction of partial sight is approximated by the auto-regression model of sliding average with parameters 2, 0, 1.

The received forecasting assessments of volumes of production of special devices for reading “talking books” and optical correction of partial sight allow expecting the 95% probability of the level of 40,014 in 106 and 19,906 in 2017.

Analysis of dynamics of volumes of production of sound signalizers (light and vibration) allows concluding on lack of sustainable direction of development.

For forecasting of dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1).

Existing dynamics of volumes of production of sound signalizers (light and vibration) is approximated by the following model:

$$Y(t) = +22075.973 - 2793.938 \times \ln(t)$$

The received forecasting assessments of volumes of production of sound signalizations (light and vibration) allow expecting with 95% probability the level of 16,266 in 2016 and 15,937—in 2017.

Dynamics of the indicator of volumes of production of hearing kits, including hand-made ear plugs, allow concluding on existing of the tendency for increase of production in the domestic market. For forecasting of dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1). Dynamics of the volumes of production of hearing kits, including hand-made ear plugs, is approximated by the following model:

$$Y(t) = +69272.295 \times \exp(+0.051 \times t)$$

The received forecasting assessments of volumes of production of hearing kits, including hand-made ear plugs, allow expecting with 95% probability the level of 103,766 in 2016 and 109,142 in 2017 (Fig. 3).

Dynamics of production of phone devices with text output is characterized by very unstable character; quick reduction of production volumes was observed in 2009–2014, and 2015 was marked with quick growth. For forecasting of dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1).

Thus, existing dynamics of volumes of production of phone devices with text output is approximated by the following model:

$$Y(t) = +25866.608 - 6200.736 \times t + 556.216 \times t^2$$

The received forecasting assessments of volumes of production of phone devices with text output allow expecting with 95% probability the level of 11,859 in 2016 and 15,113 in 2017.

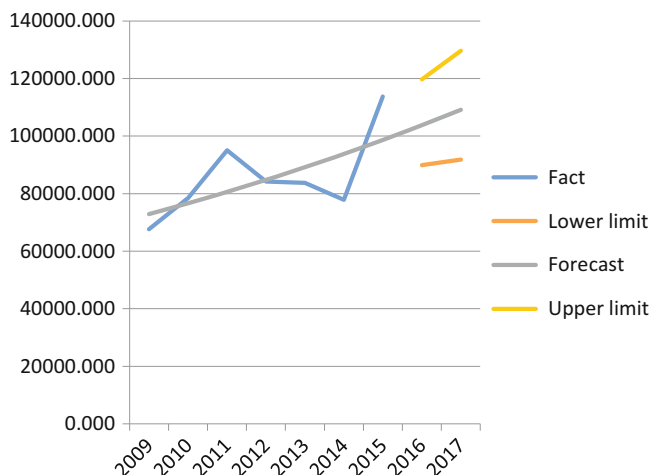


Fig. 3 Forecasting assessments of volumes of production of hearing kits, including hand-made ear plugs

Volumes of production of sound generating devices grew in the studied period, except for 2014 that was marked by certain reduction.

For forecasting the dynamics of this indicator, let us view indicators of precision and adequacy of several models (Table 1).

Thus, existing dynamics of volumes of production of sound producing devices is approximated by the following model:

$$Y(t) = +551.366 + 204.857 \times \ln(t)$$

The received forecasting assessments of volumes of production of sound generating devices allow expecting with 95% probability the level of 913 in 2016 and 923 in 2017 (Fig. 4).

Thus, the received forecasting assessments allow concluding on perspectives of development of certain segments of the assistive technologies and devices market development.

4 Discussion

According to the World Health Organization, only one out of ten persons in the world has access to assistive technologies. This is caused by high cost of technologies, low level of information from market subjects, insufficient distribution, lack of qualified specialists in this sphere, measures of state policy, and lack of financing (The World Health Organization). A small number of countries have state programs aimed at formation of policy in the sphere of assistive technologies.

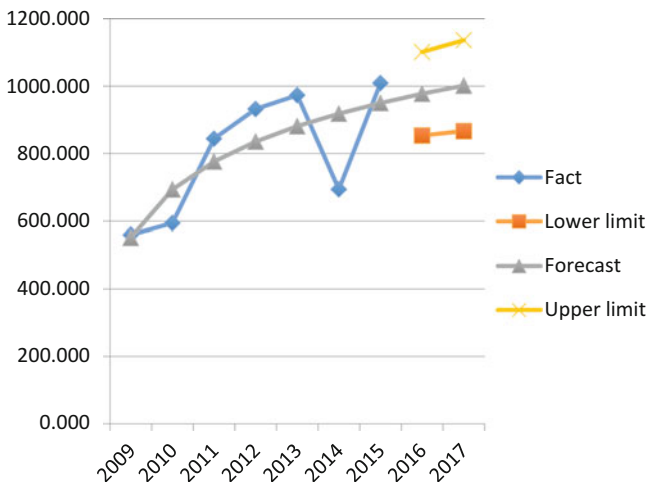


Fig. 4 Forecasting assessments of volumes of production of sound generating devices

The problem of dependence of production of assistive technologies on imported products is very urgent in Russia. In order to support domestic manufacturers, the Government of the Russian Federation takes active measures for supporting domestic manufacturers within the existing state programs. In particular, here we speak of the federal targeted program “Development of pharmaceutical and medical industry of the Russian Federation until 2020 and further perspective,” aimed at innovative development of medical industry. For the purpose of realization of this task, it is necessary to focus on satisfaction of real needs of people with disabilities in these technologies.

5 Conclusions

Existing tendencies of formation of the assistive technologies and devices market are based on realization of a complex and systemic approach aimed at regulation of life activities of people with disabilities and low-mobile groups of population that ensures social adaptation and involvement of people with disabilities into economic and social processes that take place in society. Realization of this approach is ensured by development and implementation into practice of new R&D, technical, and technological solutions developed in view of Russian and international experience that stimulate formation in the RF of the system of provision with assistive technologies and devices for the purpose of creation of accessible environment for people with disabilities and other low-mobile groups of population for the purpose of increasing their mobility.

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Management of Integrated Risk of Industrial Enterprise

Nikolai G. Sinyavsky

Abstract This chapter views the influence of totality of production processes on integrated risk by the example of a company of timber processing complex. The connection between change of elementary risks and change of integral risks is determined. Based on this, the quality of the system of risk management and the possibility for increasing it are viewed. Also, the connection between the structure of the elementary risks' system and the level of integrated risks is determined. The possibilities for reduction of integrated risk within the existing structure and change of the risks' structure are viewed. Diversification is considered as a way of changing the structure of risks.

JEL Classification Code D21

The issues of management of companies' risks are very interesting in theoretical and practical aspects (Ilyenkova 1999). However, during studying the actions of enterprise management systems in view of risk, the largest attention is paid to various means that do not suppose influence either on multi-level structure of risk or on the probability of realization of elementary risk factors. These are methods of diversification, risk evasion, insurance, etc. (Ayvazyan et al. 1998). That's why it is expedient to pay more attention to the mutual influence of changes of risks in a complex system of risks and influence of these changes on the integral risk of a production system (Avdiysky and Bezdenezhnykh 2013; Sinyavsky 2016).

For the purpose of a clear picture of business processes that are performed at enterprise, let us consider the totality of these processes in the form of oriented graph. The peaks of the graph are processes going into enterprise. The arches reflect relations between the enterprise's processes.

A simplified model of timber processing enterprise is presented in Fig. 1.

Formally, this model Λ_I of enterprise is a parametric vector functional graph and is described with the following expression (Gorelova 2013):

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,

DOI 10.1007/978-3-319-60696-5_12

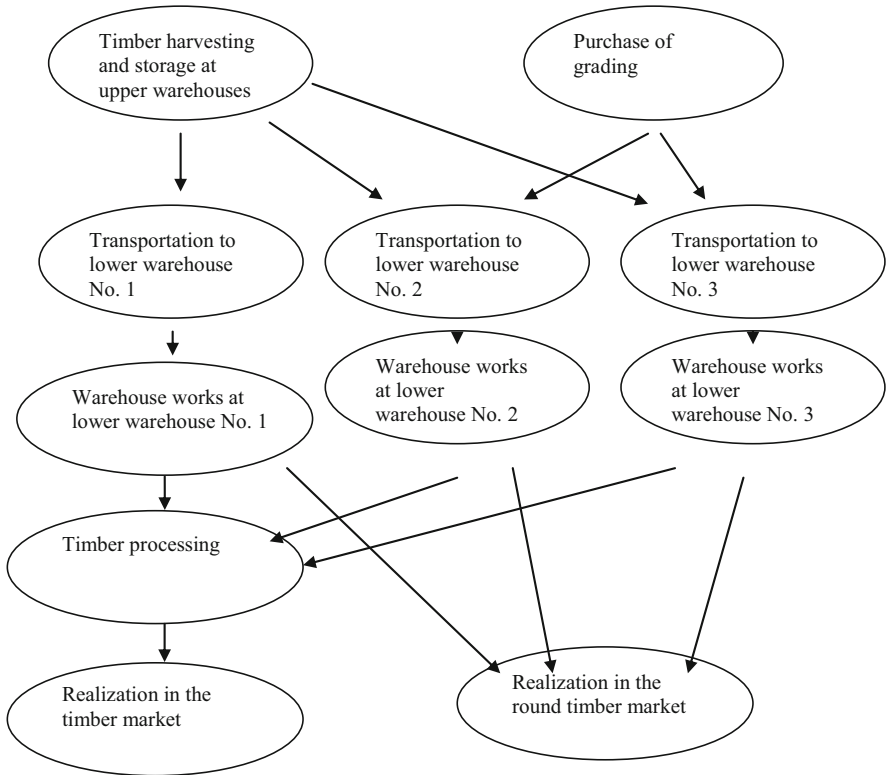


Fig. 1 Simplified model of timber processing enterprise

$$\Lambda_m = \langle \langle V, S \rangle, Y, \varphi, \eta \rangle,$$

where $H = \langle V, S \rangle$ —signed oriented graph that reflects the succession of performance of the processes that are realized in the production system; V —multitude of concepts; concepts (peaks) $v_i \in V, i = 1, 2, \dots, I$ are elements of the studied system; S —multitude of arches; arch $s_{ij} \in S; i, j = 1, 2, \dots, I$ reflects interconnection between peaks v_i and v_j ; $Y: V \rightarrow \eta, Y$ —multitude of parameters of concepts, $Y = \{Y(v_i) \mid Y(v_i) \in Y, i = 1, 2, \dots, I\}, Y(v_i) = \{y_t^i\}, t = 1, 2, \dots, T, y_t^i$ — t —parameter of the concept v_i, η —space of values of the peaks' parameters; $\varphi = \varphi(Y, S)$ —functional of arches' transformation reflecting the interconnection between the parameters of the concepts that correspond to the arches. Values of the concept's parameters are random values that reflect successful or unsuccessful process. Dependence $\varphi(Y, S)$ is a stochastic function.

1 Analysis of combination of random states of production processes, when success of supportive processes is characterized by conditional absolute probabilities

Let us distinguish preliminary and final processes out of all processes that take place at the enterprise. The quality of preliminary processes determines the quality of the final process, which, in its turn, determines the quality of work of the whole business. Let us view the case when one final process can be distinguished from the whole system of production processes. Then all other processes will be supportive. The totality of supportive processes influences the main process that does not influence any processes. In Fig. 1, the main process is the process “Realization in the timber market” or “Realization in the round timber market”.

Let us view the issue of influence of processes organized according to the hierarchical principle, the random state of which is characterized by unconditional or conditional probabilities. The processes characterized only by unconditional probabilities are external.

Let us use the following symbols.

Here: a_0 —probability of unsuccessful work of the final process under the condition of successful work of the totality of supportive processes; b_0 —probability of unsuccessful work of the final process under the condition of unsuccessful work of totality of supportive processes; a_{i1}, \dots, a_{in} —probability of unsuccessful supportive processes at i -th level, $i \in \{1, \dots, m\}$, viewed as resulting processes under the condition of successful incoming processes of $i + 1$ -th level, $i \in \{1, \dots, m - 1\}$; b_{i1}, \dots, b_{in} —probability of unsuccessful supportive processes of i -th level under the condition of unsuccessful totality of incoming processes of $i + 1$ -th level; a_{i1}, \dots, a_{in} and b_{i1}, \dots, b_{in} —conditional risks; p_{i1}, \dots, p_{in} —probability of unsuccessful work of supportive processes of i -th level, accordingly; $p_0^0, p_{i1}^0, \dots, p_{in}^0$ —probability of unsuccessful external processes that influence the final process and supportive processes; p_{i1}, \dots, p_{in} and $p_0^0, p_{i1}^0, \dots, p_{in}^0$ —unconditional risks. Then, $p_0^0, p_{i1}^0, \dots, p_{in}^0$ —external unconditional risks.

The hierarchical scheme is presented in Fig. 2. The viewed production system contains $m + 1$ hierarchical levels.

Let us suppose that probability of events of the upper level are related to the probabilities of events of the next, lower, level with the following ratios:

$$P = (1 - a_0)f_0(p_{11}, \dots, p_{1n}, p_0^0) + (1 - b_0)[1 - f_0(p_{11}, \dots, p_{1n}, p_0^0)]$$

Here,

$$p_{11} = a_{11}f_{11}(p_{21}, p_{22}, \dots, p_{2n}, p_{11}^0, \dots, p_{1n}^0) + b_{11}[1 - f_{11}(p_{21}, p_{22}, \dots, p_{2n}, p_{11}^0, \dots, p_{1n}^0)];$$

$$p_{1n} = a_{1n}f_{1n}(p_{21}, p_{22}, \dots, p_{2n}, p_{11}^0, \dots, p_{1n}^0) + b_{1n}[1 - f_{1n}(p_{21}, p_{22}, \dots, p_{2n}, p_{11}^0, \dots, p_{1n}^0)];$$

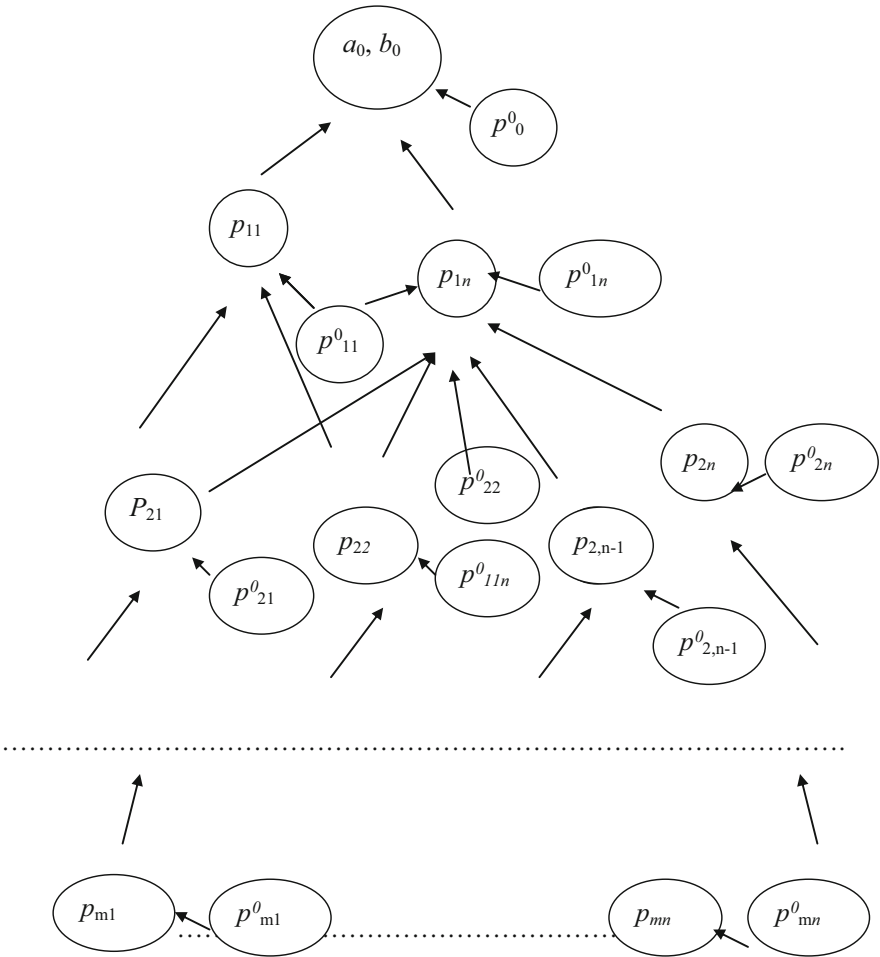


Fig. 2 Scheme of interaction of the company's processes. Source: compiled by the author

$$\begin{aligned}
 p_{m-1,1} &= a_{m-1,1}f_{m-1,1}(p_{m,1}, \dots, p_{m,n}, p_{m-1,1}^0, \dots, p_{m-1,n}^0) \\
 &\quad + b_{m-1,1}[1 - f_{m-1,1}(p_{m,1}, \dots, p_{m,n}, p_{m-1,1}^0, \dots, p_{m-1,n}^0)]; \\
 p_{m-1,n} &= a_{m-1,n}f_{m-1,n}(p_{m,1}, \dots, p_{m,n}, p_{m-1,1}^0, \dots, p_{m-1,n}^0) \\
 &\quad + b_{m-1,n}[1 - f_{m-1,n}(p_{m,1}, \dots, p_{m,n}, p_{m-1,1}^0, \dots, p_{m-1,n}^0)]; \\
 p_{m1} &= a_{m1}f_{m1}(p_{m1}^0, \dots, p_{mn}^0) + b_{m1}[1 - f_{m1}(p_{m1}^0, \dots, p_{mn}^0)]; \\
 p_{mn} &= a_{mn}f_{mn}(p_{m1}^0, \dots, p_{mn}^0) + b_{mn}[1 - f_{mn}(p_{m1}^0, \dots, p_{mn}^0)];
 \end{aligned}$$

$f_0(^{\circ})$, $f_{ij}(^{\circ})$ —probabilities of successful work of the totality of incoming supportive processes, $1-f_0(^{\circ})$, $1-f_{ij}(^{\circ})$ —probabilities of unsuccessful totality of incoming supportive processes. Let us view the dependence of change of probability of successful work of production system from the change of probabilistic characteristics of external processes. For that, let us use private derivative of probability p for probabilities $p_0^0, p_{11}^0, \dots, p_{mn}^0$.

We have the following:

$$\begin{aligned} \frac{\partial P}{\partial p_0^0} &= (b_0 - a_0) \frac{\partial f_0}{\partial p_0^0}; \\ \frac{\partial P}{\partial p_{11}^0} &= \frac{\partial P}{\partial p_{11}} \frac{\partial p_{11}}{\partial p_{11}^0} + \dots + \frac{\partial P}{\partial p_{1n}} \frac{\partial p_{1n}}{\partial p_{11}^0} \\ &= (b_0 - a_0) \left[(b_{11} - a_{11}) \frac{\partial f_1^1}{\partial p_{11}^0} + \dots + (a_{1n} - b_{1n}) \frac{\partial f_1^n}{\partial p_{11}^0} \right]; \\ \frac{\partial P}{\partial p_{m1}^0} &= \frac{\partial P}{\partial p_{11}} \left(\left(\frac{\partial p_{11}}{\partial p_{21}} \left(\frac{\partial p_{21}}{\partial p_{31}} \dots \left(\frac{\partial p_{m-1,1}}{\partial p_{m1}} \frac{\partial p_{m1}}{\partial p_{m1}^0} + \dots + \frac{\partial p_{m-1,n}}{\partial p_{mn}} \frac{\partial p_{mn}}{\partial p_{m1}^0} \right) \right) \right) \right) + \dots \\ &+ \frac{\partial P}{\partial p_{1n}} \left(\left(\frac{\partial p_{1n}}{\partial p_{2n}} \left(\frac{\partial p_{2n}}{\partial p_{3n}} \dots \left(\frac{\partial p_{m-1,1}}{\partial p_{m1}} \frac{\partial p_{m1}}{\partial p_{m1}^0} + \dots + \frac{\partial p_{m-1,n}}{\partial p_{mn}} \frac{\partial p_{mn}}{\partial p_{m1}^0} \right) \right) \right) \right). \end{aligned}$$

Hence,

$$\begin{aligned} \frac{\partial P}{\partial p_{m1}^0} &= (b_0 - a_0)(a_{11} - b_{11})(a_{21} - b_{21}) \\ &\times \left(\dots \left((a_{m-1,1} - b_{m-1,1}) \left((a_{m1} - b_{m1}) \frac{\partial f_{m1}}{\partial p_{m1}^0} + \dots + (a_{mn} - b_{mn}) \frac{\partial f_{mn}}{\partial p_{m1}^0} \right) \right) \right) + \dots \\ &+ (b_0 - a_0)(a_{1n} - b_{1n})(a_{2n} - b_{2n}) \\ &\times \left(\dots \left((a_{m-1,n} - b_{m-1,n}) \left((a_{m1} - b_{m1}) \frac{\partial f_{m1}}{\partial p_{m1}^0} + \dots + (a_{mn} - b_{mn}) \frac{\partial f_{mn}}{\partial p_{m1}^0} \right) \right) \right). \end{aligned}$$

That is, the derivative of integrates risk for external risks is proportionate to differences of conditional risks for unsuccessful and successful processes.

Thus, in important cases of development of production systems, change of integral risk during change of external risks is proportionate to the difference between conditional risks during successful and unsuccessful work of incoming processes.

Interpretation of this result depends on whether we can manage the external random factors. If these factors could be influenced, the difference between the risk of unsuccessful and successful work of the resulting processes during unsuccessful and successful course of incoming processes reflects the quality of the system of risk management. Due to this proportion, the larger the stated difference, the larger the effect of efforts for reducing the external risks. If we cannot influence these

factors, opposing their negative changes requires reduction of this difference. On the contrary, it is expedient to increase it when uncontrolled factors are positive.

2 Analysis of Combination of Random States of Production Processes, When Success of Supportive Processes Is Characterized by Absolute Probabilities

Let us view realization of random states of production processes realized during functioning of enterprise.

Let us note that proportion of the derivative of the risk of business's unsuccessful work for external unconditional risk to differences between conditional risks during successful and unsuccessful work of supportive processes comes from the analysis of random combinations of the state of production processes.

Let us view any production process that is not external.

Let us consider that each supportive process $i \in (1, \dots, m)$ is characterized by: random state $z_i, z_i \in \{0, 1\}$, where equality $z_i = 0$ means that the process i is realized successfully, and inequality 1 means that the process i is realized unsuccessfully; probability p_i of the fact that i -th process is realized unsuccessfully. Let us consider that any z_i and $z_j, i \neq j; i, j \in \{1, \dots, m\}$, are independent. Totality of variables (z_1, \dots, z_m) is a random vector $\xi, \xi \in \Xi$. Totality Ξ consists of values $\xi_1, \dots, \xi_n; \Xi = (\xi_1, \dots, \xi_n)$.

Let us view all possible values of the vector ξ . Each such vector is a combination of ones and zeros. In each vector $\xi_k, k \in N = (1, \dots, n)$, the first place is occupied by the components of the vector ξ_k under No. 1. Let us divide the whole totality of vectors ξ_k into the pairs so that each pair would have the following form: $(1, \sigma_j)$ and $(0, \sigma_j)$, where j —No. of the pair, and σ_j —vector of size of $m - 1$, which coincides with a certain vector ξ_k , but does not contain the first element.

Such pairs for $m = 4$ have the following form:

1st pair: (1,1,1,1) and (0,1,1,1);

2nd pair: (1,0,1,1) and (0,0,1,1);

3rd pair: (1,1,0,1) and (0,1,0,1);

4th pair: (1,0,1,1) and (0,0,1,1);

5th pair: (1,1,0,0) and (0,1,0,0);

6th pair: (1,0,1,0) and (0,0,1,0);

7th pair: (1,0,0,1) and (0,0,0,1);

8th pair: (1,0,0,0) and (0,0,0,0).

Each pair j contributes to probability of successful work of the production system P , which is equal to:

$$(1 - \alpha_j)(1 - p_1)A_j + (1 - \beta_j)p_1A_j,$$

where A_j —a certain expression containing all p_i , except for p_1 ; α_j and β_j could be equal to a or b , but always $\alpha_j \leq \beta_j$.

This conclusion is fair, as the combination $(1, \sigma_j)$ has one more qualitatively acting process than the combination $(0, \sigma_j)$.

Derivative $\frac{\partial P}{\partial p_1}$ leads to

$$\frac{\partial P}{\partial p_1} = (a - b)A,$$

where A —a certain expression with a non-negative value.

That is, the derivative of probability of successful work of the production system is proportionate to difference of probabilities of unsuccessful work of the final process during successful and unsuccessful work of supportive processes.

Therefore, we can compare the efficiency of the system of risk management for various configurations of risk structures, comparing the coefficients with $(b_0 - a_0)$.

3 Structural Risk

Based on analysis of random states of business processes, let us view the possibility of reduction of riskiness of achieving the company's goal.

For the criterion of evaluating the structure's risk, let us view the probability of unsatisfactory work of the whole system's processes. Let us use $p = (a_0, b_0, \dots, a_{i1}, b_{i1}, \dots, a_{mn}, b_{mn}, p_0^0, \dots, p_{mn}^0)$, $s = (s_{ij})$, $q_k(p, s)$ —probability of realization of the combination k .

This criterion of the task (risk) will have the following form:

$$R_0 = P_0(p, s) = \sum_{k \in N_0} q_k(p, s), \quad (1)$$

where N_0 —values of random factors at which the system of processes is unsatisfactory, $N_0 \in N$.

Let us view the issue of determining the risk of unsatisfactory work of a random system. The determination of such probability is interesting if the probability of satisfactory and unsatisfactory work of certain elements is equal. This probability should be called a "structural risk." In this case, we can evaluate the quality of the system's structure, not its separate elements. Application of various measures can change the integrated risk within the same structure of risks. However, these changes could be deemed the risks generated by a certain structure.

As,

$$\sum_{k \in N} q_k(p, \varphi) = 1,$$

the value of the initial structural risk equals

Table 1 Dependence of integrated risk on elementary risk for a company of timber processing sphere

Elementary risk	Integrated risk
0.50	0.75
0.4	0.57
0.3	0.36

Source: compiled by the author

$$R_0 = P_0(p, s) = \frac{\sum_{k \in N_0} q_k(p, s)}{\sum_{k \in N} q_k(p, s)} = \frac{n_0 0, 5^m}{n 0, 5^m} = \frac{n_0}{n},$$

where n_0 —number of elements in the multitude N_0 .

That is, in order to determine the risk of unsatisfactory work of a production system, the number of variants ξ that correspond to unsatisfactory work of the production system has to be divided by the total number of variants.

This simple approach could be used for evaluating the initial riskiness of the structure of a company’s risks.

Let us find the value of this risk for the graph given in Fig. 2, supposing that satisfactory work of the process, which contains several processes, requires successful work of only one incoming process. Calculations show that the risk constitutes more than 70%, which is a very high level. Therefore, it should be reduced.

A means of reduction of integrated risk could be reduction of each elementary risk. Let us evaluate the level of elementary risk that allows reducing the structural risk to the acceptable level. In particular, if we suppose that risks p_i are constant and equal to p , i.e., $p_i = p$, it is possible to determine dependence of the integrated risk R_0 on p . Such dependence is presented in Table 1.

As seen from the table, values of elementary risks should be below 40% for the integral risk to reduce to the values below 50% and lower.

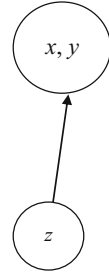
Reduction of integrated risks could be done by means of temporary transfer of resources to the processes in which risk factors are realized negatively. A drawback of such method of risk reduction is weakening of the positions of the processes from which resources are taken. That’s why this method should be used when frequency of realization of risky factors is low, as in the opposite case the existing resources might be not enough for opposing the realization of risk factors.

Let us view the recommendations for transfer of resources from some business processes to others. Let us denote the multitude of values ξ_k , which correspond to successful totality of supportive business processes, as U^1 , and the multitude of values ξ_k , which correspond to unsuccessful totality of supportive business processes, as U^0 .

Let us suppose that for each $\xi^0 \in U^0$ and each $\xi^1 \in U^1$, we know the cost $C(\xi^0, \xi^1)$ of transferring the state ξ^0 into the state ξ^1 . Then each $\xi^0 \in U^0$ could be characterized by two indicators: probability of realization $p(\xi^0)$ and minimal cost of transfer from the state ξ^0 $C^0 = \min_{\xi^1} C(\xi^0, \xi^1)$; accordingly, we can compare possible states

of the system of supportive business processes according to the values of these two indicators. This will allow preparing beforehand to the possible random unsuccessful situations.

Fig. 3 The simplest graph that reflects the interconnection of risks of supportive and main processes



Let us view another approach to selection of candidates for receipt of resources and their transfer.

Let us consider that the components of the vectors ξ_k are zeroes and ones. The component equals 1 if the corresponding process is successful and it equals 0 in the opposite case.

For each number, we determine the components of all possible vectors ξ^0 and ξ^1 number of times when the components with this number take the value 0. The numbers of the components of vectors ξ^0 that take zero values most often are the initial candidates for receipt of help, and the numbers of the components of vectors ξ^1 that take the values of 0 often are the candidates for transfer of resources.

Another means of reduction of the integrated risk is its structuring. The means of structuring is diversification, by conduct of parallel processes. For example, simple doubling of the system processes allows reducing the risk to the 50% level.

Let us view the simplest oriented graph that reflects only two interconnected processes, presented in Fig. 3.

Here: x —risk (probability) of unsuccessful functioning of the main process in case when supportive process is successful; y —risk of unsuccessful functioning of the main process if supportive process is unsuccessful; z —risk of unsuccessful functioning of supportive process.

Obviously, the risk of unsuccessful functioning of the main process—in case of unsuccessful supportive process—is higher than the risk unsuccessful functioning of the main process—in case of successful supportive process, i.e.,

$$x \leq y.$$

Risk R of unsuccessful work of business, organized according to this scheme, is calculated by the formula

$$1 - R = P = (1 - y)z + (1 - x)(1 - z).$$

Let us compare this scheme to the diversified scheme, presented in Fig. 4.

For such “non-diversified” scheme, the risk of unsuccessful work of business will be determined according to the proportion

Fig. 4 “Diversified graph” which corresponds to the simplest graph that reflects interconnection between risks of supportive and main processes

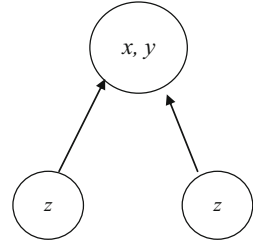
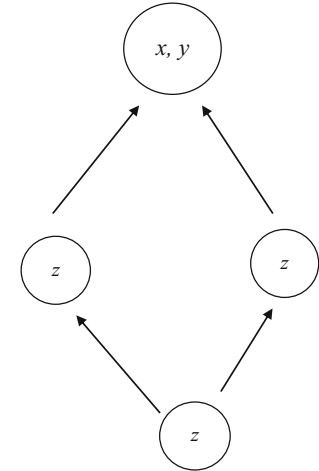


Fig. 5 The “loop” graph for comparing to the “diversified” graph



$$1 - R = P = (1 - y)z^2 + (1 - x)(1 - z^2).$$

The risk of unsuccessful work of business for the diversified scheme is the following:

$$(1 - y)z^2 + (1 - x)(1 - z^2) \geq (1 - y)z + (1 - x)(1 - z),$$

as this ratio is equivalent to the ratio

$$(y - x)(1 - z) \geq 0,$$

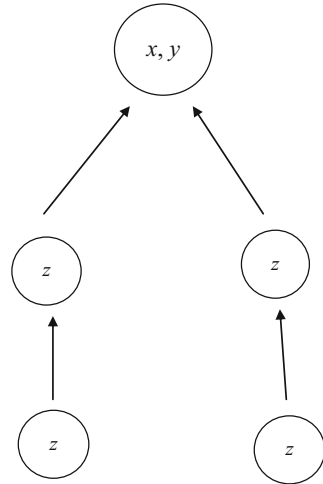
as

$$y \geq x.$$

That is, in a standard case, diversification stimulates reduction of the risk of the production system (or the system of works).

Let us view the graph that is a “loop” with a “source of problems” and one final process.

Fig. 6 “Diversified” graph for comparison with the “loop” graph



This graph is presented in Fig. 5.

To simplify things, let us suppose that probabilities of unsuccessful work of each supportive process are equal.

The risk of unsuccessful work of business is determined with the following ratio:

$$1 - R = P = (1 - z)(1 - z^2)(1 - x) + z[1 + (1 - z)z](1 - y).$$

Let us view another structure where the process “source of problems” is divided into two processes. All probabilities for supportive processes are considered to be equal.

Such structure is presented in Fig. 6.

This structure is characterized by the following ratio:

$$1 - R = P = \left\{ 1 - \left[1 - (1 - z)^2 \right]^2 \right\} (1 - x) + \left[1 - (1 - z)^2 \right]^2 (1 - y).$$

Let us compare the expressions before $(1 - x)$ and $(1 - y)$ for these structures. Let us suppose that the values taken by the expression before $(1 - x)$ for the second structure is equal or larger than the values of the expression before $(1 - x)$ for the first structure. Hence,

$$(1 - z)(1 - z^2) \leq 1 - \left[1 - (1 - z)^2 \right]^2.$$

Thus,

$$(1 - z^2)(1 + z) \leq (1 - z^2) \left[2 - (1 - z)^2 \right],$$

i.e.,

$$(1 + z) \leq [2 - (1 - z)^2]$$

Finally,

$$z \leq 1,$$

i.e., our supposition is correct, and the values of the expression before $(1 - x)$ for the first structure is equal or lower than the values of the expression before $(1 - x)$ for the second structure.

Let us compare the expressions before $(1 - y)$. Let us suppose that the values of the expression for the first structure are equal or larger than for the second. Therefore,

$$z[1 + (1 - z)z] \geq [1 - (1 - p)^2]^2.$$

Hence,

$$(1 - z)^3 \geq 0,$$

i.e., the supposition is correct.

This comparison allows concluding that with the values of x close to 0 and values of y close to 1, diversification is a more rational organization of the structure of risks. With the increase of x and decrease of y , the advantage of diversification is leveled.

Let us compare the values of probabilities for these structures with $x = y$.

For the first structure,

$$1 - R = P = (1 - z)(1 - z^2)(1 - x) + z[1 + (1 - z)z] = 1 - x.$$

For the second structure,

$$1 - R = P = \left\{ 1 - [1 - (1 - z)^2]^2 \right\} (1 - x) + [1 - (1 - z)^2]^2 (1 - x) = 1 - x.$$

That is, with approach of x to y , the diversified structure loses its advantage.

Let us view another example.

One supportive process is supported by two final processes. The characteristics of riskiness of final processes are equal.

The graph for such structure is presented in Fig. 7.

The risk of unsuccessful work of business (unsuccessful work of both final processes) corresponds to the ratios

Fig. 7 “Non-diversified” graph with two final processes

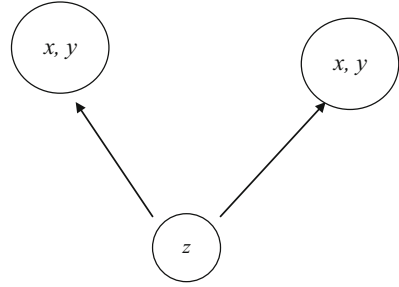
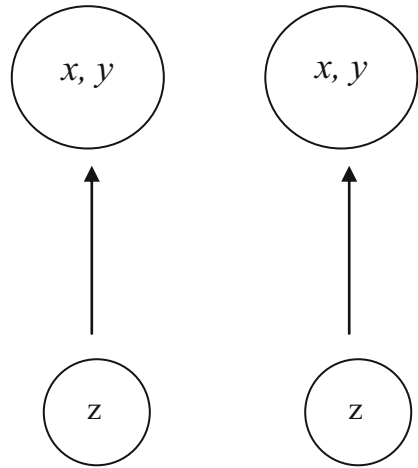


Fig. 8 “Diversified” graph with two final processes



$$1 - R = P = (1 - z)(1 - x^2) + z(1 - y^2).$$

If the processes are independent, the graph will have the following form (Fig. 8): For this structure,

$$1 - R = P = 1 - [zy + (1 - z)x]^2.$$

Let us suppose that the values of the first expression is equal or higher that the second. Therefore,

$$(1 - z)(1 - x^2) + z(1 - y^2) \geq 1 - [zy + (1 - z)x]^2$$

or after the transformations

$$z(z - 1)\{y - x\}^2 \geq 0.$$

The initial hypothesis is wrong, as the initial organization of business is more risky than the diversified one.

A different result is obtained if the successful work of business requires successful work of both final processes. For the graph presented in Fig. 6, we have the following:

$$1 - R = P = (1 - z)(1 - x)^2 + z(1 - y)^2.$$

For the graph presented in Fig. 7 we have the following:

$$1 - R = P = [(1 - z)(1 - x) + z(1 - y)]^2.$$

Therefore,

$$(1 - z)(1 - x)^2 + z(1 - y)^2 \geq [(1 - z)(1 - x) + z(1 - y)]^2,$$

as it is equivalent to the ratio

$$(y - x)^2 \geq 0,$$

i.e., in this case diversification is not expedient.

Thus, these examples show that in certain cases diversification for structural changes in the system is sometimes useful, sometimes—useless, and sometimes—harmful. That's why the well-known methods of actions in view of risks—e.g., diversification—should be used in view of the specific conditions in which the enterprise works.

It is possible to distinguish three groups of influence on the risk:

- independent influence on elementary risks.
- complex influence on the technological chains by redistribution of resources of the company between the elementary technological processes.
- Use of parallel processes.

Thus, the author views the evaluation of integrated risks.

Study of derivatives of integrated risk of business for risk of the processes characterized by only unconditional probabilities (external processes) showed that they are proportionate to differences ($a - b$) of risks of final processes that are characterized by unconditional probabilities, where conditions are successful or unsuccessful course of the processes that are incoming for the final processes (output of the system of risk management).

This result could be used for development of behavior in the conditions of risks. Thus, if the system of risk management can influence the incoming risks, the stated differences are characteristics of its efficiency. If these risks are outside of the influence zone of the system of risk management, the system, increasing the

difference, can raise the positive effect in case of reduction of such risks and fight the negative effect in case of risks' growth.

In case when the system of risk management influences external risks, it is possible to conclude that if $a \approx b$, the development of the system of risk management is senseless.

When is this possible?

This is possible in cases when a is very high and approaches b , or when b is very low and approaches a .

Probability a can be very high if:

- Efficiency of the company's work does not depend on the quality of the whole system of company management; this is possible when the company's equipment is very aged.
- Quality of the system of company management is low; the company does not have and does not want to have international certificates that reflect the presence of modern organization of labor at the company; even with reliable work of all system's elements, the system of company management cannot achieve high results even theoretically.

The probability b might be low if efficiency of the company's work does not depend on the quality of its management system. Such situation might arise when the company has new equipment, but the management system is very simple.

That is, there are a lot of cases when development of the system of risk management at company is senseless:

- When efficiency of the company's work does not depend on the quality of its management system, which is possible when equipment of the company is aged and when it is new, while the company's management system is very simple.
- When efficiency of the work of the company depends on the quality of its management system, but the company's management system is of low quality.

In view of the fact that aging of equipment at many Russian companies is very high, it is no wonder that they are not eager to implement the system of risk management.

When the system of risk management cannot influence the external processes, it is possible—under the conditions of favorable external processes—to try to reduce the risk to final processes (a) by means of increase of the risk to final processes in case of unfavorable conditions and (b) if external processes are unfavorable, it is expedient to reduce risks b by means of increase of risks a .

This chapter also vies the evaluation of integrated risks, the value of which is related to the structure of the system of elementary risks. A typical structure of a timber processing company is viewed as an example. A simple approach to evaluating the risk of unsuccessful work of an enterprise is offered, which is determined by the structure of the system of elementary risks. It is shown that for such structure the risk of unsuccessful work without application of additional measures (the initial structural risk) could be too high. The measures for reduction of integrated risks are offered: changing the elementary risks; transferring the

random states of the system of elementary processes, assessed negatively in the aspect of quality of the company's work, into the ones assessed positively by redistributing the company's resources between elementary technological processes; changing the structure of risks.

Changing of the structure of risk was viewed by the example of usage of diversification. It was shown that in some cases diversification is useful for structural changes in the system of risks, while in some cases it's useless, and in some cases—harmful. That's why the methods—e.g., diversification—should be used in view of specific conditions in which the enterprise works.

Acknowledgments The author is deeply acknowledged to Oleg V. Golosov (the honored worker of science of the RF, Doctor of economics, Professor, adviser with the rectorate of Financial University) and to Margarita V. Melnik (Doctor of economics, Professor of the Chair “Economic analysis” of Financial University, member of the Methodological Council with the Ministry of Finance of the RF, member of the International commission for reformation of financial accounting, member of the President council of the Institute of professional accountants, and member of the Moscow scientific house.

This chapter was prepared in the course of completion of Articles 12.3 and 12.5 of “Sustainable development of Russia in the conditions of global changes” of Financial University with the Government of the RF.

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Practice in the Application of the Production System Tools at the Enterprise During Mastering of New Products

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Abstract This chapter considers contemporary state, problems, and future development of the industrial enterprises. The authors analyze the opportunity to decrease product flow time, to decrease prime cost, and to improve quality at the same time with the help of more clear arrangement of the production processes and using the tools of production system. This chapter determines the prospects of implementation and development of the production system in the practice. The authors have studied applied aspects of development and implementation of the production system tools while mastering of new products at the enterprise that proves the usefulness of the conducted research.

1 Introduction

Rise in the efficiency of the production while mastering of new products, that satisfies customers fully, can be possible in modern economic with the help of expert process flow and development of business systems, that are represented with the assembly of elements—the subsystem with lower level that are connected by business processes, to be more exact the production system and product development system (Vumek and Jhons 2013).

The experience of the leading engineering companies proves that improvements of the production system and alteration in corporate philosophy achieve the needed economic effect only if using multipronged approach.

This chapter considers these problems in some aspects: systematization of adaptation practice in production systems by domestic enterprises and determination of production systems development via increasing workflow to master of new products in the framework of complex usage of the production system tools.

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2 Theoretical Justification

The research suggests using the term “production system” as the assembly of integrated resources and assembly of technological and other processes that provide efficient realization of production process to achieve final output (Ckhirtladze et al. 2015). Production system is based on the workflow of the mass production, standardization, and alignment of the units (Wader 2012). The authors and the founders of the production systems are Henry Ford and Taiichi Ono (Egorova et al. 2016); they determine classic principals: automation, balanced production, “dead in time,” but they notice that system is adaptable for internal and external environment of the particular production that has particular conditions and resource limit. Also, it has balanced system of the participants. So, the assessment of implementation systems at domestic engineering enterprises (GAZ group enterprises) reveals the combination of adapted production system elements of the production systems “Ford” and “Toyota.” For instance, activity in Toyota Production System started with work standardization, to be more exact to implement the complex of the measures to decrease cycle duration at all levels of the technological process (Nenad 2008). Among them there are: primary time-tracking of the operations “kizen” method implementation and assessments of the results. Some operations were excluded from the technological chain and time for production loop decreases. The text step was to organize conveyor operations in 2014 via land utilization for expedition warehouses. The details are delivered in the amount needed for 2 working hours. As the result, the problems of the stock item regarding the details of delivery to the work places and timing of the budget economy were solved.

In the period of 2014–2015 year, 53 benchmark areas were created in the company and working parties acted in order to optimize quality and working processes. As a result, the number of the conveyers decreased, number of the employees also decreased, but the number of output products that underwent quality inspection at the first attempt increased. These facts proof the world statistics: according to “Lean Enterprise Institute,” the results of discourse about production systems implementation are: reduction of fault details up to 90%; decrease of the production loop up to 90%; faster entry to the market from 50 to 75%; decrease of the material inventory up to 90%.

At the same time, the needed effect of the production system improvement while corporate ethic is changed cannot be achieved without technical re-equipping and without increasing efficiency of the technological flow in order to produce high-quality products. This fact is proved by the operational evaluation of the average annual rate in management efficiency at “GAZ group” (Ingemansson and Bolmsjö 2004):

1. *Smooth production (P_n)*—is provided by performing and managing duties, orderliness of production and work.

$P_n = \text{Product}_{\text{real}} / \text{Product}_{\text{plan}}$, where: $\text{Product}_{\text{plan}}$ —production plan in time periods (month, quarter, year); $\text{Product}_{\text{real}}$ —real number of produced goods in time period (month, quarter, year).

Low values of rhythmical coefficient in month (Table 1) influence on production work efficiency and it leads to equipment downtime and to share of standing costs increase in relation to prime cost of the goods (increase of deprivation costs and salary for produced costs).

2. *Coefficient of high quality production at the first attempt*

K_k —characterize the results of quality management from craftsmen and technologists. $K_k = T/K$, where: T —number of products, accepted by QS department at the first attempt; K —number of products that were introduced to QS department (Table 2).

Significant influence on the product quality: depreciation of production assets and tools, quality of material and work piece, unbalanced load of the workers and equipment, low quality of work.

3. *Coefficient of working time loss (Cwt)*—counted in order to determine ill-time of managerial functions at the work places. $Cwt = 1 - (Tl/Tr)$ where: Tl —loss in working time at the section because of managers, hour; Tr —real working time at the section (Table 3).

Judging by the facts above, we have come up to the conclusion that discipline and responsibility of the workers and managers must be increased.

4. *Coefficient of the bonus payments for managers ($K_{bp_{mn}}$)*—counted as contrasting real percentage of the bonus payments with target figures (according to regulations on bonuses). $K_{bp_{mn}} = Br/B_p$, where: Br —real bonus percentage in relation to salary; B_p —planned bonus percentage in relation to salary (Table 4).

Bonus calculation must take into account not only quantitative results of the sector but also quality of the production, levelness of the production, discipline, and promptness of the workers, who are responsible for the plan fulfillment and rhythm of the production (Table 5).

Values of the coefficients proof that production system is lack of efficiency (Table 6).

The analysis of the technological flows of the research subject shows: lack of synchrony and not rhythmical production processes, difficulties in re-trimming, not balanced load between technological flows at the sectors, working time loss.

Besides that, cost escalation for management doesn't guarantee the escalation of such showings as economy and prime cost decrease ($K_{32} < 1$) (Table 7).

To solve the tasks of the enterprise while mastering of new product we have formed the project, that are being implemented in 2014–2016 at the testing side—foundry engineering sector of OJSC “GAZ” (Table 8).

The goal of the project is—increase of the technological flow efficiency and increase of the quality level and work place standardization. The tools of the production system that were used: “5S” system, analysis of the VSM slow, production analysis, solutions of the problems using “one by one” system, standardized work, and equipment maintenance.

Particularly, replacement of the net element determined the effect $F = 620,000$ rub./year–231,000 rub./year = 389,000 rub./year (Table 9).

Table 1 Ratio counting of smooth production in 2015

Month/quarter	Production plan, item	Real production, items	Taken in	Pn
I	123,765	122,700	122,500	0.99
II	115,049	114,050	114,050	0.99
III	146,771	140,532	139,532	0.96
Total 1 quarter	385,588	377,282	376,082	0.98
IV	132,530	132,000	131,900	1
V	138,529	137,098	136,098	0.99
VI	114,529	113,231	113,131	0.99
Total 2 quarter	385,588	382,329	381,129	0.99
VII	115,049	114,010	113,010	0.99
VIII	123,765	120,141	110,141	0.97
IX	146,771	141,878	131,878	0.97
Total 3 quarter	385,588	376,029	355,029	0.97
X	99,765	978,88	97,688	0.98
XI	131,947	130,762	130,762	0.99
XII	153,876	152,322	152,322	0.99
Total 4 quarter	385,588	380,972	380,772	0.99
Total in a year	1,542,352	1,516,612	1493,012	0.99

Table 2 Coefficient of product quality at the first attempt in 2015

Quarter	Presented, items	Taken in, items	K κ
I	377,282	376,082	0.99
II	382,329	381,129	0.99
III	376,029	355,029	0.94
IV	380,972	380,772	0.99
Total in a year	1,516,612	1,493,012	0.98

Table 3 Count of time loss coefficient in 2015

Quarter	Time loss because of managers, Tl, hour	Real working time, Tf, hour	Absentee ratio of working time
I	23,984	250,700	0.91
II	20,311	254,324	0.92
III	20,128	253,218	0.92
IV	21,456	250,111	0.91
Total	85,879	1,008,353	0.92

The result of the activities in order to increase AFS when enchanting the pumping out “Minsk package” is introduced in Table 10.

Cost-benefit analysis of ferrosilicon dozing machine implementation is introduced in Table 11.

Collective impact of project implementation is introduced in Table 12.

Table 4 Quality attributes and bonus payments in 2015

No.	Profession	Bonus pay performance targets	Required bonuses
Planning group, production support group, and realization group			
1.	Loader	Fulfillment of treaty obligations about financial responsibility	30.0
Melting-pouring sector			
2.	Remelter	Non-exceedance level of the internal loss (relation between good and poured forms)	34.0
3.	Pourer		40.0
4.	Cupola melter		25.0
5.	Cinder man		27.0
6.	Charger		12.0
7.	Crane man		45.0
8.	Refractory man		Absence of quality remarks about performing works
Molding point			
9.	Moulder	Non-exceedance level of the internal loss (relation between good and poured forms)	35.0
Core room			
13.	Core man	Non-exceedance level of the internal loss (relation between good and poured forms)	18.0

Table 5 Coefficient of bonus payments for managers at the enterprises in 2015

Quarter	Planned %	Actual %	$K_{pr_{mm}}$
I	30	38	1.27
II	30	40	1.3
III	30	40	1.3
IV	30	38	1.27
Total in a year	30	41	1.36

Table 6 Consolidated data of the operational evaluation of the production management in 2015

Assessment ratio	Quarter number				IV to I (%)	IV to III (%)
	I	II	III	IV		
Pp	0.98	0.99	0.97	0.99	1	2.1
Kk	0.99	0.99	0.94	0.99	–	5.3
Kp	0.91	0.92	0.92	0.91	–	–1.1
Kpr	0.76	0.78	0.53	0.81	6.6	52.8
Kbp	1.27	1.3	1.3	1.29	1.6	–0.8

Table 7 Cost expediency counting for management in 2015

Indicator name	Percentage of the fulfilled plan
1. Production level, item	–1.7
2. Economy from prime cost reduction, mln. Rub.	–4.5
3. Managerial costs	5
<i>Temp correlation</i>	
– Production level and managerial costs	–0.34
– Economy from prime-cost and managerial reduction	–0.9

Table 8 Activities on the project

No.	Production entitlement	Result	Scheduled time
1.	Net component replacement	1. Weight loss of the construction from 600 to 150 kg—let us decrease equipment fatigue 2. Loose interlinking lifetime increase and exclusion of friction and blowing out (more than 6 years) 3. Cost cutting for repair materials and labor contribution for preparation	2014–2015 r
2.	Changing of the pumping out flows	1. Movement and storage operations reduction 2. Pumping outs are transferred by electronic telfer to painting without additional movements 3. Reduction of the labor impact when transporting	2014–2016
3.	Increase of the AFS when processing a pumping out that is called “Minsk package”	Processing modernization of the pumping out that is called “Minsk package.” Let us decrease casting time; casting pointing; canting time; detaching of the pointing position	2014–2015
4.	Implementation of the machine that dozes ferrosilicon at the casting production	Ferrosilicon dozing machine implementation at the casting sector №4	2014–2016

3 Conclusions

The task of new product mastering demands complex approach to the analysis and problem solution using the tools of the production group “GAZ” and well-coordinated work in order to enhance technological processes and instrumentation.

In spite of suggested activities in order to increase effectiveness of the production management that are effective from economic view, it is necessary to mark that calculations given below resemble only short-term effect. Calculation of the long-term effects must include forecasting elements and take into account social effect of the activities.

Table 9 Changing of the processing flows in cast production

Before	Implemented activity	After
Additional operations of moving and storage of the pumping out	Flow distribution according to the entitlement	Reduction of moving and storage operations
The necessity of the additional operations in order to transfer and paint pumping out with the loader engagement	Changing of the crater and box pumping up flows	Pumping outs are transferred by the electronic telfer without additional moving
Significant labor input when transporting the pumping gout of the cylinder barrels from the blast cabinet to enhancement	Installation of the conveyer belt	Decrease of the labor input when transporting

Table 10 The results of the activity in order to increase AFS when enchanting the pumping out “Minsk package”

Showings	Before	After	Result
Time to install the pumping out at the pointing position	15	9	-6
Pointing time, sec	70	22	-48
Canting time	10	0	-10
Detaching time for pointing position	10	9	1
AFS decrease		0.38%	

Table 11 Cost-benefit analysis of ferrosilicon dozing machine implementation

Material	Material consumption for, kg for 1 suitable t		Result, rub for 1 suitable t
	Before	After	
ΦC 45	57.35	11.54	-2385
ΦC 75	0	7.84	+721
Silicone carbide	0	22.67	+1044
Planned cost impact in March 2016		RUB 821,900	

Table 12 The result of project implementation

Showings	Before	After	Result
Tool-cutting time, $T_{mach.}$, sec	167	69	-98
Manual time and operator's transition, $T_{man.}$, sec	22	13	-9
Transition Number	3	2	-1
Number of the pumping outs in shift	142	329	+187

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Legal Conditions for Integration of Regional Companies in Foreign Economic Activities

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Abstract The modern realities of business community development are such that the integration of regional companies in foreign economic activities is impossible without adequate legal regulation of the relevant processes. Development of international private law relations requires a universal legislative framework that allows solving all aspects of any commercial contract in order to protect the rights and lawful interests of its participants. However, the analysis of the modern Russian civil legislation showed that, in addition to the contradictions, both internal and external, in the aspect ratio with the legislation of foreign states, it has some significant gaps. The lack of uniform and universal definitions and legal structures leads to uncertainty of use and the problems associated with the registration of rights and protection and is discussed in this chapter.

Development of foreign economic relations requires a universal legal framework that regulates in detail all aspects of any foreign transactions, to protect the rights and legitimate interests of its members. However, in our view, current Russian civil legislation has its contradictions, both within domestic legislation and with the laws of foreign countries, which creates a number of significant gaps. In particular, the lack of uniform and universal definitions of legal structures and objects results in their unclear application and problems associated with the registration of rights and their protection.

This study firstly pays attention to the legal structure of a linear object.

It is known that our country is one of the largest energy suppliers in the world. Such activities are impossible without developed infrastructure of various linear objects, which can transmit a variety of forms of energy and mineral resources, both natural and manufactured by Russian suppliers. The urgent need to consolidate the concept and the legal framework of linear objects has arisen in connection with

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significant changes in civil law, aimed at consolidating the principle of the unity of the land's future and the objective of immovable property located on it. The rejection of this principle occurred during the Soviet period, which is associated with a general rejection of private land ownership. The urgent need to reintroduce such a concept appeared again as a result of privatization. Suddenly, it turned out that a large number of buildings, structures, and other facilities are located on land that belonged to other owners. If the disputes between the owners of various properties were private, they would not concern public interest. However, disputes regarding objects, such as water pipes, gas pipelines, and power lines constructed on private land, may lead to disruption of their normal use and service. Disjointed industry regulations of the *mode* of linear objects, in turn, gave rise to an even greater number of contradictions and disputes.

The problem of an underdeveloped legal framework for such objects is becoming increasingly important, both in their making, registration, and operation on the territory of the Russian Federation and neighboring countries, both consumers and facilitators of Russian energy.

The current geo-political situation is spurring the need to address these gaps to form the universal legal framework that is consistent with international and national legislation of the Russian partners.

There is no single concept of "linear object" in the current legislation. Definition of the linear object is found in a number of regulations, both federal and regional levels and secondary legislative acts. Essentially, the legal problem is, firstly, the lack of a common definition of linear object in the Civil Code and its characterization as independent property. Secondly, there is a lack of a federal legislative act that comprehensively defines all aspects of the establishment and operation of linear objects. The act specifies the types of linear objects in different variations, without formulating clear and legally correct definition, naming both types and characteristics of such linear objects. Definition and characterization of linear objects can be found in the Urban Planning, Land and Forest Code. The Civil Code refers to linear objects within a single legal framework of immovable complexes; linear objects are also mentioned in the Federal Law "On Communications," "On transfer of land or land plots from one category to another," as well as in a number of secondary legislative acts. Each of these laws provides its own definition of a linear object. The lack of a single and unified definition of "linear object" should be recognized as a weakness of current legislation that results in a range of legal and technological problems.

The concept of a linear object in a variety of legal acts will be further evaluated.

The Urban Planning Code of the Russian Federation gives the notion of "red lines," equivalent to the concept of a linear object. They indicate existing, planned (changed, newly formed) borders of common areas, borders of the lands with transmission and communication lines (including the line-cable structures), pipelines, roads, railway lines, and other similar facilities.

In its turn, the Civil Code of the Russian Federation defines a linear object as a variety of the following facilities: railways, power lines, pipelines, etc., as part of immovable property.

Linear objects are power and communication lines, roads, pipelines, and other linear facilities, as well as constructions that are integral technological parts of such objects. This definition comes from the Forest Code of the Russian Federation.

The Federal Law No. 172-FZ dated December 21, 2004 “On transfer of land or land plots from one category to another” defines linear objects as roads; power and communication lines; oil, gas, and other pipelines; railway lines; and other similar constructions.

As linear objects are used in different industries, each definition contains specific characteristics. For example, the Federal Law No. 126-FZ dated July 7, 2003 “On Communications” determines linear cable communications facilities as objects of engineering infrastructure created or adapted to accommodate communication cables and communication lines: transmission lines, physical circuits, and linear-cable communication structures.

A legal definition of “linear objects” is also found in secondary legislative acts. One example is the Russian Federation Government Resolution No. 87 dated February 16, 2008 “On sections of project documentation and requirements to their content,” in which a linear object acts as a type of capital construction objects (pipelines, roads, railways, power lines, etc.).

Another document that describes characteristics of linear object is the Russian Federation Government Resolution No. 68 dated February 11, 2005 which validates “Regulations on the particular properties of state registration of ownership and other real rights on the line-cable communication structures.” Regulation determines that the “linear-cable constructions of communication are a set of heterogeneous immovable things that technologically form a single unit, which are connected by movable property by physical circuits (cable) with the following features, simultaneously:

- Functional and technological interconnectivity
- Designed to use with an overall intended purpose to accommodate cable ties
- Length”

As can be seen from the definitions above, linear objects are industry-specific; they differ both in terms of content and terminology. Moreover, some of them are reduced to simple enumeration of such objects. However, the main features and concepts of linear objects can be summarized.

Firstly, as linear object extends longitudinally, its length is much greater than its width; its main feature is the actual length, which can be very significant. It is this feature that allows the isolation of linear objects from other objects and leads to the problem of forming a special legal framework, as it passes through many lands owned by different owners and right holders. The procedure of establishing and using the servitude (both private and public), which is the most convenient and common form of using someone else’s land, requires detailed regulations and legal consolidation.

Secondly, linear object is a construction. In accordance with the Federal Law “Technical regulation on safety of buildings and structures,” a building is a result of the construction, which is a three-dimensional, planar, or linear construction system

having a terrestrial, aerial, and (or) underground part, consisting of carriers, in some cases enclosing constructions for production processes of various types, storage products, temporary stay for people, and movement of people and goods.

Thirdly, a number of regulations define linear objects as immovable property. This is due to the fact that the line features meet the immovable property criteria given in article 130 of the Civil Code. Firstly, it is assigned to the category of constructions, as mentioned above; secondly, its connection with the land; thirdly, impossibility to move without disproportionate damage to the destination. However, the third criterion is debatable—for example, A.S. Laletina (2011) argues that pipelines cannot be attributed to the construction category, since they can be dismantled that allows to move them freely.

Fourthly, linear object is a complex of indivisible things.

Perhaps, the solution to the lack of a unified concept of the linear object would be the introduction of a real estate category “Single Immovable Complex” (hereinafter SIC).

SIC is understood as united by a common purpose set of buildings, constructions, and other things, that are inextricably linked physically or technologically, including linear objects (railways, power lines, and pipelines) or located on the same plot of land (if the ownership rights for all objects as a whole immovable property is registered in the Unified State Register of Real Estate Rights).

However, this definition gives grounds to assume that the SIC is a broader concept, which includes linear features and some of its types. However by including earlier discussed objects into united immovable complexes only solves the problem of categorizing them as real estate objects, but does not give a universal definition that legal practice is lacking.

In addition to introducing a single definition of a linear object, a general classification of objects is also required, which will receive further detailed regulation in the industry legislation.

The most interesting and detailed classification of linear objects comes from R.A. Zaynullin (2012). “Hence, based on the analysis of the current legislation further classification of linear object in connection with the land can be formulated:

- Above the ground (air)
- Ground (surface)
- Underground”

Depending on the purpose, LO (linear objects) are divided into:

- Transport facilities (railways, roads, tram lines, trolley-bus lines)
- Electric Networks
- Sewage Collectors
- Communication Links
- Culverts and Aqueducts
- Pipelines
- Gas pipelines
- Oil pipelines

- Water pipes
- Sewers

Restrictions on the rights of land owners where LO are constructed are:

- Not affecting land usage (communication lines, all kinds of underground pipelines, etc.)
- Partially restricting the land usage (transmission lines, gas and product pipelines)
- Eliminating the possibility of using the land as a whole or a specific part of it (railways, roads, tramways, trolley lines)

Of course, taking into account the specifics of each linear object type, a detailed legal regulation should be implemented within a separate legislative act, as it is happening today. However, the definition of a linear object as an independent object of immovable property as well as their classification according to different criteria would resolve a lot of both theoretical and practical problems.

This study also pays special attention to the question of the legal regulation of international commercial contracts.

International commercial agreement (contract) is a type of transaction that is associated with the legislation of several states, i.e., complicated by a foreign element. Parties of the agreement have different nationalities and (or) businesses in different countries. Therefore, the main principle applied for international agreements (contracts) is the principle of party's autonomy. It means that the parties have the right to formulate the terms and content of the contract, as well as choose legislation applicable to it. Zhiltsov (2014) notes that practice of the International Commercial Arbitration Court at the Chamber of Commerce of the Russian Federation (hereinafter—ICAC) demonstrates that that in most cases (70% of the total number of cases) parties prefer to reach an agreement on the applicable law, avoiding the need for its subsequent establishment by conflict rules. It should be noted that the choice of applicable law could be made not only at the time of signing a contract but also subsequently after the agreement is made. ICAC received a claim from the Company located in Italy to the Company with limited liability located on the territory of the Russian Federation. The plaintiff initially argued the need to apply Italian laws to the dispute as it is the home country of the seller. It was later noted that the plaintiff does not know appropriate laws of Italian legislation and the specific rules that can be applied to the dispute. As a result, the case was resolved using the law applicable to the parties under the contract; the Tribunal found that on the basis of art. 28 of the ICAC, p. 1, § 26 of the Rules of the Tribunal, Article 7 of the Civil Code, subparagraph “a” p. 1, art. 1 and p. 2 of Article 7 of the Vienna Convention to the relations of the parties arising in connection with the implementation of the contract, that is a subject to the application of provisions of the Vienna Convention and in particular the legislation of the Russian Federation not regulated or not fully regulated by the Convention.

The choice of the applicable law cannot be associated with all the terms of the contract but only for certain parts of the contract. In particular, parties may arrange

that the liability for the improper performance of obligations shall be governed by the laws of one state, on the territory of which the business of the international agreement (contract) is located and the conflict that rules the country of court will apply to other legal relations, which will consider the dispute. The parties do not always include in the contract the application of national legislation of the parties. It is worth paying attention to the fact that Part 1, Article 28 of the Law on International Commercial Arbitration envisages the possibility of legal disputes to be resolved by using such legislative acts chosen by parties to be applied to the case. It is common to include in the international agreement (contract) conditions on the application of the Principles of International Commercial Contracts (UNIDROIT Principles) as current international trade practices. In support of this, an example of judicial practice can be given. The ICAC received a claim to the Open Joint Stock Company located on the territory of the Republic of Uzbekistan from the Company located on the territory of Cyprus. The materials of the case indicated that the parties have agreed on the application of the Principles of International Commercial Contracts UNIDROIT with the addition of Russian Federation legislation if necessary. On this basis, the arbitrators concluded that the main regulator of the relationship of the parties under the contract are the UNIDROIT Principles, Vienna Convention of 1980 in addition, which Russia is a part of, and on the issues unresolved by the UNIDROIT Principles and the Vienna Convention the Russian legislation, in particular the Civil Code.

If the parties of the contract have not taken an advantage to choose an applicable law, the court is obliged to make a choice on the basis of national conflict of law rules and norms of international agreements. It should be noted that if an international contract contains the substantive rules governing legal disputes, then the application of the conflict rules is excluded. In particular, the main legal regulation for international treaties is the UN Vienna Convention on Contracts for the International Sale of 1980. Art. 1 of the Convention states that its provisions apply to sale contracts between parties whose places of business are in different States: (a) if the States are Contracting States or (b) if the rules of private international law are applicable to the laws of a Contracting State. In this case, national courts are obliged to apply the conflict rules of the state. However, not all national legal systems adhere to this principle. The situation is different in the legal practice of international commercial arbitration; they are governed by the conflict rules that they consider to be applicable. This provision is enshrined in the European Convention on International Commercial Arbitration 1961, UNCITRAL Model Law on International Commercial Arbitration 1985, and is reflected in many laws and regulations of the various states. Thus, it is stated in Part 2, Article 28 of the Law on International Commercial Arbitration that in the absence of any indication from the parties, the arbitral tribunal shall apply the law determined by the conflict of law which it considers to be applicable, and, in fact, it is guided by the conflict of law rules of the Russian legislation. However, the conditions of the contract and trade usages applicable to this transaction should be taken into account (Part 3, Article 28). For example, *Vilkova (2004)* notes that the International Court of Arbitration of the International Chamber of Commerce has repeatedly refused to search for the

applicable law on the basis of any conflict of law rules by applying generally accepted principles of international trade law. This can be illustrated by an example from judicial practice. For the resolution of a dispute between the buyer from Kazakhstan and the seller from Ukraine, the Tribunal concluded that because the parties are registered as legal entities and operate in the CIS, the conflict of law rule Part “e” Article 11 of Kyiv Agreement should be applied, according to which the rights and obligations of the parties are defined under the law of the place where the contract was signed. Since the contract was signed in Ukraine, ICAC concluded the application of the legislation of Ukraine.

As for the conflict of law rules, which contain the rules for determining the applicable law in the absence of agreement between the parties of the applicable law of the contract, they are contained in a number of international agreements, such as the Rome Convention on the law applicable to contractual obligations 1980 (The Russian Federation is not involved) and in international agreements within the Commonwealth of Independent States. In the European Union, in case of an international commercial contract dispute, the European Parliament and Council Regulation dated June 17, 2008 No. 593/2008 “On the law applicable to contractual obligations (“Rome I”)” is the subject to the application, which is intended to replace the Roman Convention on the law applicable to contractual obligations 1980.

It is known that one of the elements of the conflict rule is binding, meaning indication of the law to be applied, and the formula of attachment can be linked to the personal law of the parties, the law of the place where transaction was completed, the law of the court (arbitration), dispute resolution, etc. In the legislation of many foreign countries as well as in international conventions, as a rule, such bindings are related to the place where the contract is signed. The laws of some states, such as Turkey and Peru, in addition to the specified binding, which serves as the basis for contractual obligations, have a number of additional bindings (to the law governing the obligation in place of the contract and to the site of the decisive performance of the contract or closely connected contracts). Strigunova (2014) notes that other connecting factors can be used, such as: the law of the host country of the offer; the law of the party that unilaterally develops the conditions for the merger agreement, etc.

To determine the applicable law, the formulation “closest connection” is also used. Thus, to determine the law applicable to the contract, in the absence of the agreement between the parties, the Regulation “Rome I” provides a number of bindings for certain types of contractual obligations: sale contract governed by the law of the country of residence of the seller; service contract governed by the law of the country of residence of the service provider, etc. If the law applicable to the contract cannot be determined taking into account the bindings, the contract governed by the law of the country of residence of the party responsible for its implementation which is crucial for the maintenance contract should be used (Part 2, Article 4). If it is clear from the circumstances of the case that the contract is more closely connected with another country rather than that indicated in Part 1 or 2 Article 4, then the law of that other country should be applied (Part 3, Article 4).

Similar rules are enshrined in domestic legislation. In the Civil Code of the Russian Federation, the law of “close connection” was disclosed broader using special connecting factors for certain types of contracts (Parts 2–8, Article 1211 of the Civil Code). These bindings can determine the law applicable to sale contracts, the law of the state that is the place of residence or business of the seller (Seller law); to lease contract—the law of the lessor; to the contract of transportation—the law of transporter; to the agreement of transport expedition—the law of the expeditor; to the financial agreements under a concession of the monetary requirement—the law of the financial agent; to the agency contract—the law of the agent, etc. In accordance with Part 9 Article 1211 of the Civil Code, if conditions or the substance of the contract or set of circumstances of the case clearly imply that the contract is more closely connected with the law of a country different than indicated in Parts 1–8 Article 1211 of the Civil Code, the law of the country that the contract is closer connected to should be applied. A contract that contains elements of various agreements, the law of the country, with which the contract is related to as a whole, should be applied, unless the law is to be applied for some parts of the contract only (Part 10, Article 1211 of the Civil Code).

With globalization of international economic relations, as well as the ongoing integration of processes, precedents (decisions of international commercial arbitration) pay an important role in establishing unified international trade rules. The custom in the modern reality is transformed into a normative phenomenon. Therefore, in our opinion, the definition of a legal norm may well extend to legal customs as accepted in the theory of law. For example, the definition from the “Questions of Theory and Law” (Ioffe and Shargorodskii 1961): “The legal norm is the compulsory norm of behavior... of people acting as participants its repeated public relations controlled by law.”

Theoretical and legal attributes of a legal norm are manifested in the form of three elements—hypothesis, dispositions, and sanctions. Let us consider the logical structure of the custom as a legal norm using the example of “Incoterms.” “Incoterms” 2010 contains 11 terms that are used in transactions of international sale contracts. “Incoterms” 2000 contained 13 terms. This created two new definitions (DAP—delivered at place, DAT—delivered at terminal), which can be used as multimodal. Four terms that were least used in practice got cancelled (DAF, DES, DEQ, and DDU).

All terms are divided into four categories: E, F, C, and D. Each term refers to a specific condition (on the basis of) the supply of goods and the legal practice of international trade, referring to the substantive law. Each custom is designated by the term and has a complicated legal structure, which combines both the procedural rules (e.g., the obligation of the seller to give the buyer an invoice, inform the buyer about the loading of goods) and material (e.g., seller’s obligation to provide the goods and deliver the goods or the carrier) that come from sale, transportation, and insurance contracts (for certain terms—CIF, CIP) and Customs Law (related to the customs formalities, payment of customs duties, taxes, and other charges). In other

words, conditions for actions (hypothesis) of all customs combined in “Incoterms” are: signing a sale-purchase contract, transportation contract, and contract (if necessary) to fulfill the rules of customs law.

Disposition in the “Incoterms” sets the time of the transition of risk of loss or damage to the goods from the seller to the buyer which occurs when the seller has fulfilled his obligation to deliver. The moment of risk transfer is not the same for all terms—for example, in contracts concluded on the terms FOB and CFR, such moment is the passage of goods across the ship’s rail in the named port of shipment, and in the agreements on the CIP and CPT—transferring the goods from the seller to the carrier.

As long as the seller does not fulfill his obligations for delivery, he is legally liable in cases of loss or damage, regardless of whether the loss or damage caused by himself or others. Thus, in accordance with the terms of FOB, when the goods pass the ship’s rail at the named port of shipment, it means the fulfillment of delivery obligations by the seller, but up to this point the seller takes all the risks. Therefore, the loss or damage to the goods until the above-mentioned moment does not exempt the seller from the obligation to deliver the goods to the buyer. In the context of intermodal transport (mixed use of sea, river, land, and air transport), losses may be a result of actions or lack of actions of many people; therefore “Incoterms” comes into action if the responsible for causing damage party should be identified. For this reason, “Incoterms” puts the responsibility of loss or damage of goods for one person:

- Seller—as long as he does not fulfill his obligations of delivery
- Buyer—if the seller fulfilled his obligations

Of course, the seller and the buyer have some protection in cases of loss or damage to the goods, complaint to the carrier, or an appeal to the insurer (if the risks are insured). But the solution to these issues is beyond the scope of “Incoterms,” that aims to prevent possible conflicts between the seller and the buyer in the situation of loss or damage of the goods during their transportation, the right to transfer the risk to the buyer is established, listing the obligations of the seller and the buyer on delivery.

Thus, in contracts that are based on FOB conditions, the seller must:

- Provide the buyer with the goods and the invoice
- Obtain an export license at his own expense and fulfill all customs formalities related to the export of goods (because the seller is more familiar with the licensing practices in the country of export than the buyer)
- Load goods on board the vessel nominated by the buyer at the agreed date or within the agreed period at the named port of shipment
- Inform the buyer that goods have been loaded
- Provide the buyer with the proof of delivery and usual transport documents at his own expense

- Pay the costs of the checking operations (quality control, measuring, weighing) which are necessary for its delivery. Pay the cost of the package (if necessary), which should be appropriately labeled

At the request of the buyer, the seller should provide assistance in obtaining the documents required for the import of goods at his expense and risk; the buyer will provide the information needed for insurance.

In his turn, the buyer must:

- Pay the price of the goods as agreed in the contract
- Obtain any import licenses and fulfill all customs formalities connected with the import of goods, at his own expense
- Sign a contract of carriage from the named port of shipment at his own expense
- Receive the delivery after the seller shipped the goods on board the vessel. (This means that the buyer's dissatisfaction with the quality of goods (for example) does not give him the right to refuse to accept the goods. Any legal claims against the seller can only be made after receiving the goods. The issues of seller's non-compliance to the quality or quantity and the weight of the goods do not apply to "Incoterms")
- Give the seller sufficient notice of the vessel name, loading point, and required delivery time
- Take transportation documents from the seller.

The norms on the seller and the buyer's responsibility in the supply process create the conditions to trigger the disposition of custom (hypothesis), designated as FOB, according to which the seller has to bear the risks of loss of or damage to the goods until the goods pass the ship's rail at the named port of shipment.

In accordance with the terms of FOB, the seller would bear all risks of loss or damage to the goods until the goods pass the ship's rail at the named port until the delivery obligations are fulfilled. But the transfer of the risks from the seller to buyer is possible:

- If the buyer does not receive the goods in accordance with the agreement
- If the buyer does not give guidance on the ship's name, place, and time of shipment
- If the assigned vessel failed to arrive to load the goods on time

However, a condition of early transfer of risk is the identification of the goods, i.e., establishing goods as the subject of the contract by marking them, providing shipping documents, and giving notice to the buyer. These functions are the responsibility of the seller, underlining the importance of the rules contained in the disposition FOB again, in which the risks are transferred when the seller fulfilled his obligations.

Thus, "Incoterms" acts as a threshold of legal responsibility between the seller and the buyer, listing mutual delivery responsibilities, in the interest of the stability of trade in dispositions customs. "Incoterms" does not regulate the consequences of non-fulfillment of these responsibilities (penalties). However, it is clear that

“Incoterms” has a rather complex and not entirely clear logical structure, even taking into account the fact that they are processed by the International Chamber of Commerce. To a certain extent, this disadvantage makes it difficult for trading parties to resort to “Incoterms”.

The views on the role of the custom in the law change at the time of breaking the old economic structure of society and at time of changes in property relations. The programs of transition from centralized to decentralized management and from a planned economy to a market economy—avoiding direct intervention in the economy in civil law—are expressed in the reduction of public-law elements and imperative ways of influence on property relations. Accordingly, the role of discretionary control methods (not coming directly from the public authorities) is rising. In general, interests in such institutions as self-defense, non-state regulatory measures, customs and usages in civil law, and alternative dispute resolution in civil procedure are a characteristic of the liberal ideology.

The tendency of increasing the role of customary law in international trade is clear in the light of the development of a new draft of the UNIDROIT Principles, concerning not only international business contracts but also long-term contracts.

This project has been developing for years now. The proposed amendments were considered several times in the sessions of the UNIDROIT, the final of which was held in Hamburg, October 26–29, 2015. As a result, the final draft of amendments has been prepared, and it will be submitted for final approval in May 2016.

High authority of the drafters of the principles, their simplicity, clarity, and supranational nature, as well as other reasons, explain the success and widespread popularity of their use.

“Trends and prospects of development of *lex mercatoria* in private international law” (Simatova 2015) show that the last version of the Principles 2010 is in fact the general part of contract law, regulating the most important questions, such as: contracts, representatives rights; validity and interpretation of the content and conditions of contracts; performance and non-performance of contracts; change of parties in the commitments.

However, long-term contracts, as a kind of international commercial contracts, remain completely unaccounted. There is no definition of such contracts or any criteria to separate them from other long-term contracts in the current version of the Principles. A number of elements require further detailed explanation, taking into account the specificity of such contracts, in particular the provisions from Article 2.1.15 concerning liability for negotiations in bad faith.

The draft of changes and amendments is aimed at eliminating these gaps. Analysis of the latest version of this document as of January 2016 and the explanatory notes thereto leads to the following conclusions about its contents.

The above problems of terminological uncertainty are proposed to be solved by means of establishing appropriate criteria—however, there is some difficulty in separating long-term contracts due to the ambiguity of the notorious criteria. It is a question of the difference between long-term contracts and contracts characterized as “one shot deal.” In this case, the duration of the contract is the main criteria to be

used, although it is necessary to aggregate it with other criteria, among which are associative or relational subjects of legal regulation.

Particular attention is paid to the long-term contracts with terms deliberately left open, meaning certain conditions are intentionally mismatched to be discussed in further negotiations or to be established by a third party. This experience will be particularly interesting for domestic law enforcers, in the light of the extreme changes in the civil legislation of the Russian Federation concerning the regulation of obligation relations that occurred on June 1, 2015. By that we mean the inclusion of the norms of Article 429.1 in the text of Part 1 of the Civil Code, devoted to the so-called Regulation framework agreements or contracts with open conditions.

Thus, such provisions already exist in the current edition of the Principles, namely the content of Article 2.1.14 where contracts containing open conditions are recognized. However, taking into account the specifics of long-term contracts, there is a need to clarify the procedure and principles of third party participation in the formation of conditions of contracts, as well as the prospects of contesting such participation in court.

A possible solution for the above-mentioned problem of negotiations in bad faith in the aspect of long-term contracts is found in the proposals that affect the content of Article 2.1.15. It is recommended to include the obligation to negotiate in good faith, including listing specific (rather than abstract) obligations of the parties, in order for the provisions of this chapter to take into account the specifics of long-term contracts, in particular:

- Introducing (including repeated) negotiations in a constructive manner, which implies the rejection of any form of countering the other party of the contract
- Including experts in the negotiation process to give advice on problematic issues to reach agreement
- Willingness to compromise, adequate and flexible response to the proposals of the other party.

Such proposals for inclusion in the text of the contract clearly define obligations of the parties relating to the negotiation in good faith and have a facilitation purpose in the case of a dispute as such provisions may provide quality guidelines for referees in the case of a trial.

The proposal to create specialized permanent structures in the case for particularly complex and problematic long-term contracts deserves special interest. The main purpose of these structures is to agree amendments and additions to the text of the contract, including the cases of violation of the parties' obligations or the occurrence of force majeure. An example of such a structure is a "contract management committee."

In the event of force majeure, amendments and additions can be introduced to the long-term contracts.

In the current edition of the Principles, the possibility of the contracting parties to contact the partner to request a review of their obligations in the event of difficulties is stated in Article 6.2.3. In case of force majeure, the affected party

may also put forward a similar request, referring to the occurrence of such events that led to the non-fulfillment or improper fulfillment of obligations.

Taking into account that the very nature of long-term contracts does not suggest any interest in ending the business relationship, the new draft project proposes to include to following. If force majeure is permanent and stable, the fulfillment of the obligations by the parties, affected by such circumstances, should be suspended for a specified or unspecified (for a “reasonable time”) period. Contractor, in turn, may terminate the contract only after an appropriate period after the receipt of the notification of the occurrence of force majeure entailing the impossibility of proper fulfillment of obligations under the contract. It is advisory to include in both parties obligations (or only affected) to make every effort to eliminate the corresponding event or its consequences.

If, despite all efforts of the parties, and after a set (or reasonable) period, the obstacle is not removed, the parties may start negotiations on the revision of the relevant provisions of the contract in good faith. It is possible to use special conciliation procedures, including mediation conducted by a qualified third party. Considering the above proposal for the creation of specialized structures in particularly problematic contracts, the so-called conciliation and expert council (“dispute review board”) can be an alternative to mediation. Which is understood as a permanent advisory body consisting of up to three persons with a qualified knowledge in the relevant subject area.

And only when the measures listed above will not result in an agreed outcome for a certain period of time, a contract may be prematurely terminated.

Yet another noteworthy point is reflected in the analyzed draft amendments, which is the regulation of relations between the parties after signing the contract. The termination of the contract does not affect any of its provisions of disputes or any other conditions that are expected to take action even after termination according to Article 7.3.5 of the current edition of Principles.

This edition states that there are often unresolved issues between the parties that must be resolved. Among those is the question of the future of unsold goods after the termination of distribution contracts. There may also be additional obligations which have arisen before the termination of the contract and continuing on for a specific time period. What is meant by such obligations in this context?

Firstly, the prohibition for a party to disclose confidential information received from another party can be stated in the contract.

Secondly, the parties may agree to refrain from any form of competition in the future for a certain period of time after termination.

And, thirdly, it can be about the warranty of the contractor on the building contract for the construction project as a whole or its parts, for a longer period than foreseen by the domestic law of the country of applicable law.

It should be noted that some pre-contractual liabilities could be considered as implied terms, i.e., derived from the nature or type of contract. It is recommended to clarify in the text of the treaty obligations (for one or both sides), their exact content and sanctions in case of violation.

Thus, the proposed changes and additions, which apparently, will soon have official status of the new edition of the Principles, largely expand their scope with respect to a specific and fairly common international trade agreements as a form of long-term contracts.

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Sustainable Economic Growth of Integrated Agricultural Formations: Information and Analytical Support

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Abstract One of the most important directions of the agricultural production sustainable to economic growth is developing the agro-industrial integration, which is an economic, information, and organization-technological union of agricultural enterprises which possess processing, transport, and other supporting subjects. The complex multi-level management system, diversified activities, and a broad range of markets and integrated agricultural formations members' isolation demand enhancing the abilities of accounting and reporting and forming relevant and detailed information on the agricultural holdings' isolated components (segments). Thus, it is necessary to develop theoretical, methodological, and practical theses for the integrated agricultural formations' segmental record. The following results are achieved in the framework of the research: integrated agricultural formations' activity advantages are defined; agricultural holdings' methodology of modeling and internal standardization segmental record and reporting system is developed; the methodology of preparing record-analytical information on agricultural holding's profitability of interacting with external buyers is elaborated and grounded; the methodology relevance is comprised in ranking the buyers by means of the ABC-analysis according to segments: A—highly profitable buyers, B—problem buyers, C—low profitable buyers (according to the calculated intervals).

Creation of integrated agricultural formations, organization, and technologically integrating production, and processing and marketing of agricultural products, allows to link organizational and economic, scientific, and technical activities and extends the financial and informational base necessary for sustainable economic development of agricultural holdings by increasing the efficiency of production and increasing the sales markets' share.

In the Russian Federation, the definition “sustainable development” is presented in the “Russian Federation’s transition to sustainable development concept” (1996),

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_15

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where sustainable development implies “stable socio-economic development without damaging its natural basis.”

Integrated agricultural formations compared with small businesses have a number of advantages:

- Unification of financial, industrial, and labor capital occurs when forming an integrated agro-structure, which provides favorable conditions for attracting additional investment and resources.
- Minimizing the negative impact of competition for the union members in comparison to isolated producers, because the union members never compete with each other on the same market.
- The ability to lead coordinated financial, investment, and credit policy.
- Use of advanced technologies and the development of innovations in agricultural production.

However, despite the significant advantages of integration process, there are difficulties which business owners and integrated agricultural formations managers face. A complex management structure, territorial isolation of enterprises comprising agricultural formations, and a variety of activities and markets require the development of information facilities for accounting, reporting, and meeting the information needs of an agro-structure’s key stakeholders, as well as forming relevant and detailed information on the agricultural holdings separate components’ (segments) activities in order for the integrated agro-structures to develop economically sustainable. The quality of record and analytical information by its segments depends on an organization system adequate to modern requirements and segmental record methods, their internal regulation, which allows determining the influence of each separate component on an integrated agricultural formation’s activity result in general, to identify business units’ profitability growth perspectives, to assess the top managers’ work quality, to make rational management decisions on redistributing the resources between the agro-structure’s activity segments. In this regard, there is an objective necessity to develop methodology of modeling and internal standardization of the segmental record and reporting system in agricultural holdings (International Financial Reporting Standard 2011).

While studying the production, organization, and economic features of the integrated agricultural formations, we have defined the criteria and levels of segments as objects of accounting supervision in order to form the agricultural holdings’ internal and external segmental accountancy: types of activity; responsibility centers; types of products: sales markets and production categories by their target economic purpose; geographical areas: sales markets and the location of main assets; external buyers: sales markets, production categories by their target economic purpose, and buyers categories by their interaction profitability (Fig. 1).

The proposed levels of segmentation serve as the basis for developing the multi-dimensional business accounts’ analytics:

- The control account code (1st and 2nd levels)
- The sub-account code (3rd and 4th levels)

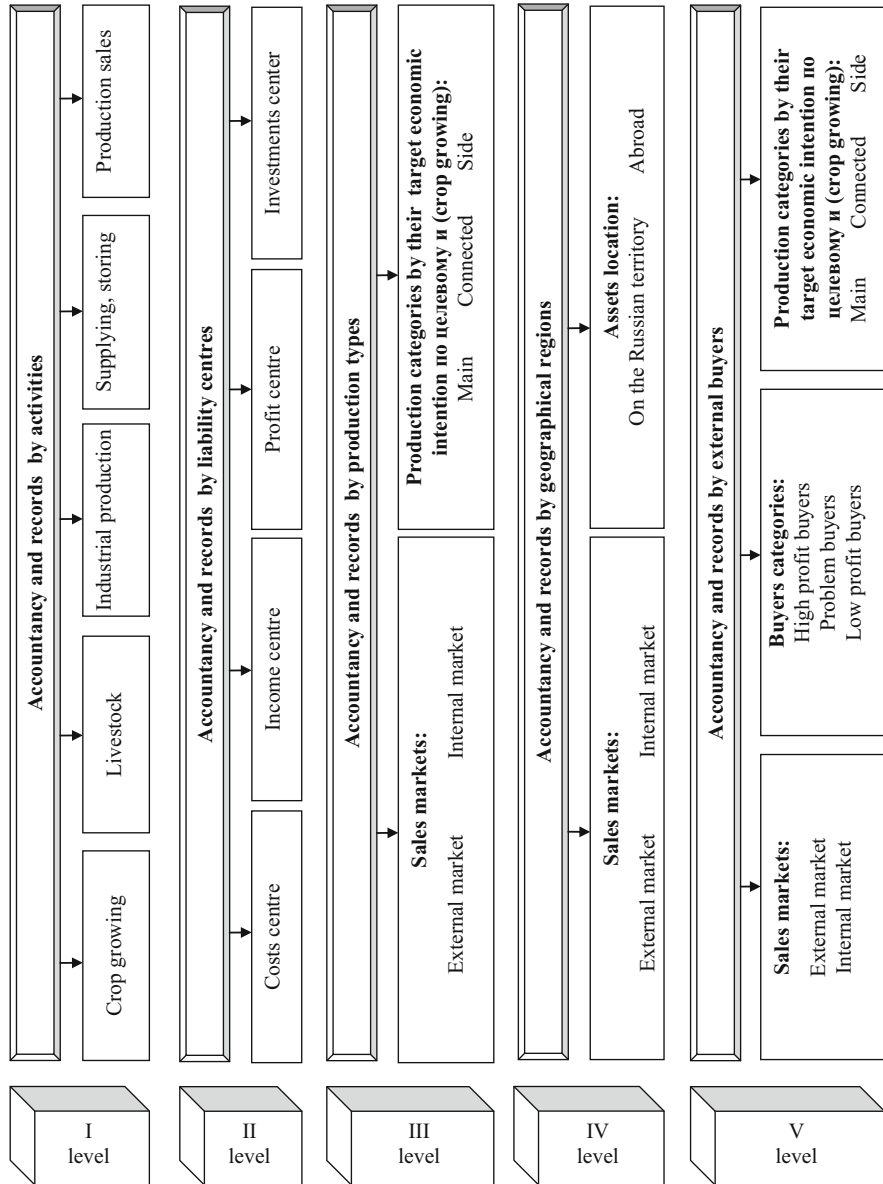


Fig. 1 Accountancy and records model in an agricultural holding by segmentation levels. Source: compiled by the authors

- The activity code (including crop growing, livestock, industrial production, logistics and storing, products sales) (5th and 6th levels)
- Responsibility center code (7th and 8th levels)
- A product’s type code (9th, 10th, and 11th levels)

- The activity of geographical regions code (sales markets and assets' location) (the 12th and 13th levels)
- External customer's code (sales markets, buyers category, product category) (14th, 15th, and 16th levels)
- VAT rate code (10 and 18%)—2 digits (17th and 18th levels)

We suggest to introduce the developed 18-level analysis exercise for control accounts involved in forming the internal and external segmental accountancy.

A. Glushchenko (2008) believes that “in order to ensure the unity of accounting made by the holding members, a system of internal accounting and reporting standards is necessary, which will define the criteria and isolation levels of activity segments as objects of accounting supervision, the forms of primary accounting documents, indicators, and forms of segmental accountancy, forming the accounting policy for segmental reporting purposes within a unified agricultural holding's accounting policy and so on.”

Accounting Regulations “Segment Information” (PBU 12/2010) (2010) defines a management approach for the purposes of analysis and information by segment. Consequently, segmental account must first be integrated into the unified accounting system of agricultural holdings with financial and management accounting systems. Consider the features of the formation of agricultural holdings section unified accounting policy—accounting policy for segmental reporting purposes, taking into account the provisions of PBU 12/2010 “Segment Information.” Formation of accounting policy for the purpose of segmental accounting as part of a single agricultural holding accounting policy should be built in a certain sequence and contain elements that are system-integrative quality, i.e., such that in the system capable of solving a common problem for the whole system (Provisions on accounting “Accounting policy of an organization” 2008). Subject to the provisions of PBU 12/2010 (2010), we developed a method of formation of accounting policy for segmental reporting purposes (Fig. 2).

Thus, implementation of accounting policy for segmental reporting purposes will allow applying the same accounting principles in the framework of an integrated agricultural formations providing procedural support to the organization and management of segmental accounting and the formation of internal and external segmental reporting.

In the study, three accounting policy section for segmental reporting purposes are defined: introduction, organizational, technical, and methodical, and elements and options of segmental accounting disclosing segmental technique of conducting accounting are highlighted, as well as formation of internal and external segmental reporting for agricultural holdings.

The practical realization of the proposed method of modeling and internal standardization system segmental accounting and reporting in agricultural holdings will achieve methodological unity segmental accounting to expand the use of software for automating accounting processes and to assess the effect of the operations to a group of companies (Glushchenko and Zemlyanskaya 2014).

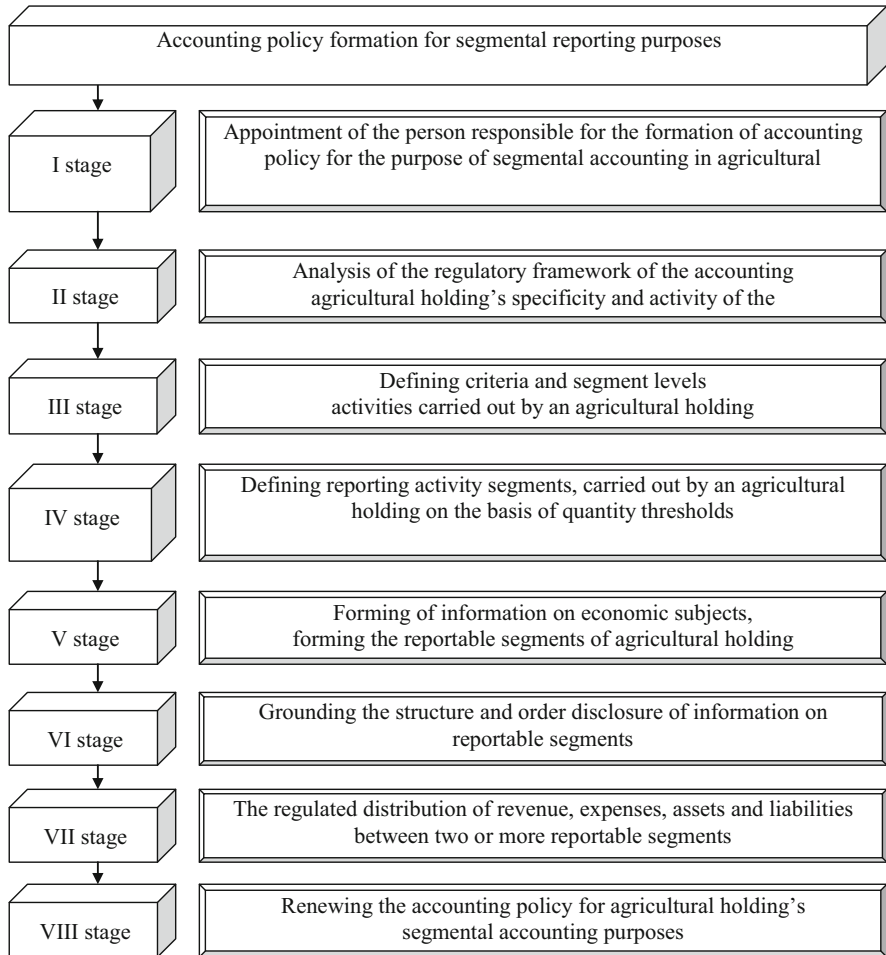


Fig. 2 Target accounting policy formation algorithm. Source: compiled by the authors

The process of “production” of agricultural products is typical for agricultural holdings; the “post-production” of services to promote the products to the consumer is determined solely by the needs of the latter, as a buyer in need of intermediate storage of purchased products until its shipment, other transportation, etc. As a result, the cost of individual customer service consists of two components: equal for all customers in the cost of production of one quintal of production and different for each customer in the costs of the commercial activities (intermediate storage, recycling, etc.).

The need to develop strategic priorities in building relationships with customers, based on the information on the profitability of different customers represented in the segmental reporting—on the one hand, and insufficient developed technique of

formation of such reporting for agricultural holdings, on the other hand, require in-depth study and development of methodical bases of formation of segmental reporting the profitability of agricultural holdings interaction with buyers of agricultural products.

To optimize the resource and expenditure flows between buyers; it is advisable to segment all of their diversity according to the criterion “return on engagement” in a limited number of target segments (groups), which will receive an aggregated and relevant information. Profitability interaction—is a quantitative measure of the efficiency of agricultural holdings cooperation with the buyer and the feasibility of developing long-term relationships with them.

As a result of analysis of the substantive nature and scope of the ABC analysis, we offer the methodology of forming segmental reporting on the profitability of agricultural holdings interaction with customers, including five stages:

- I. Calculation of “return on engagement” for each purchaser of agricultural products and agricultural holding services.
- II. Establishing boundaries for segments A—“highly profitable customers,” B—“problem customers,” and C—“low-profit customers” on the basis of the indicator “profitability of interaction.”
- III. Ranking segment buyers, depending on the level indicator “margin interaction,” in accordance with the calculated interval boundaries.
- IV. Formation of the segmental reporting of profitability of agricultural holding interaction with customers.
- V. Development of the strategy of interaction with agricultural holding buyers segments (groups of buyers).

Let us consider in detail each of the presented steps.

To calculate the relative index of “return on engagement,” which forms the basis of the segmentation of customers, it is necessary to determine the cost of the agricultural holding interaction with customers, as in the course of their service different in content and value of trading costs are formed.

Distribution of trade costs for buyers of agricultural holding by means of the functional costing system can be schematically represented as a two-step process (Fig. 3).

Figure 4 shows grouping the customers into three segments based on the calculated intervals for their boundaries.

Based on the analysis of indicators of the segmental report modeled, the strategy of interaction with customers agricultural formations groups representing a system of long-term trajectories of conceptual relationships with each segment of the agricultural holding (group) includes three parts: conceptual, strategic, and program. The structure of the strategy is shown in Fig. 5.

Thus, the proposed set of procedures will provide within an integrated agricultural formation’s unified accounting and analytical systems the qualitative information on business segments, which allows determining the contribution of each isolated component (segment) into the result of an agricultural holding’s activity as a whole, identifying business units’ profitability growth perspectives, assessing the

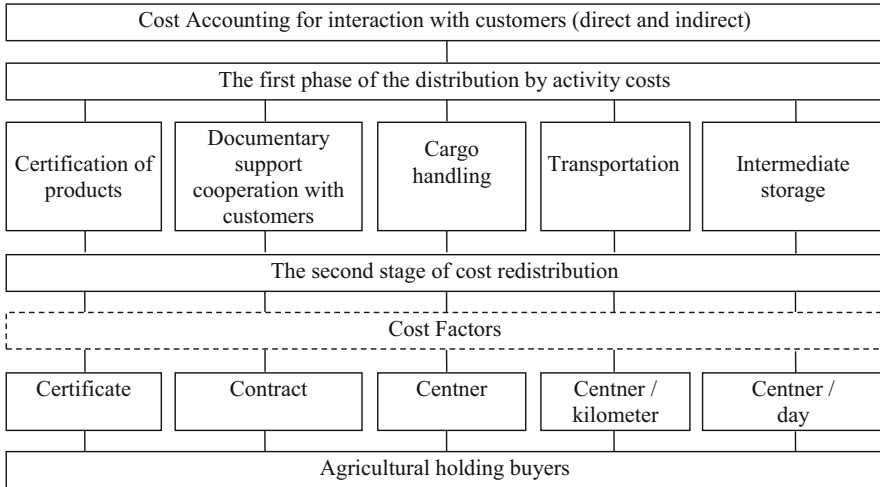


Fig. 3 Two-stage process of labor costs in the functional distribution system costing. Source: compiled by the authors

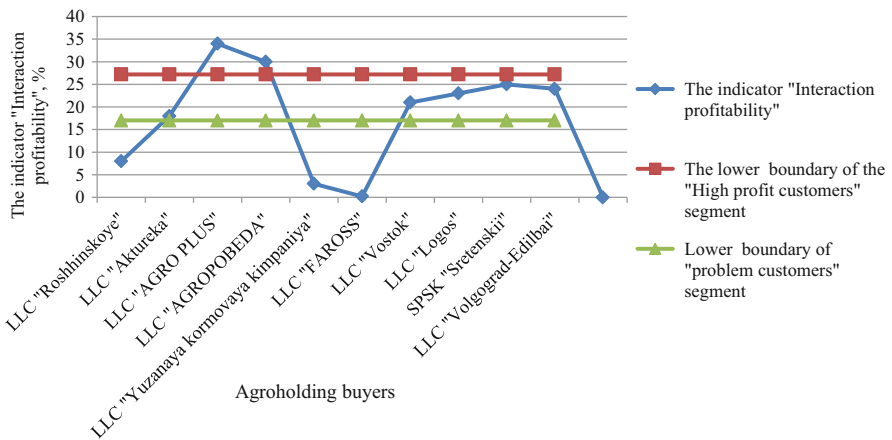


Fig. 4 ABC segmentation of buyers of agricultural holding in terms of "return on engagement." Source: compiled by the authors

top managers' quality of work, making rational management decisions on redistributing the resources between business segments, and defining a long-term strategy for an agricultural holding's cooperation with external buyers in order to ensure sustainable economic development of the economic subject.

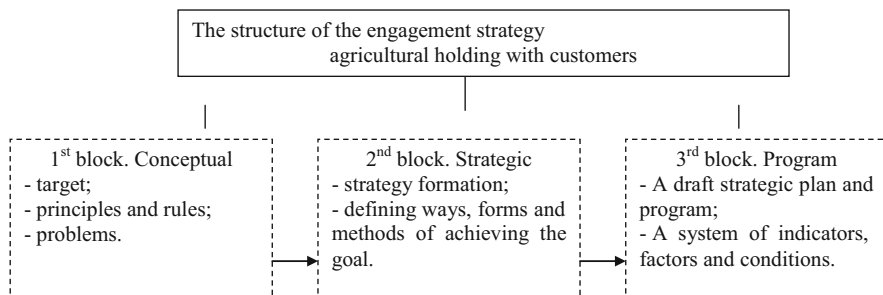


Fig. 5 The structure of the agroholding's interaction with buyers. Source: compiled by the author

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Problems and Perspectives of Transport Humanization Under the Conditions of Globalization and Integration

Irina A. Morozova, Alevtina A. Rayushkina, and Sergey A. Shiryaev

Abstract The purpose of the article is to determine the problems and perspectives for humanization of transport under the conditions of globalization and integration. Methodological basis of the research includes the method of regression and correlation analysis, which authors use to study dependence between the level of its integration into the global economy and the level of humanization of economic system's transport by the example of the USA, Germany, China, South Africa, and Russia. The authors determined the following main problems in the sphere of development of transport infrastructure in modern Russia: main attention is paid to the development of only material and technical infrastructure, with determination of general directions only—interested parties are not involved, with participation of just the state and investors. As a result of the research, the authors come to the conclusion that one of the main reasons for ineffectiveness of efforts in the sphere of development of domestic transport system is their fragmentarity, caused by lack of orientation at transport humanization. Perspectives of increase of projects' effectiveness in the sphere of development of transport infrastructure and increase of international competitiveness of Russian transport system are viewed. For this purpose, the authors have developed the concept of humanization of transport under the conditions of globalization and integration.

JEL Classification Codes F15 • F63 • L91

1 Introduction

Modern Russia's transport system's (and its infrastructural components') non-correspondence to international quality standards is a restraining factor of its integration into the global economy. The working hypothesis of this research

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consists in the fact that one of the main reasons for ineffectiveness of efforts in the sphere of development of national transport system is their fragmentarity, caused largely by lack of orientation at humanization of transport. The purpose of the article is to verify the offered hypothesis and to determine the problems and perspectives of humanization of transport under the conditions of globalization and integration.

2 Theoretical, Informational, Empirical, and Methodological Grounds of the Research

Theoretical basis of the research consists of materials of research by modern authors in the sphere of globalization and integration, among which are Skiter et al. (2015), Kravets et al. (2014), Dzhandzhugazova et al. (2015), Popkova et al. (2013), Berend (2014), Nayar (2014), Battersby (2014), etc., and in the sphere of functioning and development of transport system, which include publications by Morozova et al. (2013), Huang et al. (2016), Gössling et al. (2016), Morozova (2008, 2009, 2011a, b), Activation and Mobilization (2008), etc.

The methodological basis for the research for verification of the offered hypothesis in this work uses the method of regression and correlation analysis, with the help of which the authors study the dependence between the level of its integration into the global economy (y) and level of humanization of transport economic system (x) by the example of the USA, Germany, China, SAR, and Russia.

The level of country's integration into the global economy is given on the basis of the data of the research of T. G. Ponomareva, E. V. Zakharova, and R. G. Danilko "Criteria of Country's Integration into the Global Economy," performed in 2015. It is evaluated with the help of such indicators as the level of economy's openness, volume of export and import, contribution into formation of the global GDP, etc. The level of humanization of transport is evaluated with the help of specially developed proprietary methodology on the basis of official data of the World Economic Forum over 2000–2015, according to the following formula:

$$HT_{ij} = (QATI_{ij} + QRTI_{ij} + QPTI_{ij} + QATI_{ij})/4 \quad (1)$$

where

HT—level of humanization of transport

QATI—quality of automobile transport infrastructure

QRTI—quality of railroad transport infrastructure

QPTI—quality of port transport infrastructure

QATI—quality of air transport infrastructure

i —year

j —country

All the estimate indicators for the countries of the world are given in detail information on calculation of the index of global competitiveness of countries (The Global Competitiveness Index in detail) in Chap. 2 (second part: Infrastructure) and are denoted in the following way: quality of roads, quality of railroad infrastructure, quality of port infrastructure and quality of air transport infrastructure (Schwab, 2016).

3 Results

Let us analyze the influence of humanization of transport of economic system of a separate country on the level of its integration into the global economy. For that, let us use Table 1.

Based on the data of Table 1, the following model of the paired linear regression, generalized for all countries, was received: $y = 13.70 + 6.96x$, which shows that with increase of the level of humanization of transport of economic system by 1 point, there is increase of the level of its integration into the global economy by 6.96%. Correlation coefficient exceeds 99%. This shows that the connection between the studied indicators is strong and direct.

Conduct of more thorough analytical study of projects in the sphere of development of transport infrastructure in modern Russia allowed determining the following main problems in this sphere. Firstly, in the process of realization of projects in the sphere of transport infrastructure, the main attention is paid to development of only material and technical infrastructure and to increase of the coverage of transport roads. Secondly, in the process of planning of development of transport infrastructure in Russia, only general directions are determined, while specific measures, terms of their realization and the responsible for them are not appointed, and stage-by-stage control is performed poorly, which does not allow obtaining the desired results. The example of this is the Transport Strategy of the

Table 1 Estimate data for conduct of statistical analysis

Country	Indicator	Indicators' values for the periods			
		2000	2005	2010	2015
USA	y (%)	81	83	88	91
	x (points)	5.3	5.5	5.8	6
Germany	y (%)	66	68	74	76
	x (points)	5	5.2	5.6	5.8
China	y (%)	71	78	82	89
	x (points)	3.7	4.1	4.3	4.6
SAR	y (%)	37	41	43	48
	x (points)	2.8	3	3.2	3.5
Russia	y (%)	49	51	54	57
	x (points)	3.4	3.6	3.8	3.9

Source: Schwab (2016), Ponomareva et al. (2015)

Russian Federation until 2030, established by the Ministry of the Russian Federation dated June 11, 2014, No. 1032-r (Ministry of Transport 2014).

Thirdly, the process of development of transport infrastructure does not involve interested parties but only the state and investors. This is a reason for narrow direction of most of projects in the sphere of development of transport infrastructure and ineffective control over their execution.

Therefore, Russia has no orientation at humanization of transport, which proves the working hypothesis of this research. That's why perspectives of increase of effectiveness of projects in the sphere of development of transport infrastructure and increase of international competitiveness of transport system of Russia are obscure.

This work offers the following concept of humanization of transport under the conditions of globalization and integration (Fig. 1).

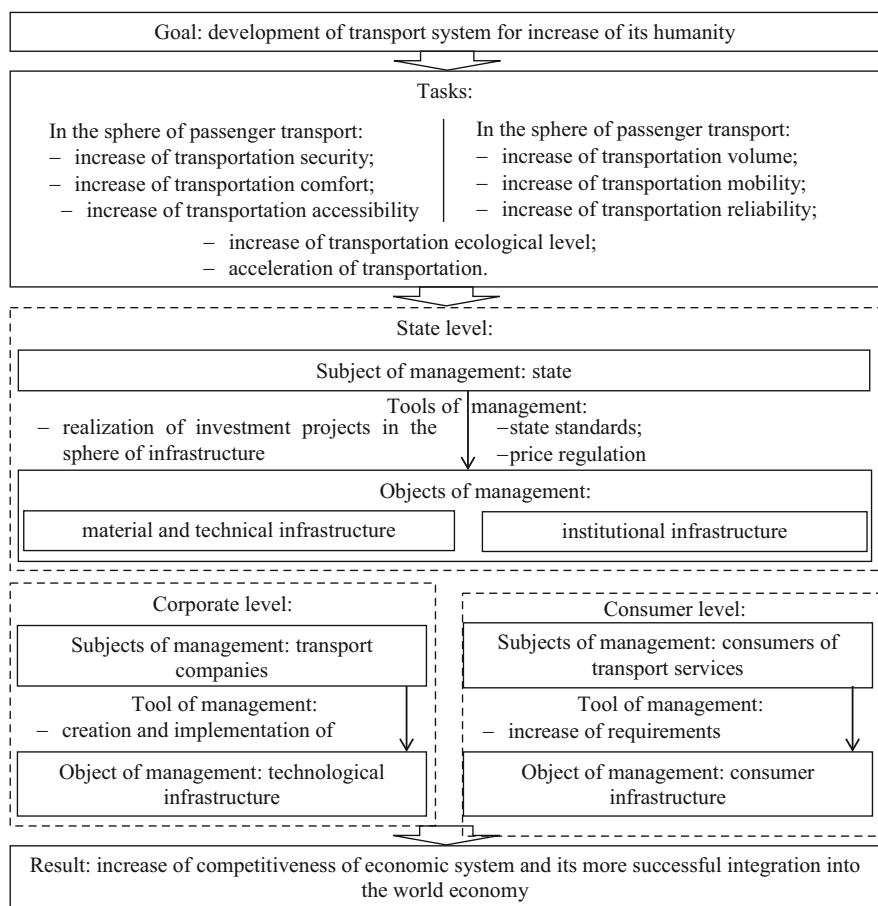


Fig. 1 Concept of humanization of transport under the conditions of globalization and integration

As is seen from Fig.1, the offered concept is oriented at development of the transport system in direction of increase of its “humanity” as to consumer of transport services, which leads to increase of competitiveness of the economic system and its more successful integration into the world economy.

4 Conclusions and Recommendations

It should be concluded that under the conditions of globalization, not only development of transport system stimulates integration of national economy into the world economic system, but distribution of global tendencies stimulates humanization processes in the transport sphere. That’s why in the long term, it is possible to expect activation of the process of humanization of transport, due to influence of external factors—even with unfavorable internal situation in national economy.

A certain limitation of the results of the performed research is theoretical character of the developed concept of humanization of transport under the conditions of globalization and integration, which causes necessity for its detalization and adaptation to specific economic conditions before practical application as perspectives of conduct of further research but at the same time predetermines its universal character.

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Formation of Organizational Directions for Implementing Road Mapping into Activities of Industrial Enterprises

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Tatiana Lukyanchikova, and Andrey Polyinin

Abstract The necessity for planning the results of industrial corporations' activities is beyond doubt. However, there is no general answer to the following questions: how to build this process and which methods and tools of planning allow the enterprise to overcome all obstacles and taking leading position in the market, country, or the world? The article views one of the most popular tools of planning—road mapping. The authors describe peculiarities of its application at the level of industrial corporations and determine organizational directions of implementation of this method of road mapping into the enterprises' activities.

1 Problem Setting

Viewing the approaches to planning of activities of Russian industrial corporations in historical aspect, it is possible to note several stages of its development.

First stage (Soviet period) is characterized by the system of “centralized economic planning”. In this period, enterprises did not do independent planning but strived for achievement of indicators set at the state level.

Road maps are a tool of strategic planning which allows determining the plan of actions of specific level of management for achievement of goals and solving the tasks set by the higher level of management (Baykov 2015).

Activities of application of road mapping technology for the level of Russian national economy management may vary. Road maps are used most intensively at the macro-level (Stroeve et al. 2015a, b). Recently, the Government of the RF passed a range of decrees for establishment of “road maps” in almost all federal

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_17

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bodies of executive power—in particular, plans of actions (“road maps”) for (Sinyagin 2014):

- Ministry of Economic Development of Russia—“Support for access to foreign markets and support for export”
- Ministry of Health of Russia—“Changes in social sphere for increase of healthcare effectiveness”
- Ministry of Education and Science of Russia—“Changes in social sphere for increase of effectiveness of education and science”
- Ministry of Culture of Russia—“Changes in social sphere aimed at increase of cultural sphere effectiveness”

This technology is widely used at the regional level (meso-level). Road maps for changing the state of specific spheres of life activities and determination of sectorial priorities are formed most often. For example:

- Plan of measures (“road map”) “Changes in educational sphere of Nizhny Novgorod Oblast”
- Plan of measures (“road map”) “Changes in social sphere for increase of healthcare effectiveness in Kirov Oblast”

This technology is popular in the process of management of industrial corporations’ activities. So it is necessary to view specifics of application of road mapping technology at the level of enterprises (Butakov 2006).

2 Peculiarities of Road Mapping Application in Industrial Corporations’ Activities

At present, road mapping is an effective method of planning, forecasting, and management of organization’s activities that implement novelties and participates in innovational environment formation. Road maps stimulate concentration of attention at the long-term planning and are the basis for scientific and technical planning (Jemala 2008; Belousov and Lukasheva 2010; Glushko 2013).

In our opinion, road mapping will be the popular instrumentarium for companies that use management for results, instead of management for goals. Figure 1 shows the reasons for application of mapping tools in practical activities of industrial corporations.

Thus, road mapping allows for concentration on the most important and significant directions at each stage of the planning process. Road mapping is conducted for simplifying the procedure of making managerial decisions and visibility of provision of information on perspective and alternative variants of mapping object development.

“Road maps” are informational support for the process of managerial decisions making by the mapping object—i.e., they must have the addressee whom the “map”

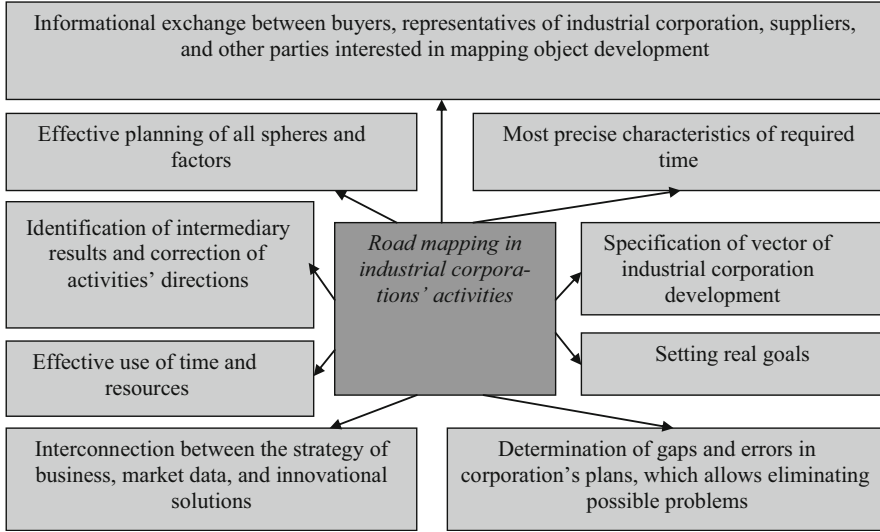


Fig. 1 Reasons for application of “road mapping” in practical activities of industrial corporations

is developed. Analysis of situation is not just picturing the situation but addressee’s situation, future is addressee’s possible future, and strategy is stage-by-stage plan of actions of the addressee.

Road maps accumulate:

Firstly—ideas of the desired future—these ideas, as a rule, are not so tough as certain final perspective but as a network of landmarks which sets the open variant of the future.

Secondly, description of initial state of the system (analysis of situation).

Thirdly, strategies (plans and scenarios) of transition to the desired future.

Fourthly, problems and obstacles for realization of perspective strategies (plans and scenarios) and possible ways of overcoming them.

Fifthly, technical and economic substantiation of the scenario (alternative scenarios).

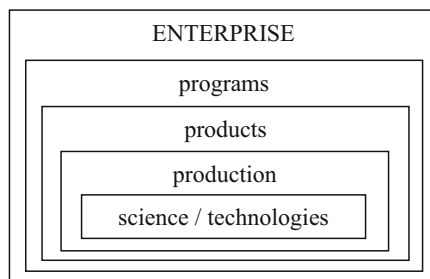
Sixthly, measured criteria and indicators of evaluation of movement to the desired future.

Industrial corporation is a complex mechanism that unified technologies, products, and other elements (Fig. 2).

A logical finish of the production process is issue of product/assortment of products. The issued assortment of products should satisfy current and hidden needs of clients. Thus urges the enterprises to create product road maps that determine perspectives and directions of change of requirements of targeted audiences for goods, as well as plan of product evolution.

The result of mapping could be a certain plan for development of industrial corporations (products, technologies, etc.), which contains alternative paths of their development in view of possible problems and obstacles in realization.

Fig. 2 Simplified model of enterprise



3 Factors that Hinder Implementation of Road Mapping Technology into Activities of Industrial Corporations

The viewed peculiarities of application of the road mapping technology allow for determination of the main factors that hinder wide distribution of this technology:

1. Labor intensity of road map compilation.
2. Compilation of maps requires detailed information on enterprise's activities and situation in the external environment.
3. Need for personnel with experience of planning, analytical capabilities, and logical thinking.
4. Necessity for formalization.

At that, these factors influence large and small industrial enterprises differently (Table 2).

As a result, large industrial corporations use the road mapping technologies, while medium and small enterprises use only certain types of the technology.

For the road mapping technology to be used more actively, it is necessary to know organizational directions of its implementation into enterprises' activities.

4 Organizational Directions of Implementation of Mapping into Activities of Industrial Corporations

The process of development of road maps for industrial corporation consists in study of existing potential of development, determination of pros and cons, possibilities, threats, etc. Study of the global and domestic experience on road mapping enables determination of general stages for their implementation into practical activities of industrial corporations (Table 3).

Industrial corporations should forecast perspective vectors of application of activities results: firstly, evaluate potential final demand and, secondly, evaluate the supposed economic effectiveness. The developed road map will explain its usefulness for business representatives who will be able to use its results. That is, road mapping should be a final link of innovational environment which will lead to

Table 2 Factors hindering implementation of road mapping technology in industrial enterprises' activities

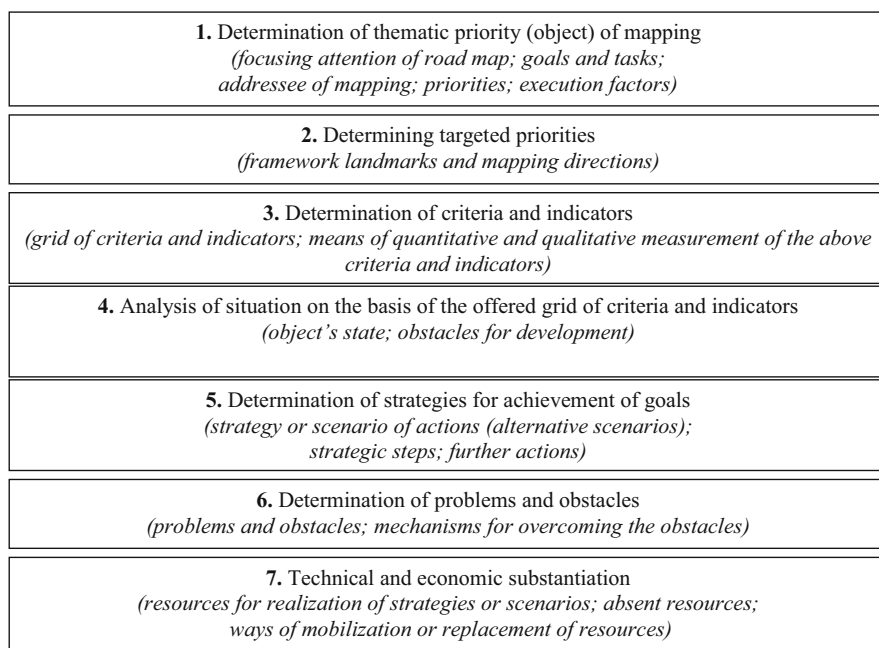
Factor	Influence of the factor within			
	Large industrial enterprise		Medium and small industrial enterprise	
	Level of influence	Explanations	Level of influence	Explanations
Labor intensity of road map compilation	Medium	The enterprise has the planning department. Its personnel coordinate actions of all those involved into the process of road map compilation	Strong	There are no employees who are involved only in planning. Planning should be combined with execution of direct responsibilities. Distraction of employees from execution of direct responsibilities may cause failure of the production process
Need for detailed information on enterprise's activities and situation in external environment	Medium	Information available. Information is excessive—complications with processing and generalization arise. Possible to receive contradictory information from different departments of the enterprise	Strong	Collection of information in external environment is performed from time to time. Information is not complete
Need for personnel with experience of planning, good analytical capabilities, and logical thinking	Weak	Road maps are created with the help of managers of all structural departments (team 20 + people). Necessary skills and experience of planning available	Strong	The enterprise's manager is often responsible for creation of road maps
Need for formalization	Weak	The corresponding document is formed as a result	Strong	The map is poorly detailed and not prepared as a corresponding document (only a draft)

reduction of risks at the final stage of innovational goods production and will explain and substantiate the necessity for state financial support (Geraskin 2006; Kononov et al. 2013; Shanin 2012).

A "road map" of industrial corporation should be built with the help of the following algorithm (Fig. 3).

Table 3 Stages for implementation of road mapping

Stage	Characteristics
First	“Road map” of any object consists of long-term forecast of development with certain time periods
Second	“Road map” is created by formation of a work group consisting of specialists of different profile
Third	“Road map” is just a visual reflection of forecast state of the object, and ways of its realization and achievement are previously determined
Fourth	“Road map” shows economic effect from execution and realization of events with substantiation of optimality of recommended scenarios of development in view of effectiveness of resources use at each stage of decision-making

**Fig. 3** Algorithm of building a road map of industrial corporation

Of course, presentation of “road maps” may be accompanied by calculation of economic effectiveness, resource maps, graphical schemes, and time graphs of strategies realization (scenarios).

According to the authors, the process of formation of organizational schemes of mapping implementation into activities of industrial corporations should result in formation of a document containing one of the following types of information provision in the road map (Table 4).

Table 4 Variants of provision of road maps in the final planning document

Types of information provision in road map	Characteristics
Layered type	The most popular organizational scheme of road map, consisting of several layers. Building a graph allows viewing the process of development at each layer and interlayer dependencies, which helps to implement new technologies
Column type	Organizational scheme of road map has a form of a set of columns consisting of a separate layer. Building a graph of layers will allow simplifying and generalizing the necessary data
Table type	This organizational scheme of mapping supposes application for the situation when efficiency could be evaluated and divided into separate time intervals
Illustration type	Creativity—namely, figures—is also used in road mapping
Diagram type	If the mapping results could be presented in quantitative form, it is expedient to use the program type
Text type	There are road maps without graphic components—they are based on the text

5 Conclusions

The use of organizational directions of implementing road mapping into activities of industrial corporations will stimulate effective planning of actions for their development. The road mapping technology should be implemented by industrial corporations in the following cases: (1) deep changes in requirements set by the market at which this industrial corporation performs its activities; (2) industrial corporation is at the strategic crossroads related to entering new markets; (3) industrial corporation lost the market share within its sphere; (4) industrial corporation does not have a strategy for conquering new markets; (5) industrial corporation tries to make decisions in the sphere of R&D works; and (6) industrial corporation does not possess resources and skills for supporting innovations.

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Improvement of the State Support Mechanism for Regional Agro-Industrial Complex Under the Conditions of International Sanctions and Russia's Membership in the WTO

Natalya A. Mikhaylova, Tatyana V. Babich, and Olga S. Smirnova

Abstract The authors of the article have carried out the analysis of the influence of international sanctions imposed on Russia and its membership in the WTO and their impact on the Russian agro-industrial complex. The most dangerous factors that affect the agriculture are defined. The authors have considered current conditions and problems of food security in Russia and Volgograd Oblast, in particular. The measures for enhancing the agriculture state support mechanism on the regional level are given in the article on the basis of Russia's admission to the WTO; the analysis of possible risks is made with respect to international sanctions imposed on Russia. In addition to the implementation of state support for agriculture, it is important to take into account the conditions of international sanctions in view of the remaining requirements and the WTO rules.

1 Introduction

The specifics of the Russian Federation's membership in the World Trade Organization in 2014 characterized the beginning of the new trade-economic aspects. A set of noneconomic factors, dominating in Russia's relations with Western economies and Ukrainian economy, have influenced the foreign trade between these countries, each being a meaningful WTO member. Imposing sectorial economic sanctions by the founding states and their allies, all being members of the WTO, contradicts this organization's basic principles, which illustrates a declining role of the WTO national economy factor. As the sanctions directly contradict the WTO's norms and different nontariff and other trade restricting forms increase, Russia's membership in the WTO is likely to reduce. Thus, import substitution, being the significant aspect of providing economic security, becomes the key strategic national and regional task. Thereby, the improvement of regional agro-industrial

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complex state support mechanism appears to be urgent. Actuality of this problem stems from the fact that under the conditions of Russia's integration with the WTO, the mechanism of state support for agribusiness should provide growth of competitiveness of agriculture and manufactured in their products.

Agricultural products, being imported to Russia, actively compete with domestic agricultural products, the cost growth of which is incredible. Russia possesses high agro-industrial potential. Being one of the less supported economic sectors in Russia and unable to compete with foreign developed economies, Russian agriculture entered crisis. This is caused by the worn out assets, use of old and resource-demanding technologies, agricultural personnel qualification decline, agricultural science insufficient financing, low agro-food competitiveness, and chronic infra-structural problems.

Thus, the purpose of the study is to develop theoretical and practical directions to improve the mechanism of state support for regional agriculture, taking into account international requirements on the basis of analysis of regional agricultural enterprises.

2 Methodology

The authors use the innovative methodology, based on combining the institutional and spatial-economic approach as part of the agro-industrial complex state support in terms of Russia's admission to the WTO improvement concept. The new creative and conceptual theses suggested by domestic and foreign scholars, focusing on agro-industrial complex state support, agriculture and agro-industrial complex state management, and the role of agriculture in the states and its regions' economies, are adapted in the article.

At the same time, despite a big number of related research works, many theoretical and practical problems of the state's influence on the agriculture's development, taking into account its admission to the WTO, remain not covered and need serious investigation, especially in depressive regions.

3 Results

Such factors as world and national economy, forms and methods of state support to agriculture, and business ways to adapt to modern economic challenges influence the state's agricultural development. The problem of agricultural market balanced provision has been evolved by continuing unprecedented in their volume and number sanctions imposed by the EU, the USA, Australia, and other countries, and at the same time, the state had to restrain agricultural products price rapid growth.

This problem may be solved only in accordance with state agrarian policy, its adaptation to modern fast-changing conditions, and its ability to turn agriculture into a top national priority. Moreover, we consider it appropriate to make food supplies an integral part of Russian export, to modernize domestic agro-industrial complex, and to update production and social infrastructure. This will all definitely demand a clear mechanism on how to implement the measures for providing state support the agro-industrial complex.

Thus, it's necessary to develop a set of documents aimed at increasing the state support for domestic agrarians. As was noted in the Prime Minister's instruction, the amount of budgetary allocations for implementing the actions, planned by the state agriculture development and agricultural goods market regulation for 2013–2020, should be increased. The Russian Federation President's decree on applying specific economic measures, aimed at protecting national interests, has been signed.

The sanctions, imposed on Russia because of certain events that took place in Ukraine, create a serious and multi-aspect problem of food security in Russia even more urgent. Russia is largely importing such products as meat and meat products, raw sugar, etc. Based on world experience, a state which imports 20–30% of goods is on the edge of losing its economic security. Russia is already beyond in several critical indicators, speaking about food.

Russian Federation's food security is the state of economy when Russia's food security is ensured, and physical and economic availability of food is guaranteed to each citizen in the rational consumption volume, essential for a healthy and active lifestyle.

Being one of the top priorities, providing food security comprises a wide range of factors: national, social, demographic, economic, and ecological.

Providing food security determines the state's integrity and sovereignty in the context of global partnership.

When speaking about a country's self-sufficiency, its regions' socioeconomic development should be taken into consideration. The extent of regions' food security is characterized by their food self-sufficiency, which reflects the correlation local production and cumulative demand for it. This can hardly be achieved in regions with severe natural and climatic conditions; besides it will be economically unprofitable. Such regions, experiencing the need for imported food due to the lack of their own resources, have to receive agricultural support from the most closely situated regions, and this will be the right way of ensuring the country's food security. The import of agricultural products to such regions should not be viewed as a spontaneous market phenomenon but as a set of economic, organizational, and legal targeted measures, taken by a region's state authorities.

Volgograd Oblast is among the regions with normal average food self-sufficiency level.

Volgograd Oblast has developed agricultural production and is one of the largest agricultural producers in the Russian Federation. The region produces a wide range of agricultural production: vegetables, fruit, dairy products, oils, confectionary,

Table 1 Volgograd Oblast's rate among the South Federal District regions in producing main agricultural goods

Place ^a	RF regions	Independent private rates					Final rate
		Crops	Sunflower seeds	Sugar beat	Vegetables	Fruits and berries	
1/1	Krasnodar Krai	1/1	1/1	1/1	2/3	1/1	6/7
2/2	Volgograd Oblast	3/6	3/5	–	1/2	2/3	9/16
3/4	Rostov Oblast	2/2	2/2	2/13	4/6	3/5	13/28
4/34	Astrakhan Oblast	6/63	–	–	3/4	4/38	13/105
5/41	The Republic of Adygea	4/37	4/16	–	5/51	5/47	16/151
6/50	The Republic of Kalmykia	5/40	5/30	–	6/71	6/57	21/216

^aNumerator—the region's place in South Federal District, denominator—the region's place in the RF

Source: Mikhaylova et al. (2015)

bakery products, juice, drinks, and more than 500 items more (Mikhaylova et al. 2015) (Table 1).

The importance of agriculture in Volgograd Oblast's economic life is determined by the agricultural production share in the region's GDP, production potential, the number of employees and, of course, by the size of the territories used in agricultural production. Volgograd Oblast is ranked third by the size of its agricultural lands after the Altai Krai and Orenburg Oblast. This tells us that Volgograd Oblast is among Russia's main agrarian regions.

The analysis of regional agricultural organizations' activity over the last years has discovered several restraining agriculture factors: tough soil-climatic conditions, several regions' low level of agricultural standards, and rural areas' unsatisfactory state.

At the same time, there are several tendencies, as a result of which food prices rise and the traditional agricultural production methods are unable to balance these negative tendencies, which evoke problems for agriculture's sustainable development:

- Agrarian producers' lowering profitable rate, provoking agricultural technical and technological lag
- Most agrarian producers narrow focus, which causes their financial uncertainty
- Poor processing and food industry development, export of a great amount of unprocessed agricultural products
- Weak market infrastructure, retail networks' increasing monopolization, poor cooperation between agricultural producers and those selling it
- Poor social appreciation of agricultural labor, improper resource availability on all finance levels

Before the sanctions were imposed on Russia, local agricultural producers had had to face the following challenges:

- Spreading of import-oriented economy as a result of highly processed products markets being merged
- Foreign partners' control over the resources for producing food
- Domestic food market increasing instability in pricing and physical indicators as well
- Increasing dependence on imported food
- Agricultural production and food processing lowering profitability as a consequence of rising marketing expenses

As a possible integration of Russia into the global food market, the following aspects have been considered:

1. Developing market competition
2. Increasing the export
3. Improving the nutrition structure and quality of produced food

Since Russia has become the member of the WTO and now it is imposed with international sanctions, the government should intensify its policy on providing state support to agriculture. Thus, according to the Economy and Agro-industrial Complex State Support Department, Russian Ministry of Agriculture, together with sectoral organizations (associations), it prepared amendments to the agriculture and agricultural products, raw materials, and food development 2013–2020 State Program. These amendments have been approved by the government. The amendments are intended for preventing agricultural deterioration as a consequence of imposed economic sanctions and for stimulating agricultural production aimed at substituting imported food.

According to experts, the sanctions imposed on Russia on the one hand have exacerbated the agriculture's sustainable development, but, on the other hand, the sanctions stimulated to cut down on imported food and stimulated Russian agrarians to increase the volume and assortment of produced agricultural food, thus minimizing the dangers which have been slowing agricultural development.

In current conditions, domestic agriculture has become a national priority. At the same time, providing food security will be determined by initial conditions, long-term domestic agricultural production competitiveness, and processing industry.

Forming effective agrarian policy should be the initial condition. Long-term agricultural competitiveness can be created on the basis of present potential and innovative modernization opportunities with appropriate financing, as low agricultural production profitability deprives most agrarians of using science-technical innovations, thus reinforcing already existing negative tendencies.

Being the entities of implementing the agro-food policy, on their hierarchical level, regional authorities should regulate agricultural production volume growth by means of labor market regulators, such as creating new workplaces, stimulating and involving more labor force, creating a capital market and favorable investment climate and development of the state-private mechanism.

At present, a mechanism for providing state support to local agricultural producers is being elaborated. Thus, the negotiations on selling local production by big trading companies are taking place; the Volgograd Oblast Governor has given the task to increase food purchasing for social needs, particularly by buying local producers' production.

One of the local agro-industrial complex problems is low technical and technological modernization. Without solving this problem, our local agricultural production will not develop, the Food Security Doctrine targets will not be achieved, and moreover the current position of agricultural production will be lost.

Speaking about the international sanctions, it is worth mentioning that the ban on import will positively affect the suppliers from countries, not included in the sanctions' list. However, nothing will change in Russian agriculture unless the State starts serious investment campaign. Another problem, which has been caused by the sanctions, is food inflation (Russia in Numbers 2015).

Many experts say that Russian agriculture can benefit from these sanctions. A ban on import won't be enough. In fact, after the prices have risen, the agriculture or some of its particular sectors will be able to increase their marginality. However, it is not likely for the agriculture to receive sufficient investment.

4 Conclusions

This study allows us to make the following conclusions. Firstly, agriculture is an inertial sector that is why it is impossible to launch an agricultural instantly. Secondly, as the confrontation between Russian and the West grows, the financing costs rise. This is due to the sanctions, which have added several percentage points to the investment credit rate. In these conditions qualitative advance in agriculture is possible in case the state increases the amount of allocations.

We consider that the following measures should be implemented in the framework of the mechanism of state support for agro-industrial complex, the sanctions imposed on Russia, and its membership in the WTO:

- The change of the current program for subsidizing purpose loan interest rate, taken by personal subsidiary plots or farms as part of the personal subsidiary plots or farms investment help
- Purchasing only domestic products for state and municipal needs
- The change of the program of investment loans taken for buying breeding livestock; for reconstructing, modernizing, and building livestock housing; for acquiring agricultural equipment; for restricting agrarian production; and for providing employment in rural areas
- Support for regions with unfavorable climatic conditions
- Development of the state program on the production and logistics infrastructure and storage of agricultural infrastructure, namely, the creation of state-supported

associations of producers, covering most of the market of the relevant goods, the so-called agricultural centers

Thereby, the enhancement of agricultural mechanism of state support for production in a region and the country as a whole is a complex problem, which needs a whole set of interconnected and capital-intensive measures. These measures may include fulfilling large-scale reconstruction of the land-improvement complex, carrying out technical and technological agricultural modernization, forming modern professional agrarian education system, and creating rural areas' modern social infrastructure. Besides, it is essential to bear in mind the conditions for imposing international sanctions and active WTO norms and requirements when implementing the measures of state support for agro-industrial complex.

Acknowledgment The article is prepared with the Russian Foundation for Fundamental Research financial support: Project No. 16-12-34012 "Formation and improvement of commercialization mechanisms scientific and technical engineering in Russian regions" and Project No. 15-12-34002 "Improving the efficiency and effectiveness activity of local governments."

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Risk Management as a Factor of Sustainable Development of Enterprise

Nadezhda A. Serebryakova, Tatiana A. Volkova, and Svetlana A. Volkova

Abstract This chapter deals with the issues of interconnection between sustainable development of enterprise and the applied system of risk management. The content of sustainable development of enterprise is viewed, a proprietary definition is given, and main conditions for its achievement are determined. A logical scheme, which reflects the main stages of formation of the system of sustainable development, is given. The necessity for development of the system of risk management for the purpose of provision of sustainable development of enterprise is substantiated. Based on the performed research, a concept of preemptive risk management is offered which allows determining the probability of their manifestation and the level of influence and taking appropriate measures. Tools for evaluation of risks of sustainability of functioning and development of enterprise and of their management are given. The list of the viewed methods will allow compiling an action plan for minimization of unfavorable influences and increase of enterprise's sustainability. It is concluded that sustainable development and stable state of economic subjects in modern conditions are determined by their capability for timely reaction to change of conditions of environment of functioning.

Development of globalization processes and growing competitive struggle set among the high-priority tasks the provision of sustainable development of entrepreneurial structures.

Transition to the concept of sustainable development makes an entrepreneur reduce costs of his activities, increase profit, and renew the assets and capital on new scientific and technological and organizational basis. Thus, methods and tools

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool*

of Global Crisis Management, Contributions to Economics,

DOI 10.1007/978-3-319-60696-5_19

of sustainable development are the most important methodological basis of self-regulation of activities of entrepreneurial structures under the conditions of unstable situation, which supposes transition from struggle against prevention of influence of specific negative factors and crisis phenomena to complex management of sustainable development.

Sustainable development of enterprise is its capability to function effectively and timely prevent undesired deviations from the set strategic goals at any stage of the life cycle, under the influence of external and internal factors.

Sustainability of functioning and development of enterprise is formed under the influence of a range of factors of internal and external environment. They could be divided into economic and noneconomic (political, legal, and ecological) which, in their turn, could be direct and indirect—as to methods of influence. Their proportion, level of influence, interaction, and interconnection are important for both specific economic objects and the whole economic system.

On the whole, external factors that influence sustainability of enterprise characterize economic conditions of conduct of economic activities. If economy is in unstable state, it is reflected on the state of specific economic entity. At that, the level of influence of external factors depends on the internal state of enterprise (resource base, management professionalism, personnel qualification, social atmosphere, etc., due to which enterprise can successfully cope with external crisis phenomena or, on the contrary, react to them with strengthening of negative consequences (Endovitskaya and Volkova 2015). Thus, the capability of economic subject to overcome crises and preserve its sustainability largely depends on the actions of a group of internal factors—on the state of its internal environment.

The decisive internal factors are sectorial belonging of enterprise, assortment and structure of the issued products, possibility for diversification of activities, volume of own capital, possibility for attraction of borrowed assets, volume and dynamics of expenses, capability of economic subject to generate profit, and a lot of other factors.

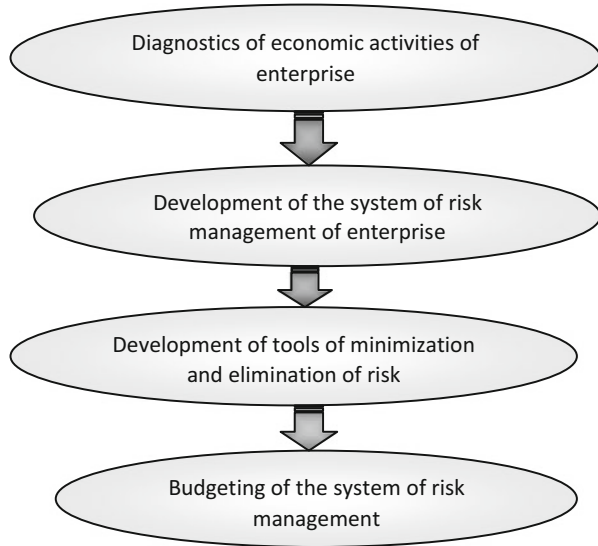
Unsustainable state of enterprise is, as a rule, a consequence of joint action of internal and external factors. At that, it should be noted that results of research of many economists show that it is internal factors that perform decisive influence and aggravate influence on sustainability enterprise from external factors.

Sustainable development supposes not only struggle with prevention of influence of specific negative factors but complex management of development of enterprise on the basis of risk management system. Risk management is the most effective method of not only analysis and evaluation of the state but of operative influence on improvement of economic sustainability of enterprise.

Based on the analysis and generalization of provisions of a range of scientific sources, the following succession of creation of the system of provision of sustainable enterprise on the basis of risk management is determined (Fig. 1).

Such system could be applied for evaluation of achieved results of the work for management of sustainability of enterprise and during the process of risk management at the stage of selection of alternative methods of influence or opposition to risk.

Fig. 1 Stages of creation of the system of economic sustainability of enterprises



The value of risk management grows substantially with the growth and development of the enterprise, with it achieving a certain level of business maturity, and accumulation of capitalized cost which could be lost due to realization of risk situations.

At that, specific tasks in the sphere of risk management of enterprise are determined depending on the targeted settings and management's attitude to risk on the basis of existing resources.

Economic tasks of risk management of enterprise are primarily aimed at preservation of economic sustainability and search for such methods, forms, and tools of decision making which will allow enterprise to survive in unstable environment and preserve economic sustainability.

Risk management is a system of procedures and technologies of making and realizing the managerial decisions aimed at reduction of risks and establishment of sustainability of enterprise. Therefore, risk management is defined as a system of management of economic—primarily, financial—relations at enterprise under the conditions of risk and uncertainty. It should be noted that risk management is not an end in itself but has supplementary character as to main activities of organization. It is one of the means that help the enterprise to achieve the set goals. Besides, the use of technologies of risk management cannot fully free the enterprise from risks and allows a possibility of unfavorable consequences of risks.

Risk management of enterprise is a system that unites persons who make decisions and executives and sets the order of their cooperation (connection).

Regardless of the specific mechanism, the process of risk management always supposes receipt, transition, processing, and use of information: statistical, economic, commercial, financial, etc. Information can be related to financial sustainability and financial solvency of enterprise's contractors, prices and tariffs,

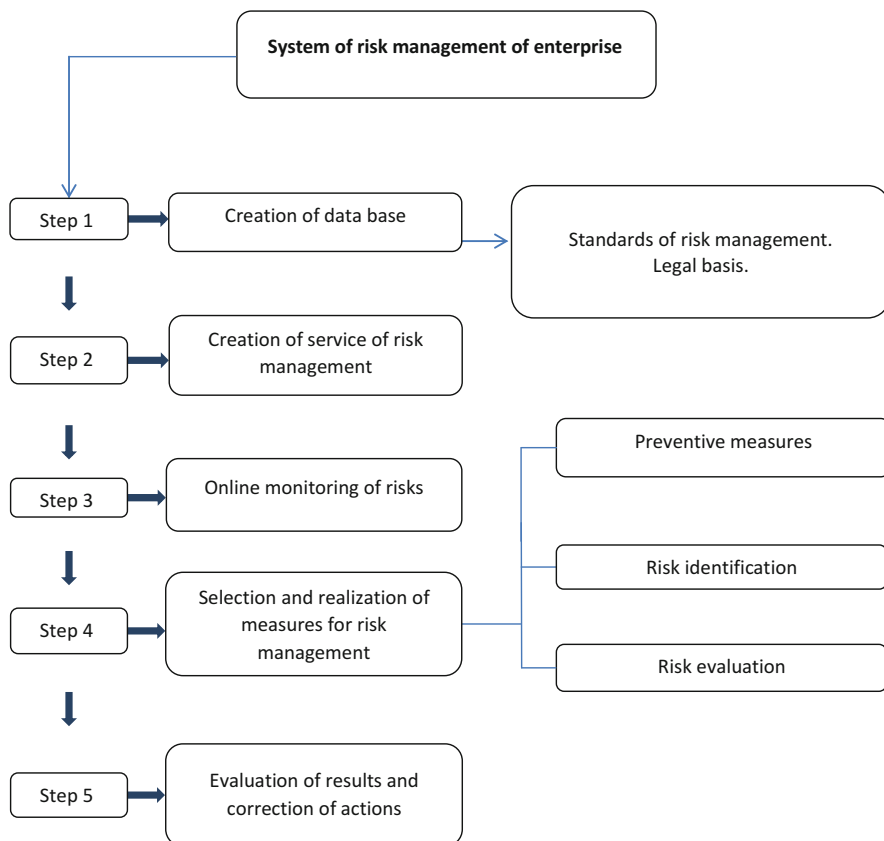


Fig. 2 Algorithm of creation of the system of risk management of enterprise

dividend and interest, situation with markets, information regarding demand for capital, material resources, etc.

Ideally, risk management should cover all types of activities of enterprise which influence profit in any way. In its turn, it sets certain requirement to organization of business processes and organizational structure of enterprise.

The offered algorithm of building the system of risk management is a key element of the strategy of sustainable development (Fig. 2).

Measures for improvement of risk management and methods of protection of commercial enterprises from risks include methodological provision of implementation and integration of risk management into the system of management of enterprise which includes the following stages:

1. Identification of risks by enterprise's employees at all levels of management: employee—department—top manager.
2. Analysis of factors and consequences of realization of risks and formation of risk "chains," based on causal connection between factors and consequences.

3. Conduct of quantitative evaluation of risks according to existing or new methodologies.
4. Determination of the level of influence of risks on indicators of economic activities of enterprise and budget parameters.
5. Consolidation of risks of the level of structural subdivisions (projects) to risks of enterprise level.
6. Comparison of risks and their factors with business processes of enterprise and determination of managers from top managers who are to bear responsibility for management of risks at the level of enterprise.
7. Development by employees, who bear the responsibility for risk management, of the measures for reduction of risks and determination of their cost and effect from realization.
8. Comparing the value of risk to cost of measures for its reduction and making a decision on expediency of performance of the measures.
9. Development of calendar plan for performance of measures and organization of the system of periodic accounting during performance of measures.
10. Control over performance of measures for reduction of risks, including reports from managers, who are responsible for risk management, for management bodies of enterprise.
11. Organization of monitoring of risks regarding which the decision was made on inexpediency of performance of measures for their reduction. The process of monitoring allows using the methods of its reduction in case of signals of risk growth.
12. Formation of reports on risks and measures for their reduction for management bodies of enterprise and evaluation of effectiveness of management procedures according to the set criteria.

During the formation of the system of risk management, the choice of the strategy of risk management is very important. The selected strategy influences instrumentarium of management.

It is possible to distinguish three main approaches to risk management: static (classical), dynamic, and preemptive. The main idea of static (classic) approach is adaptation to new conditions. An obvious advantage of such an approach is simplicity. It is good for short-term economic projects which contain pure risks (risks-threats).

Dynamic approach to risk management supposes active use of risks-resources as possibilities for the development of enterprise and increase of its market cost. Risk management on the basis of dynamic concept should be used in long-term financial operations. The processes in them are rather inertial, which allows an entrepreneur to track the situation online and react adequately to any changes.

Preemptive management is based on management subject's monitoring and forecasting the changes of external environment for the purpose of determination of emerging tendencies and development of managing influence. The influence is aimed at change of initial conditions of enterprise's functioning, which would prevent losses, provide achievement and preservation of sustainability of its

functioning, and lead to growth of market cost. Based on the above, we think that development of this direction in risk management corresponds the most to reality of economic life and is very perspective (Tamoshina et al. 2006).

Emergence of risks in activities of enterprise and their level depend on the stage of life cycle of the enterprise. At the stage of stable and sustainable work, routine risk management could be applied, which combines procedures and measures performed as current managerial work (Smolyanova and Serebryakova 2012). In crisis situations, situational risk management is used.

Management of risks (risk management) of enterprise is built differently during the production cycle, as risks at the stage of production and realization of products are different. For industrial enterprise, analysis of risk management at the stage of production and realization of products are equally important (Tinyakova and Volkova 2012).

Successful realization of risk management in enterprise requires intracompany and external infrastructure, which includes regulatory and administrative documents, database and system for processing of knowledge and data, training of personnel, technical base, and R&D.

Practical application of this system of evaluation of effectiveness is most expedient at the following stages of management of risks (Fig. 3).

Forms and methods of organization of risk management at specific enterprise largely depend on the level of development of the sphere of risk insurance and the share of insured risks in the total cost of entrepreneurial risks which threaten this enterprise.

The model of organization of risk management depends on the level of importance for specific enterprise of the problem of solving the risk (evasion, keeping, transfer) and the problem of reduction of the risk level (management of quality, diversification, hedging, and management of capital).

Identification and evaluation of risks and evaluation of related possible losses, performed by risk management, allow conducting analysis of risks and receiving

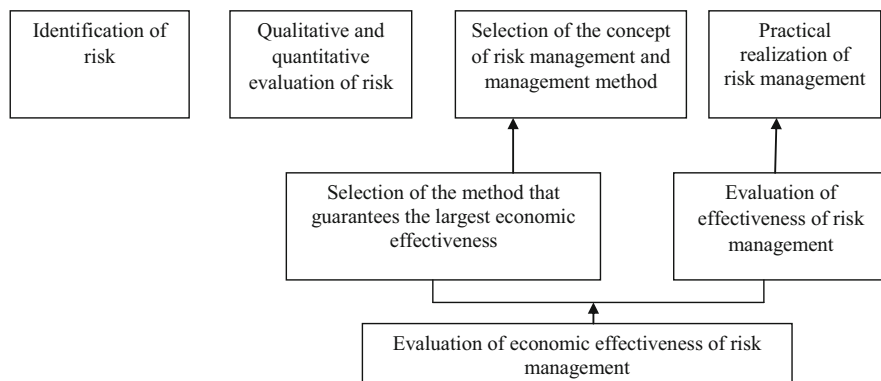


Fig. 3 Procedure of making a decision on evaluation of effectiveness of management of risks

Table 1 Tools of management of risks and increase of sustainability of enterprise

Tools of increase of sustainability of enterprise	
Economic	Improvement of methods of management of assets; forecasting and strategic and tactical planning
Social	Creation of conditions for efficient labor; increase of salary according to the growth of production effectiveness. Application of methods of nonmaterial stimulation of labor
Financial	Improvement of the structure of capital, modernization of the policy of management of turnover assets, use of financial tools
HR	HR policy, aimed at development of human capital and increase of personnel qualification
Innovational	Development and implementation into production of new technologies, manufacture of innovational products, and highly efficient production means. Reduction of consumption of materials by means of implementation of new technologies
Organizational and economic	Expansion of sales markets; internal control over execution of contracts
Production	Modernization of main funds and production means

information necessary for development of specific decisions on risk management (Serebryakova 2013).

Even in similar situations, reaction to risk management of enterprise differs depending on attitude to risks. Attitude to risks is formed on the basis of the level of threat to enterprise. As in each specific period of time, resources of enterprise are limited, it is necessary to rank risks as to the level of their danger for enterprise and making a decision on turn of reaction to risks, as well as selection of the most critical risks.

The tools of management of risks and increase of sustainability of enterprise are shown in Table 1.

Therefore, sustainable functioning and development of economic subjects under the conditions of market economy is determined by their capability to timely and adequately react to changes of external and internal environment, which is expressed in indicators that characterize sustainability (Endovitskaya and Volkova 2015).

The most important criterion of effectiveness of the applied system of risk management is preservation of stability of the studied indicators of activities of enterprise, which means that risk situation and realization of its consequences do not lead to significant change of the key indicators. Reduction of indicators of effectiveness of activities would be a sign of reduction of economic sustainability of enterprise. For enterprise, it is a more important indicator of sustainability than the indicator of preservation of volumes of profit (Bogomolova et al. 2013). Fighting for this indicator, an enterprise would venture higher expenses for insurance or prevention of risks. Targeted indicators and quantity of the studied periods, during which they have to be stable, are determined by top management of the enterprise on the basis of the strategy of development.

The authors have substantiated the minimum set of requirements to the systems of risk management at enterprises:

- Targeted and constant tracking of threats and risks faced by enterprise in the process of its work. If possible—establishment of interconnections between risk factors and levels of specific risks;
- Evaluation of probability and consequences of emergence and realization of risks;
- Formation of principles, methods, and instrumentarium of management of risks;
- Establishment of risk limits and risk compensations, accepted by enterprise, as well as control for the risk to be within the set limits;
- Informing enterprise's employees of the accepted risk value;
- Development of recommendations for formation of the strategy and effective distribution of resources in view of the risk level;
- Completeness and timeliness of reflection of risk values in documents of managerial accounting.

These recommendations are brought down to complete evaluation and control over the risks. Thus, solving the task of provision of sustainability of functioning and development of enterprise could be realized effectively on the basis of application of technologies of risk management.

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Part II
Perspectives of Eliminating the
Institutional Traps Within the Global
Crisis Management

Factor of Formation of Innovational Potential of Employees of Scientific and Technical and Industrial Sphere

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Abstract This chapter views the problems of realization of innovational potential of employees of industrial and scientific and technical sphere. Methodological basis for the research includes the works of foreign scientists in which two models of innovational behavior of employees are presented. The rational model is based on active participation of employees in innovational changes, which gives material profit to employee and company. The symbolic model of innovational development emphasizes the value of public recognition as a stimulus of innovational behavior.

The symbolic model of innovational behavior is applicable to modern Russian conditions. The authors pay attention to educational status as a factor of formation of innovational potential of employees of industrial and scientific and technical spheres. Based on the results of empirical research, analysis of influence of educational characteristics of respondents on the attitude to profession, ideas on prestigious employment, and participation in innovations is conducted.

JEL Classification Codes A14 • O11 • O31

1 Introduction

Under the conditions of modernization of Russian industrial sphere, a lot of complex and contradictory processes take place. According to the experts, the task of creation of postindustrial economy in Russia by 2025 is very difficult. Over the recent 20 years, Russian economy returned to pre-industrial age: the share of processing industry in gross added value reduced from 22 to 16% and share of machine building—from 9 to 1% (Astakhova 2011). Fifteen years of a new

The work was performed within the Project No. 383: “Employees of industrial and scientific and technical spheres in the conditions of monotown (by the example of sociological analysis of Tolyatti)”.

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_20

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millennium are connected to the processes of economy and industry's restructuring for innovational rails. These novelties suppose change of requirements to employees, their qualification, discipline, system of labor skills, and loyalty toward management.

2 Research Methodology

In the Russian science, the category "innovational potential" is developed by Russian scientists in the context of solving the problems of economy or management. From the point of view of management, realization of innovational potential is creation of favorable conditions for the development and implementation of innovations and increase of effectiveness of resources use. Innovational potential is treated as unused and hidden possibilities of accumulated resources which could be used for achieving the goals of economic subjects in view of regional peculiarities (Utkin 1996, p. 207; Gunin et al. 2000, p. 34; Gamidov et al. 2000). These ambiguous treatments of the term "innovational potential" lead to the formation of a complex picture during evaluation of situation in various regions (Polutin and Sedletskiy 2010, p. 114).

In foreign sources, the notion "innovational potential" crosses the notion "innovational behavior of employees." Realization of strategies of innovational development of organizations requires stimulation of innovational behavior of employees (Yuan and Woodman 2010).

Foreign researchers P. Jong and D. Hartog view employees' capabilities for innovations as a factor of organization's main capital. Employees' contribution into realization of innovational potential of organization is expressed in the capability to introduce and realize new ideas for increase of product quality and production effectiveness and improvement of service (Jong and Den Hartog 2007). Realization of human capital value allows organizations to achieve high results in competitive struggle.

According to a range of foreign researchers, the notion "innovational behavior" has interdisciplinary character. It is studied within psychology, sociology, and management. Some scholars view innovational behavior as personal characteristics of a human. It is a consequence of realization of person's creative potential, including the capability for creativity (West 1987). Other scientists consider that innovational effect appears under the influence of stimuli of external environment. These concepts of innovational behavior develop in the spirit of behaviorism (Janssen 2005).

Innovational behavior of employees is viewed as a category that opens the stages of innovational process. It includes the stages of promotion of new ideas and their realization (King and Anderson 2002). Eventually, it raises effectiveness of work of particular employees, departments, or organization on the whole (West and Farr 1990). Evaluation of innovational behavior is performed from positions of real or expected consequences (Vroom 1964).

American researchers note that innovational behavior could be aimed at creation of new technologies, search for new means of achievement of goals, use of new resources, and improvement of methods of professional activities (Yuan and Woodman 2010).

During explanation of employees' innovational behavior, two models of behavior are used: rational and symbolic. Distinguishing them is based on the idea of necessity for innovations for satisfaction of material needs and formation and support for social statuses.

Another popular opinion in the Western science is the one that explains innovational behavior of employees on the basis of the rational model. According to this approach to explanation of innovational behavior, the profit from implementation of innovations received by an employee is also the profit for organization (Yuan and Woodman 2010).

The second approach is based on the concept of symbolic interaction. Innovational behavior supposes using symbols of social status. It characterizes following the models approved by the people. This model of behavior supposes showing initiative in implementation of new methods of activities which increase its quality and effectiveness (Yuan and Woodman 2010). Some foreign authors emphasize the meaning of the creativity factor in innovational behavior. This is manifested in introduction of new ideas which could be applied usefully (Scott and Bruce 1994).

3 Research Hypothesis

Analysis of methodological approaches to study of innovational behavior of employees allows offering a hypothesis that a social factor that determines participation in innovations is the level of employees' education. Education becomes a social value and an inseparable part of life activities of any Russian, thus forming the principles of meritocracy. Under these conditions, a new class appears which could be called "class of intellectuals" (Inozemtsev 1999).

4 Model of Empirical Research

Under the modern Russian conditions, processes of modernization of economy show deep contradictions between the necessity for development and implementation of innovations and real conditions of their achievement. These contradictions are expressed in formation and realization of innovational potential of engineering and technical employees (Menshikova 2006).

In February–March 2014, employees and students of the chair "Sociology" of Tolyatti State University conducted a survey of employees of industrial enterprises, R&D departments, and educational establishments who were involved in training of

engineering personnel, for the purpose of study of the role of higher education in formation and realization of social and labor potential.

Five hundred and fifty-one respondents aged 20–60 were questioned. These age limits were selected for studying opinions of people characterized by the higher capabilities for conduct of labor activities. The survey was conducted among the residents of Tolyatti who had full-time jobs. The survey was performed on the basis of quota proportional selection according to the place of residence of respondents. This model of selection allows distributing the data within the representative error $\pm 5\%$ for the significance level 0.05 within the scale of Tolyatti. The data was processed with the program SPSS-20.

As for respondents, 49% of them were men and 51%—women. Distribution for sex depending on the type of enterprise has the following form.

According to the proportional model of selection for age, respondents were distributed into four age groups: 20–30, 31–40, 41–50, and 51–60, each with approx. 25% share. During description of tables, enlarged age intervals 20–40 and 41–60 were used.

5 Results of the Research

The professional structure of the respondents is the following: 50%—qualified workers; 25%—engineering and technical specialists; 7%—employees of scientific and technical departments of enterprises and universities; 6%—managers at industrial enterprises, technical chairs in universities, etc.; 7%—non-qualified employees and supplementary personnel in technical sphere.

Educational status of the respondents is related to the type of enterprise at which they work. Specifics of monotown conditions are expressed in the fact that a large share of able-bodied population work at a strategic enterprise. Public conscience of the city population is largely determined by social settings of AvtoVAZ employees.

During analysis of answers to the question “To what extent does your work correspond to education you received?”, the following distribution was received.

One-third of the respondents work in the specialty they took in the professional educational establishment. This variant of answer among respondents of older age group is met more often than among the others. One-third of the respondents replied that they work in an adjacent sphere. Thirty-one percent of the respondents do not work in the specialty. This variant of answer among respondents of the group aged before 40 is met more often than among the others.

Depending on participation in innovational measures, respondents were divided into two groups based on the results of respondents’ reply to the question, “What is your personal participation in development of innovations?” The respondents mentioned several variants of answer. The first group includes participants of innovations. Among them, 2% are developers of a scientific project with innovational effect; 2% are involved in inventions and rationalization, 8% are employees of the structure that implements innovations; 3% respondents are managers of

enterprise or specialists who implement innovations, 2% are managers of a scientific group in which innovations are implemented. The second group includes respondents who chose the answer “Not involved in development and implementation of innovations”; it includes 78% of the respondents.

One-third of the respondents with higher education noted that they participated in development and implementation of innovations. This indicator is 8% higher than on average for the group. The respondents without higher education choose the negative answer more often. Nowadays, it does not suffice to have engineers with good specialization in one specific sphere. They must know the basics of innovational economics and be ready to be involved in modern breakthrough technologies (Nebrenchin 2014).

Let us dwell on social characteristics of participants of innovational development.

The group of innovations participants consists of the respondents aged 40 and younger by 70%, and representatives of older generation account for 35% of the respondents.

Among the followers of innovational strategy, the number of AvtoVAZ employees is 8% smaller than the group average, but the number of private enterprises is 7% larger, and the number of state (municipal) enterprises is 4% larger. Thus, followers of innovational strategy are less related to employment at the strategic enterprise of Tolyatti.

Participants of innovations are peculiar for higher educational level. Educational characteristics of employees of this group are higher than average; among them, the number of respondents with higher education is 12% larger, and, accordingly, the number of those who graduated secondary professional schools is smaller.

According to the result of the interview with workers of technical professions, followers of innovational strategy of adaptation were involved in scientific research and scientific and technical creativity during the time in a university. Evaluation by the followers of innovational adaptation of the workplace equipment and possibility of application of knowledge received in a university constitutes 3.7 points. It is higher than the average indicator of 3.4 points.

Regarding the factors that stimulate receipt of good job in technical sphere, the followers of innovational strategy mention skills of work with IT (by 15% more often) and foreign languages (6%). These skills are necessary for work at high-tech production which are created with the participation of foreign investors.

Regarding the attractive sides of the profession, the followers of innovational strategy mention intellectual character of the profession (by 13% more often) and a possibility to realize their skills (by 9% more often).

Participants of innovations are peculiar for higher satisfaction with work conditions. However, representatives of this group evaluate the workplace and possibility to use the knowledge received in a university at the level of 3.7 points. It is higher than the average level for the group (3.4 points).

Satisfaction with wages and career growth of the followers of innovational adaptation constitutes 3.2 points, while the average level for the group is 2.9 points. Satisfaction with wages and career growth constitutes 2.9 points, and this indicator

depends on the sphere of age characteristics of the respondents and on work experience. The respondents with higher education express satisfaction with wages and career growth at the level of 3.2 points, and the respondents without higher education—2.7 points.

6 Conclusions

The results of the research prove the tendencies that were determined in the works of Russian sociologists over the recent decades. The structure of values of industrial enterprises' employees changes. At the initial period of reforms, there were hopes that new economic relations would change the workers' attitude toward labor. However, there were no cardinal transformations in the structure of labor values. According to the results of the research, instrumental values go to the foreground (Temnitskiy 2008). Comparative data of international research show that the level of satisfaction of Russian workers with labor conditions is one of the lowest in Europe (Monusova 2008).

When viewing realization of innovational potential from positions of rational and symbolic models that were considered earlier, it is necessary to note vivid domination of the second model. Participation in innovations is supported by official ideology—however, it is poorly stimulated in terms of money. Low indicators of satisfaction with various aspects of labor—especially, with wages—reduce possibilities of innovational activity of employees.

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Methodological Approaches to Strategizing of Cluster Development: Diagnostics and Evaluation of Effectiveness

Irina S. Ferova and Ekaterina N. Tanenkova

Abstract The article views a possibility for application of cluster approach at the regional level. The authors offer criteria which characterize current and strategic competitiveness of the cluster and could be a landmark for development of economic policy at the regional level. Evaluation of cluster's profile is conducted on the basis of the matrix of correspondence of these types of competitiveness. According to criterial indicators of qualitative development of the region, basic blocks and indicators of cluster functioning effectiveness are offered. The algorithm of calculation of integral complex evaluation of the profile and effectiveness of cluster is shown.

JEL Classification O18 • O21

1 Introduction

At present, the global economy faces the task of overcoming the crisis and entering the trajectory of economic growth, based on the increase of competitiveness of economy on the whole and its separate components. Thus, significance of the theory and practice of strategic planning and management grows.

The sense of the theory of strategic management consists in determination of sources and mechanisms of creation and provision of **sustainable competitive advantages**, which provide economic profits that are inaccessible to large rivals. These goals correspond to such tool of economic and territorial policy as cluster model of M. Porter (Porter 2000; Best 2001).

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2 Materials and Methods

2.1 *Problems and Possibilities of Cluster Policy Evaluation*

Necessity to take into account high rate of changes of external environment leads to companies' need for constant adaptation—in order to be effective and lead competition. Such criterion of effectiveness as revenues' exceeding expenses due to entrepreneurial activities states the fact of enterprise's successfulness in the studied period, not guaranteeing it in the planned period. Therefore, traditional treatment of effectiveness of activities as a ratio of result to expenses could be associated only with short-term competitiveness or competitiveness in static environment (Porter 2001). Therefore, for enterprise to be competitive in the long term under the conditions of dynamically changing environment, not static possession of some competitive advantages that generate income as of now is required but a possibility to acquire necessary competitive advantages at the moment (Bergman and Charles 2001; Baptista 2000). This task corresponds to cluster model of development of territory, as it is a tool allowing for creation of new competitive advantages.

That's why this work studies existing methods of evaluation of cluster policy and enumerates methodological and conceptual problems related to application of cluster approach (Rosenfeld 2005).

The problems are a succession (Table 1) that corresponds to stages of evaluation and “products” emerging at each stage.

It is necessary to develop special methods of evaluation for each type of competitive advantages, e.g., (three main sources of advantages) special level of qualification, technological infrastructure necessary for innovational capability of cluster, or system of business support that allows new companies to join the cluster (Enright 2001).

2.2 *Establishment of Connections Between Cluster Activities and Its Influence on Territory's Development*

In order to show the differences between cluster policy and policy of territorial development, it is possible to distinguish various “methods of influence” for these types of policy. The sense of policy usually consists in conduct of a series of projects (or measures) which joint influence goes from sub-macro-level (at which separate enterprises or large groups of them, like cluster, are located) to macro-level (Cooke and Morgan 1998). An essential difference between cluster policy and other types of policy of spatial development consists in importance of intermediary meso-level at which clusters operate (Krugman 1991). It should be noted that the purpose of cluster policy is influenced on targeted clusters, not at separate companies or region's economy on the whole. Its influence on the territorial economy takes place due to effects of overflow that emerge in clusters.

Table 1 Problems of evaluation of cluster policy

Policy stages	Stage problems	
Policy goals	Determination of clusters	
Policy products	Measuring cluster activities for network emergence	
Policy results (micro)	Influence of network entities on activities of a separate company	
Policy results (macro)	Influence of cluster work on economic development of the region	Comparing results of work of various clusters

Traditional policy of territory’s development is based on the principle of aggregation which is unsuitable for cluster policy due to several reasons. Firstly, support for cluster development may lead to changes in distribution of economic activity, which is usually not envisaged by other types of policy of territory’s development. Acceleration of cluster growth may lead to emergence of deficit of the most important resources for this territory, causing “chain reaction” to this phenomenon in other regions (Gordon and McCann 2000; Brown 2000).

Secondly, special distribution of clusters may strengthen inequality of region’s development. For a long time now, policy of territorial development has been faced by the choice between economic effectiveness and equality. This is a dilemma between conduct of policy aimed at provision of growth on the whole with the help of the most effective (profitable) methods (leading to strengthening of inequality between more and less developed regions) and conduct of the policy aimed at development of certain territories in economy (based on ideas of economic and social justice) (Feldman 2000).

Therefore, the role of evaluation in this case consists not only in determining the growth in clusters but in determining positive influence of this growth on the region’s economy (Ellison and Glaeser 1997). Table 2 shows possible ways for determination of these effects.

2.3 Comparison of Various Types of Cluster Activities

When cluster policy includes support for many spheres of cluster creation, there is a last problem of evaluation of policy’s efficiency—comparing effectiveness of the resource use for various forms of support. For many forms of cluster policy, this support is related only to one cluster which is distributed between groups of cluster on a competition basis. In certain cases, cluster policy consists of several simultaneously conducted programs of support, the purpose of which is totality of previously selected clusters (Feser and Sweeney 2002).

As a result, various types of clusters require various goals, criteria of development, and growth rates. This is manifested only during comparing the values of the

Table 2 Evaluation of influence of cluster development on territory development

Cluster's influence on surrounding territory	Measured influence	Methods of measurement
Distribution of resources	Changes in expenses (accessibility) for resources in other parts of economy	Studies of companies which are not parts of cluster Analysis of resources' cost
Spatial concentration of growth	Spatial distribution of growth effects that are related to cluster	Analysis the growth scheme at the subregional level
Effects of territory's overflow	Directs (indirect) effects of cluster growth on other components of economy	Studies of companies related or not related to cluster Compilation of inter-sectorial balance

same indicators and during selection of the indicators (Feser and Sweeney 2000; Feser et al. 2001).

A second group of problems faced by researchers consists in the fact that there's necessity not only to view the facts that are related to selected clustering spheres but the facts that are not related to the conducted policy (e.g., whether the development of these clusters change under the influence of the conducted) but also take into account additional data directly related to the conducted policy (e.g., whether it is necessary to provide support for other clusters together with them or instead of them) (Bergman and Feser 1999).

3 Results

The result of the research, the purpose of which is realization of the formalized approach to complex evaluation of the level of cluster effectiveness, is methodology of assessment of cluster policy in the region. The offered approach is based on calculation of the system of interconnected indicators. Each of them is specific for a cluster form.

In our opinion, it is necessary to distinguish two stages of determination of cluster effectiveness.

The first type supposes evaluation of a possibility (profile) of cluster development, while the second stage is aimed at determination of effectiveness.

The notion of profile integrates two aspects: current and strategic competitiveness.

Evaluation of current competitiveness is based on determination of influence that cluster performs on criterial indicators of socioeconomic development (Martin 2001).

At that, the basis includes the following set of criterial indicators of quality of economic complex of the territory which is a landmark for economic policy on the whole and shows its state and growth potential of region's economy (Enright 1990):

- Level of population's employment (availability of jobs as to the number of active population, unemployment level)
- Economic provision of living standards (level of income of enterprise's employees, GRP per capita, budget revenue per capita)
- Level of income differentiation (differentiation of income, share of population with income that is lower than living wage)
- Growth of GRP
- Growth of labor efficiency
- Complexity of economy, internal additional interconnections
- Sustainability (environmental compatibility) of economy
- Dynamics of development (investments per capita, growth of number of jobs, growth of GRP per capita)

Accordingly, evaluation of current competitiveness of cluster for a particular region may use the following factors that reflect the above criteria:

1. Support for general employment
2. Support for employment of targeted groups
3. Support for growth of living standards
4. Support for growth of income and reduction of budget expenses
5. Support for growth of accompanying spheres
6. Growth of labor efficiency
7. Influence on environment
8. Use of new technologies, renewal of funds
9. Support for general economic growth

Each factor is assigned a score according to the following scale: (–2), very low; (–1), low; (0), medium; (+1), high; and (+2) very high.

The following stage includes analysis and evaluation of strategic competitiveness of the above clusters in the region. Factors that are viewed during evaluation include the following (Feser 1998a,b; Weber 1995):

- Change of expenses for scientific research
- Change of the share of innovation-active organizations
- Capability for renewal
- Presence of foreign companies
- Growth of export volumes
- Increase of new products
- Change of the share of cluster in GRP
- Change of the share of cluster in the global market

Each factor has to be assigned with weight coefficients, used during development of composite estimates. Weight coefficients could be received on the basis of expert evaluations.

Table 3 Matrix of correspondence of competitiveness scores

Evaluation summary of strategic competitiveness	Evaluation summary of current competitiveness				
	+2	+1	0	-1	-2
+2	NC	HC	HC	N	N
+1	HC	HC	HC	N	N
0	PC	PC	N	N	NC
-1	PC	PC	N	NC	NC
-2	PC	N	N	NC	NC

HC highly competitive clusters, *PC* potentially competitive clusters, *N* neural clusters, *NC* noncompetitive clusters

Composite estimates are calculated in view of weight coefficients in the following way:

$$I = a_1x_1 + a_2x_2 + \dots + a_nx_n \quad (1)$$

where $a_1, a_2 \dots a_n$ —weight coefficients which characterize significance of the corresponding factor
 $x_1, x_2 \dots x_n$ —factors of current or strategic competitiveness, assessed according to five-point scale and taking values (-2), (-1), (0), (+1), and (+2).

After determination of composite indicators, a conclusion regarding the level of competitiveness of this complex is made. Here we offer to use the matrix of correspondence between evaluation summary and index of final grouping (Table 3).

Weight coefficients for evaluation of clusters from the point of view of current and strategic competitiveness:

At the second stage, if the conclusion on attractiveness and possibility of development of cluster on this territory is made, effectiveness of its functioning is evaluated directly. An example is innovational and technological cluster with determination of a range of blocks which are basic ones for its evaluation.

For each of these blocks, indicators and estimate criteria are developed which are expressed in current and forecast values.

Thus, for innovational and technological cluster, it is possible to determine the following set of blocks:

- Scientific and technological and research potential
- Educational potential
- Production potential
- Development of infrastructure
- Organizational development

4 Discussion

The main sources of formation of competitive advantages of cluster approach are the following: special level of qualification, technological infrastructure, necessary for innovational capability of cluster, and system of business support (Doeringer and Tekla 1995). Formation of cluster policy and its evaluation should not be limited only by characteristics of growth rates; it is also necessary to evaluate sustainability of created clusters, as this characteristic is a key one in the short term and long term. Besides, application of cluster policy is impossible without evaluation of cluster competitiveness. Competitiveness could be evaluated according to three basic elements: sustainable position in the market, technological leadership, and capability for self-renewal. Evaluation of cluster policy allows avoiding the effect of “blocking” at which certain cluster spheres attract support within economic policy even when there are no economic foundations for it. Conduct of evaluation allows performing monitoring of clusters that receive support and tracking changes of the potential of totality of clusters from the point of view of economic development. For detailed evaluation of effectiveness of cluster policy, it is possible to use complex approach for evaluation of current and strategic competitiveness. The basis is the set of criterial indicators which characterize current and targeted socioeconomic development of the region. As a result, conclusion on cluster’s profile is made. Based on this evaluation, managerial decisions on types of support and stimulation of cluster’s development are made.

5 Conclusions

The article views the problems of evaluation of cluster policy in detail. Necessity for development of special methods of evaluation of various types of competitive advantages is proved. In part of establishment of connections between activities of cluster and territorial development, the following conclusions are made: (1) support for cluster development could lead to changes in distribution of economic activity, which is usually not envisaged by other forms of policies of territory development, and (2) special distribution of clusters could increase inequality of economic development of the region. Thus, the methodology that allows evaluating effectiveness of cluster policy is offered. The motion of effectiveness generates two aspects: cluster’s profile and direct effect from its functioning. According to this, the model that generates indicators of current and perspective competitiveness of cluster is offered. Criteria that characterize various types of competitiveness are developed. Basic blocks with a set of indicators for evaluation of cluster model’s effect are developed as an example for innovational and technological cluster.

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Effectiveness and Efficiency of Public Management of Socio-economic Processes at the City Level

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Abstract The purpose of the work is to develop theoretical and methodological foundations for provision of high effectiveness and efficiency of public management of socio-economic processes at the city level and to analyze practical aspects of their application by the example of modern city of Volgograd (Russia). Methodological instrumentarium of the paper includes specially developed proprietary methodology of determination of the level and current state of effectiveness and public management of socio-economic processes at the city level. The authors developed the model of effective public management of socio-economic processes at the city level, in which main tools of management of socio-economic processes of a city are tax policy at the city level, anti-monopoly policy, fighting against inflation at the city level, fighting against unemployment at the city level, investment policy, stimulation of entrepreneurship, and development of the system of electronic provision of state services. Approbation of the developed methodology of determination of the level and current state of effectiveness and efficiency of public management of socio-economic processes at the city level by the example of Volgograd allowed proving its practical application. As a result, the authors came to the conclusion that perspectives of increase of effectiveness of public management of socio-economic processes at the level of Volgograd are related to increase of anti-inflation measures, change of approach to accounting of the unemployed, active support for population employment, and increase of effectiveness of anti-monopoly and social policy.

JEL Classification Codes D61 • R53 • O18

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_22

1 Introduction

Globalization and international integration perform contradictory influence on modern socio-economic systems. On the one hand, this leads to their enlargement, deletion of boundaries, and strengthening of global competition. On the other hand, there is a reverse process—disintegration and decentralization of public management. Thus, there is growth of the meaning of a city as a structural item of the global and national socio-economic system.

This determines high actuality of study of specifics of management of socio-economic processes at the local level and of study of conditions and instrumentarium necessary for determination of current state and perspectives of increase of effectiveness of such management, which is studied in this article. The purpose of this work is to develop theoretical and methodological foundations of provision of high effectiveness and efficiency of public management of socio-economic processes at the level of the city and analysis of practical aspects of their application by the example of modern Volgograd (Russia).

2 Materials and Method

Public management of socio-economic processes supposes redistribution of city revenues for realization of its main needs of socio-economic development (Liu et al. 2016). The sense of such management consists in realization of general state socio-economic policy at the municipal level in view of specifics of this city (Longo and Rotolo 2016; Ryu 2016; Kravets et al. 2014; Kayl and Epinina 2013, 2014; Kayl 2013).

Effectiveness of management is its capability to show prominent results with minimal efforts (Virtanen and Vakkuri 2015). That is, the more public management stimulates achievement of the goals of socio-economic development at the city level (Gao 2015) and the less investments and costs are required, the higher the effectiveness of such management (O'Toole and Meier 2015; Popkova et al. 2013; Skiter et al. 2015).

Specifics of functioning and development of local socio-economic systems consist in their simultaneous socio-economic involvement and geopolitical isolation from the global processes (Antonioli et al. 2016). In other words, socio-economic systems at the city level take into account global tendencies within realization of public management but, at the same time, focus on their uniqueness (Soukopová et al. 2015; Popkova et al. 2015).

This work offers to use a specially developed proprietary methodology of determination of the level and current state of effectiveness and efficiency of public

management of socio-economic processes at the city level. Within this methodology, the following formula is offered:

$$E_{cl} = \text{Eff}_{cl} / \text{Exp}_{cl} \quad (1)$$

where E_{cl} —effectiveness of public management of socio-economic processes at the city level

Eff_{cl} —efficiency of public management of socio-economic processes at the city level

Exp_{cl} —expenses of public management of socio-economic processes at the city level

As is seen from formula (1), the methodology is based on classic approach to determination of effectiveness as a ratio of useful results to expenses for its achievement. The higher the value of E_{cl} indicator, the more effective is public management of socio-economic processes at the city level. For calculation of the indicator of efficiency, the formula (2) should be used, and for indicator of expenses, formula (3) should be used:

$$\text{Eff}_{cl} = \text{GCP} \times \text{GPC} \times (1 - \text{LUR}) \times (1 - \text{LIC}) \quad (2)$$

where GCP—yearly gross city product

GPC—yearly growth of gross city product per capita without inflation

LUR—level of unemployment rate

LIC—level of inflation in the city

$$\text{Exp}_{cl} = \text{VII} + \text{VNI} + \text{VFI} + \text{CPM} \quad (3)$$

VII—volume of internal investments into city economy

VNI—volume of national investments into city economy

VFI—volume of foreign investments into city economy

CPM—costs of public management of city

3 Results

Based on a range of empirical studies, the authors of the article developed the corresponding scale. If the value of the indicator $E_{cl} < 4$, this shows ineffectiveness of public management of socio-economic processes at the city level. If the value of indicator $4 \leq E_{cl} \leq 8$, this shows low effectiveness of such management. If the value of the indicator $E_{cl} > 8$, this shows high effectiveness of public management.

For achievement of high indicators of effectiveness of public management of socio-economic processes at the city level, this work offers the corresponding model (Fig. 1).

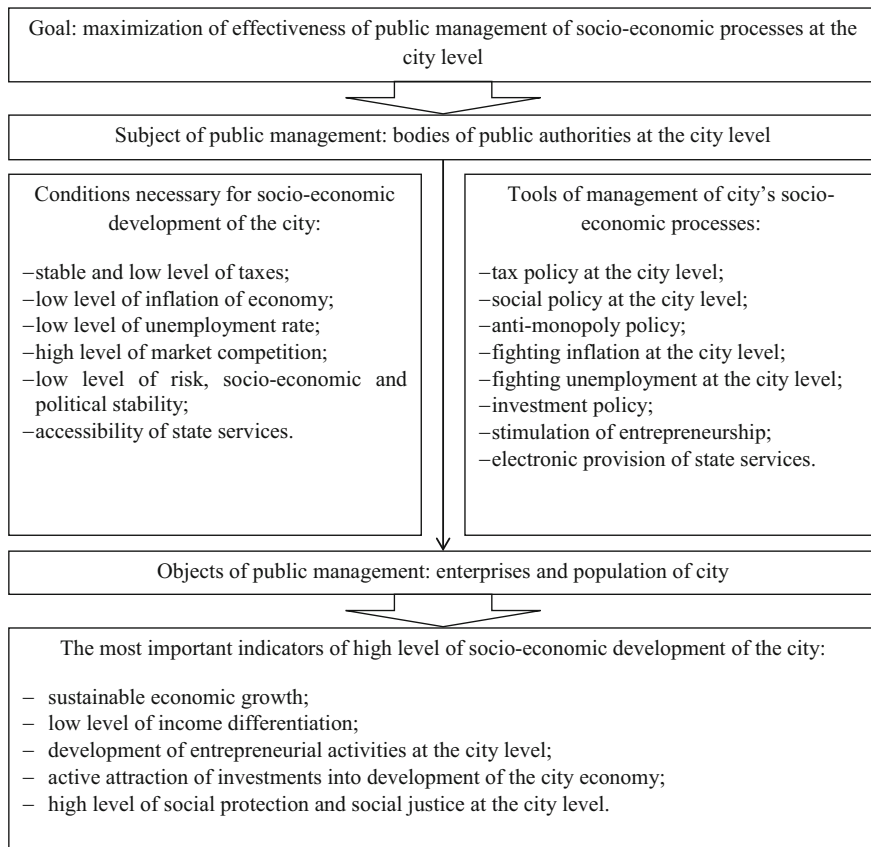


Fig. 1 Model of effective public management of socio-economic processes at the city level

According to the official statistical information of the Department of Economic Development of Volgograd administration for 2015, the volume of gross city product in Volgograd constituted RUB 788,901.3 million in 2015. Unemployment rate in the city constituted 0.98%. Inflation rate in 2015 constituted 13.2%. Yearly growth of gross city product per capita constituted 6%. However, in view of inflation, it reduced by 7% (Department of Economic Development. . . 2015).

This allows calculating the indicator of efficiency of public management of socio-economic processes at the level of Volgograd in 2015:

$$\begin{aligned} \text{Eff}_{\text{cl(Volg2015)}} &= 788,901.3 \times 0.93 \times (1 - 0.01) \times (1 - 0.13) \\ &= \text{RUB } 631,917 \text{ million.} \end{aligned}$$

Let us calculate the indicator of expenditures of public management of socio-economic processes at the level of Volgograd in 2015:

$$\begin{aligned} \text{Exp}_{\text{cl(Volg2015)}} &= 94,834.5 + 6,354.6 + 7,019.1 + 16,188.7 \\ &= \text{RUB } 124,397 \text{ million.} \end{aligned}$$

Based on the received indicators of efficiency and expenditures, let us perform calculation of indicator of effectiveness of public management of socio-economic processes at the level of Volgograd:

$$E_{\text{cl(Volg2015)}} = 631,917/124,397 = 5.1.$$

The obtained value of the indicator E_{cl} is in the interval 4–8, which shows low effectiveness of public management of socio-economic processes at the level of Volgograd. As a result of deeper analysis, the authors of this article found out that the most important reasons for existing situation are galloping inflation, low entrepreneurial activity in the city, and low investment attractiveness of the city economy.

4 Conclusion

It should be noted that within national economy at the municipal level, it is possible to determine general regularities of socio-economic development. That's why the results of the research and experience of Volgograd could be distributed to many other cities of modern Russia.

Approbation of the developed methodology of determination of the level and current state of effectiveness and efficiency of public management of socio-economic processes at the city level by the example of Volgograd allowed proving its practical application.

However, its application only at one empirical object for a single period of time does not allow determining the capability of this methodology to compare effectiveness of public management of a city in dynamics and comparing the effectiveness of management of various cities, which limits the results of the conducted research.

Further perspectives of development of the concept of state municipal management are related to accumulation and systematization of the results of a series of empirical studies for building a complex picture of socio-economic development at the municipal level.

Acknowledgments The study was performed with financial support of RFBR and the Volgograd region within the framework of the scientific project №16-12-34014 “Mechanisms of enhancing the effectiveness and efficiency public management of social and economic processes in the city in the comfort and energy performance life of the population.”

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Characteristics of Convergence Processes of Urban and Rural Population of Russia

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Abstract The article views characteristics of the processes of convergence of urban and rural population of Russian territories. Based on official statistical data of the Federal State Statistics Service, the authors have conducted analysis of dynamics and structure of the number of population, main indicators of natural movement of Russian population on the whole and distribution on urban and rural territories. Based on correlation and regression analysis with application of economic and mathematical instrumentarium, factors influencing the birth level in Russia are determined: population's income per capita, number of families that received maternity capital, number of marriages and divorces, total number of births, and the number of Russians. The expected life span at birth is analyzed: differences between average life span of women and men, as well as urban and rural population, are analyzed. This fact is related to the difference in development of infrastructure of rural and urban population. The main directions of convergence of development of urban and rural territories are determined, the main goal of which is increase of the level and quality of population's life, as well as creation of conditions for improvement of sociodemographic situation of Russian population.

1 Introduction

Over many decades, the main subject of study of humanitarian, social, and other sciences were subjective and objective relation and interrelations. However, in the twenty-first century, a special role belongs to interactions in the system “subject-environment,” including “inhabitant-environment.” The importance of environmental approach to the study of the problems of convergence of urban and rural population of Russia is determined by the fact that human exists in the process of living activities, which is treated as its active, conscious, and everyday interaction with the environment in the process of labor and leisure (Staroverova and Medvedev 2014).

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Special role in them belongs to provision of food security of the country; reproduction of labor resources; preservation of traditions, original national culture, and national traditions; and acquisition of natural resources (Merkulova and Moskovtsev 2015). Undoubtedly, rural territories have a recreational function of creating conditions for restoration of health and leisure for urban and rural population. Rural territories are a basis for production and maintenance of engineering communications (roads, power lines, oil and gas pipelines) (Greshonkov and Merkulova 2014). From the political point of view, rural territory is a basis of stability and peace.

The territories' performing the functions of population reproduction is related not only to provision of natural growth of the country's population but to increase of living standards of rural population which lags behind the urban level (Cheremisina and Cheremisina 2015). Reproduction of rural population requires development of human potential and increase of effectiveness of the use of human resources.

2 Methods

Instrumentarium includes methods of statistical analysis of static and dynamic information (Rogachev 2015). The authors' statements are based on the hypothesis that Russian population change under the influence of a range of factors. For the purpose of determining the main factors that influence the dynamics of the population size, a correlation and regression analysis was performed, which includes measuring closeness, direction of connection, and establishment of analytical expression of connection.

Evaluation of parameters of regression equation for each of the studied models was performed, and it was determined that quadratic model is the most precise. With the help of the methods of econometric modeling and forecasting of time rows, forecast of birth rate in Russia for 2016–2018 was compiled.

3 Results

At the beginning of the Soviet history, the total population of Russia constituted 91 million; the share of urban population constituted only 17%, i.e., the main population lived in rural territories, which showed agrarian type of economy. During the period of industrialization of economy and its recovery after World War II, the situation changed drastically. Thus, in 1970, the total population constituted 129.9 million, with the share of urban population of 62% and of rural, 38%. Therefore, Russia was developed by the industrial and agrarian type of economy reproduction. Maximal population in Russia was observed in 1990–1996, constituting 148.3 million. Then, by 2010, the population had been

reducing, constituting 142.8 million. As of January 1, 2015, the Russian population was 146.3 million, of which 74% were urban residents (Zarova 2013).

The analysis of existing statistical data shows that maternity capital is a stimulus for increase of birth rate. It should be noted that birth rate in Russia grew with the establishment of maternity capital. In 2007, birth rate constituted 1,610,122 and in 2015, 1,932,227; it grew by 20.1% as compared to 2007.

The study of population distribution according to the place of residence does not correspond to the general tendency of change of the number of population. Thus, rural population decreases, while in 1917, it constituted 75.5 million and by 2014, it constituted 37.1 million. This fact shows the continuing urbanization of population, which led to 29:10 ratio between urban and rural population.

Figure 1 shows dynamics of Russia’s population by the place of residence with perspective extrapolation until 2018, according to which total population will grow to 147 million. At that, rural population will decrease by 36.9 million, which will result in rural population constituting 25% and in urban population, 75% (Table 1).

Let us perform regression and correlation analysis which includes measuring closeness, direction of connection, and establishment of analytical expression of connection. Using the method of paired correlation, let us view variation factors of attribute *X* (income per capita of population, RUB; data on receipt of maternity capital, people; number of births, people; population, million people; marriages; divorces) on efficiency *Y* (number of births, people).

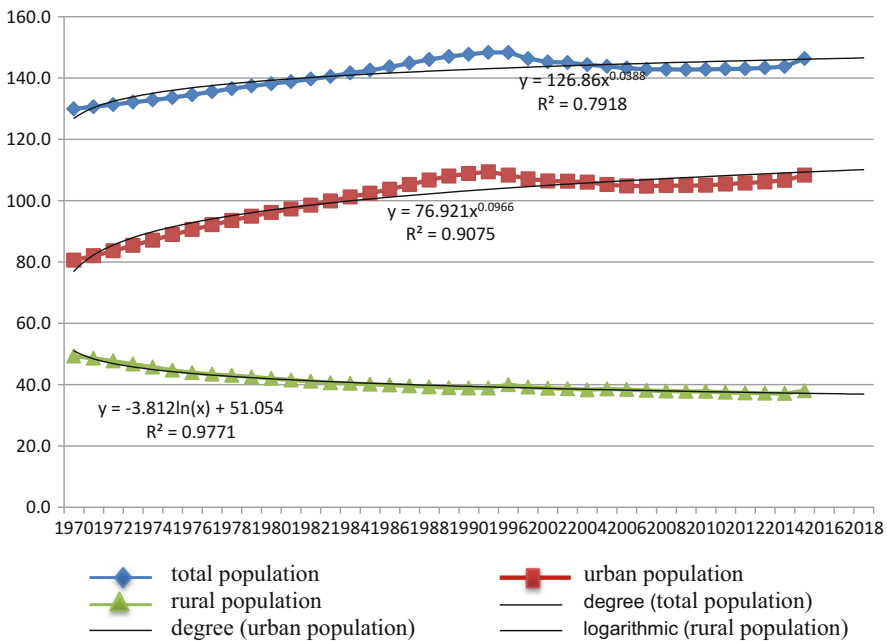


Fig. 1 Dynamics of change of Russian population as to place of residence and its perspective extrapolation by 2018 (million people)

Table 1 Dynamics of birth rate, death rate, and natural growth of Russian population for 1970–2015 (people per 1000 people)

Years	Total population			Urban population			Rural population		
	Births	Deaths	Natural growth	Births	Deaths	Natural growth	Births	Deaths	Natural growth
1970	14.6	8.7	5.9	14.8	7.9	6.9	14.3	10.0	4.3
1980	15.9	11.0	4.9	15.8	10.0	5.8	16.1	13.4	2.7
1990	13.4	11.2	2.2	12.7	10.5	2.2	15.5	13.2	2.3
2000	8.7	15.3	−6.6	8.3	14.6	−6.3	9.8	17.1	−7.3
2010	12.5	14.2	−1.7	12.0	13.5	−1.5	14.0	16.1	−2.1
2015	13.3	13.0	0.3	13.4	12.6	0.8	12.8	14.4	−1.6

Based on the given data of correlation analysis, it is possible to make the following conclusions:

- The main factor that determines the number of born children is the volume of population's income per capita ($r = 0.971$), i.e., 94.3% of birth rate variation depends on living standards of population.
- The second place (according to the level of influence on the number of born children) belongs to the factor of maternity capital ($r = 0.905$).
- Moderate level of dependence is observed with indicators of marriages ($r = 0.708$) and divorces ($r = 0.513$).
- Dependence of population size on the viewed indicators (negative) is rather strange; this fact could be explained by the presence of other factors that are not discussed in this study.

In order to determine the equation of analytical connection between the factors, let us built regression model, using the applied software package IBM SPSS Statistica (Table 2).

Using the given data (Table 2), let us compile two models that reflect the largest connection between the factors:

$$Y = 1,310,895.176 + 23.878x_1$$

where x_1 is the income per capita of population. Correlation index (R) = 0.943.
 $Y = 1,350,456.152 + 17.735x_1 + 0.132x_2$, where x_1 is the income per capita of population and

x_2 the maternity capital.

Correlation index (R) = 0.984.

As correlation index in the second equation is larger $R = 0.984$, it means that according to the Cheddok scale, connection between income per capita and maternity capital, established by the regression equation, is very high.

Now let us build a model that determines the number of births. For that, two models fit best: linear and quadratic. Let us determine the most adequate of them (Table 3).

Table 2 Parameters of models and evaluation of their significance

Model		Non-standardized coefficients		Standardized coefficients	T	Value
		B	Standard error	Beta		
1	(Constant)	1,310,895.176	35,790.301		36.627	0.000
	Income per capita of population (RUB)	23.878	1.966	0.971	12.147	0.000
2	(Constant)	1,350,456.152	32,777.693		41.200	0.000
	Income per capita of population (RUB)	17.735	2.942	0.721	6.029	0.000
	Data on receipt of maternity capital (people)	0.132	0.054	0.295	2.469	0.039

Table 3 Parameters of linear model and their evaluation on typicality

Model		Non-standardized coefficients		Standardized paired coefficients	T	Value
		B	Standard error	Beta		
1	Succession of observations	51,547.000	4436.215	0.968	11.620	0.000
	(Constant)	1,404,482.7	30,087.873		46.679	0.000
2	Succession of observations	67,890.552	19,891.731	1.275	3.413	0.009
	Succession of observations 2	-1361.963	1614.495	-0.315	-0.844	0.423
	(Constant)	1,369,071.697	51,935.571		26.361	0.000

Thus, equation of linear model has the following form:

$$Y = 1,404,482.727 + 51,547x_1, \text{ where } x_1 \text{ is the population's income per capita.}$$

Parameters of quadratic model equation:

$$Y = 1,369,071.679 + 67,890.552x_1 - 1,361.963x_2$$

where x_1 is the population's income per capita and x_2 the maternity capital.

There is difference by place of residence. Thus, in 2014, men's life span in urban territories, as compared to rural territories, is higher by 2 years and that of women, by 1.4 years. As of 2015, the average life span in cities constitutes 71.44 years and in rural territories, 69.49 years. This fact is related to development of infrastructure of rural settlements (time of transportation to a hospital by first aid vehicles, accommodation conditions, hard manual labor, destruction of traditional life mode, etc.) (Khokhlova et al. 2015).

Comparing indicators of development of housing fund, we see that the level of plumbing constituted 86% in cities in 2015, while on rural territories, 54%. A larger

gap is observed for wastewater disposal and baths (shower): on average, urban residents are provided with these twice better than rural residents (Sibirskaya et al. 2015).

Indicators of expenses for final consumption on average per one member of household per month show that consumption in rural territories constituted RUB 10,611.9 and in urban territories, by 57% more (RUB 16,648.4). Expenses for food in city constitute 32.1% and on rural territories, 42.0%. At that, it should be noted that the volume of natural revenues from private husbandry in rural territories constitutes 9.1% and in urban territories, 1.9%.

The second group of expenses is related to consumption of nonfood products: 39.1% of expenses account for it in the city and 37.4% in the village. Despite a popular idea that rural territories consume more alcohol, the share of expenses in the structure of consumption according to the place of residence is the same, constituting 1.7% of the total structure of expenses.

The number of the most provided families reduced in 2014 from 16.6 to 15.8%, as compared to 2013. This was due to families from urban territories. At the same time, the number of the most provided households in rural territories grew slightly—from 11.0 to 11.2%. Thus, the given data shows lower living standards of population in rural territories.

4 Discussion

It is necessary to agree with the scholars that study these issues that Russia, among all countries of the world, has a large territorial differentiation for the main social indicators. The difference in the level of social parameters is especially high between residents of urban and rural territories (Bezrukova et al. 2013).

The studies of the World Bank showed that significant inequality in development of territories slows down the rates of economic growth of the states. Therefore, management of territorial differentiation, aimed at gradual reduction and approach of positions of regions' development, should create more favorable conditions for development of regional economy and optimization of socioeconomic transformations, formation of Russian mentality at a higher level, strengthening of integrity of Russian state, and economic growth of the country on the whole (Speshilova 2010).

However, striving for absolute elimination of difference may lead to lack of competition ("leveling"), which will negatively influence the rates of development. Therefore, it is important to determine the edge behind which further reduction of asymmetry is not expedient (Busarina et al. 2014).

The increase of living standards of rural population is one of the main goals of the state program of development of rural economy and regulation of agricultural products and raw materials' market. Ways of solving the problem are formulated in the Russian government's concept of federal target program "Sustainable development of rural territories for 2014–2017 and until 2020" and in the federal target program "Social development of rural territories until 2018" (Speshilova 2010).

5 Conclusions

The process of transition to sustainable development of urban and rural territories is a many-stage process that consists not only in planning and formation of programs of socioeconomic development but also in organization of this development through design and creation of municipal enterprises that perform mobilization of potential, its use, and direction for self-development for the purpose of overcoming the poverty and increase of population's well-being. Programs of socioeconomic development form framework conditions at which public and individual interests are realized and determined by state and public partnership.

In our opinion, the directions of convergence of development of urban and rural territories are the following:

- Diversification of agricultural production, increase of economic activity of population, restoration of tradition, and development of new skills and productions
- Development of modern production and information infrastructure
- Development of industry for processing of agricultural raw materials
- Full development of cooperation of economies in production, sales, financial, and other spheres

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Institutional Environment as a Tool of Educational Services Development

Olga V. Dybina

Abstract The article views organization of institutional environment as a tool of educational services development. A special role belongs to marketing activities. Marketing activities in the general system of management of preschool educational organization are capable to ensure realization of strategic directions of its development and efficient achievement of qualitative indicators in personal development of pupils and teachers. Creation and functioning of institutional environment of marketing activities in the management system of preschool organization by the principles of value-oriented marketing stimulate creation and promotion of high-quality educational products and ensure successful social partnership of preschool organization with customers (pupils' parents). At that, social partnership with customers (pupils' parents) of educational services predetermines optimality of a preschool organizational management, as marketing service conducts socio-pedagogical diagnostics of demand and offer of educational services and takes into account educational demands of consumers for the purpose of reduction of social risk of educational for personality, family, and educational organizational itself. Analysis of components of marketing activities of preschool educational organization at the studied stage of experimental work allowed us to determine the character and sense of marketing activities of a preschool organization. With internal effectiveness and good competitive position of kindergarten, as compared to other preschool organizations in a microcommunity, the data of the experiment shows insufficient level of marketing activities of specific kindergarten. The environment components are given. The stages of organizational of marketing activities and their realization are of special interest. Functions of marketing activities are described in detail.

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1 Introduction

Under the modern economic conditions, activities of preschool educational organization are determined by social order, which orients at demands of the region and city with certain value setting. Being an inseparable part of micro-society, preschool organization is exposed to direct and indirect influence. At that, social environment may stimulate its development and hinder it. That's why successfulness of functioning and development of preschool educational organization largely depends on the level and means of adaptation to constantly changing external economic conditions. This explains and predetermines necessity for organization's conducting marketing activities, which should be the basis for formation of the strategy, operative planning, and solving the problems of preschool organization.

Therefore, the problem of development of marketing activities in the system of preschool education is topical in scientific and practical aspects. Most of preschool organizations strive for active use of marketing events for the purpose of improvement of quality and expansion of assortment of educational services, which allows them to satisfy demands of parents and ensure competitiveness under the conditions of market economy. A large role here belongs to institutional environment.

Theoretical analysis of the problem shows that institutional environment as a tool of development of educational services was not viewed in this research. Analysis of modern practice of application of marketing in preschool organization allowed for determination of contradiction between the necessity for conduct of marketing activities of preschool educational organization under the conditions of competition and instability of institutional environment and lack of complexity in application of marketing and the use of its separate elements in management of preschool organization.

2 Description

Institutional environment should ensure execution of one of the most important functions in market economy—creation of favorable conditions for development of business. Institutional environment sets a system of stimuli and rules, directing activities of people (in our case—pedagogical employees of kindergarten) to a certain course.

In this regard, a significant role belongs to institutional environment of marketing activities. Institutional environment of marketing activities is represented by totality of components (targeted and perspective).

Targeted component of institutional environment of marketing activities is represented by perspective and subjective goals of preschool educational organization.

Perspective goals are related to optimization and intensification of marketing activities of preschool organization:

1. Provision of quality of provided educational services—both mandatory and additional.
2. Achievement of leading position in the market of preschool education in the district.
3. Development of innovative activities of preschool organization.
4. Improvement of marketing communications of preschool organization.
5. Subjective goals of marketing activities are aimed at satisfaction of consumers' demands (parents of pupils of preschool organization) and receipt of financial profit from provided additional paid educational services.

Special attention should be paid to realization of organizational and regulating component of institutional environment of marketing activities which is represented by principles, functions, and conditions of conduct of marketing activities in preschool organization.

Let us describe functions of marketing activities. Information-orienting function includes determination of objects and subjects and directions of marketing service activities and creation of information and analytical bank of potential consumers of preschool organization.

Objects of marketing activities are the process of development of pupils' personalities (personality marketing), quality of educational programs, pedagogical technologies, and new types of educational services (ideas marketing).

Subjects of marketing activities include:

- Manufacturer (in our case—kindergarten)
- Final consumers (parents or legal representatives of kindergarten pupils)
- Legislator (founder of preschool organization)
- Organizations-consumers (schools which accept children from kindergarten)
- Marketing specialist (in our study—experimentalist that coordinates activities of marketing service of preschool organization)
- Rivals (preschool educational organization that provide the similar educational services in the district)

The main subjects of marketing activities of preschool organization are manufacturer, consumer, and legislator. Preschool organization in the market of educational services has the following questions: “How wide the services assortment is?,” “What is the services' quality?,” “Are interrelations between consumers and manufacturers just (from the legal point of view)?,” “Does the manufacturer damages consumers' personality?,” and “What measures of services promotion should be used?”

Realization of information-orienting function offers determination of directions of marketing activities of preschool organization. Two directions are distinguished:

- (1) Research direction includes preparation and conduct of marketing research and creation of marketing information system (collection, processing, preservation, and provision of information).
- (2) Communications direction includes provision of cooperation between consumer and educational organization for achievement of the set goals and

solving the tasks, determination and organization of advertising for the purpose of services promotion, formation and stimulation of demand for their services, as well as formation and supporting trust from consumers and society to the organization.

Diagnostics and forecasting function is related to development of strategic forecasts of regional market of educational services and marketing information system. In our research, this function is realized in the process of analysis of effectiveness of marketing activities of preschool educational organization during conduct of certifying experiment.

Project and coordination function ensures realization of marketing activities for creation of a new high-quality educational product and optimal means of its execution in view of customers' demands (pupils' parents). Control and evaluation function determines the level and quality of educational product of preschool organization.

The determined functions allow for consideration of marketing activities of preschool organization as sociocultural activities, with the help of which this organization informs and promotes its goals, values, educational products (services, programs) to parents, and pedagogical personnel in educational environment, offering them to urban society on the whole.

Marketing activities in the system of management of activities of preschool organization are aimed at taking educational programs and services to the consumer in the necessary place, quantity, and quality. This is possible under two groups of conditions:

(1) Socio-pedagogical conditions:

- Socio-pedagogical diagnostics of demand and offer for educational service
- Systemic accounting of demands of consumers and adequate reaction to studied real demand
- Marketing motivation of pedagogical employees and increase of loyalty of parents to preschool organization and its educational products (formation of demand by communication and other marketing influences) (Panicheva 2005)

(2) Organizational and pedagogical conditions:

- Formation of marketing department (service) in the structure of management of preschool organization that is responsible for commercial success and image of educational organization
- Monitoring of quality of educational product

Realization of marketing activities in preschool organization was conducted stage by stage (Ezopova 2003). The following stages are distinguished: motivating, analytical and forecasting, organizational and correcting, and reflexive and evaluating. Let us dwell on description of these stages of realization of marketing activities in preschool organization.

Motivating stage. This stage includes development and establishment of statement on marketing activities, creation of marketing service in preschool educational organization, and appointment of its manager.

Motivating stage includes conduct of marketing research for detailed acquaintance with institutional environment of marketing activities of preschool organization. In the process of the research, it is necessary to find out whether the kindergarten possesses profitable market situation for preservation and improvement of its positions in micro-society.

Also, it is important to organize general meeting of pupils' parents, at which the parents should be told the results of survey and specify the demand for paid additional educational service.

After that, it is necessary to pass to creation of normative and legal basis for provision of paid additional educational services in preschool organization, i.e., development of theses on provision of paid additional educational services and form of agreement for additional paid educational programs. According to the agreement, the parents are guaranteed protection of their rights for proper information on executor of the provided services, proper quantity of services, and correspondence of the agreement's terms to legal requirements for restoration of violated rights.

Analytical and forecasting stage supposes study of institutional environment of marketing activities of kindergarten and segmentation of the market of educational services, as well as selection of targeted segments and positions of services in the market.

Market segmentation allows specifying and differentiating the demand, with simultaneous structuring, and, finally, determining the best conditions for selection of the most optimal variant of the strategy and tactics of marketing. Market segments are differentiated depending on the types of consumers and corresponding differences in demands, characteristics, behavior, and thinking of consumers.

In our research, consumers of educational services are parents or legal representatives of kindergarten pupils. In this case, the most important peculiarity of marketing activities is the necessity to deal with a wide circle of various consumers which differ as to requirements, tastes, priorities, and problems. That's why thorough market segmentation is necessary here.

As a result of surveying the parents whose children attend kindergartens of Tolyatti, the following targeted segments are determined; they were the landmarks during determination of the list of additional educational services:

- Development of musical and rhythmic movements
- Teaching English
- Preparation of children for studying in school
- Logopedic help

Organizational and correcting stage is represented by formation of services portfolio (assortment policy, policy of the offered services), determination of prices for the service (price policy), and promoting them in the market (communication and sales policy) (Afanasyev and Cherkasov 1999).

Formation of the portfolio of educational services and satisfying the needs of segmented markets is conducted on the basis of application of marketing communications technologies in preschool organization. Application of marketing communication technologies is aimed at cooperation between various groups of consumers and executors for achievement of their stable contact.

The next step at this stage could be organization of promotion of services in the market (communications and sales policy). One of the main advertising and information resources is the official website of kindergartens. Analysis of websites usually finds such drawbacks as:

- Absence of feedback with website users
- Low attendance of website
- Primitive nature of web design and insufficient colorfulness and clarity

For the purpose of promotion of the website as a means of communication policy of educational organization, it is necessary to make it more representative, informative, and interactive. The website should be oriented at the main subjects of marketing activities of preschool organization (manufacturer, specialists of preschool education; consumers of educational services, pupils' parents; and legislator, founder).

Marketing activities of preschool educational organization is a rationally reasoned process of managing the state of educational product in the market with the use of reverse connections, which are a mechanism of management for open educational systems and are based in marketing activities on the analysis (monitoring) of external and internal environment of educational organization.

3 Results

As a result of experimental work, there have been significant value changes within management of the preschool organization. The management system of the preschool organization is peculiar for service and marketing management, aimed primarily at increase of quality, accounting, and satisfaction of needs of its customers and satisfaction of needs of the preschool organization in the new character of management.

Marketing activities in the system of such management stimulates satisfaction of consumers' needs for high-quality educational products through timely exchange of main information on services' quality. For each member of the educational services market ("customer–manufacturer") with systemic and functional organization of marketing activities, conditions for free acceptance or refusal of the offered services are created.

4 Conclusion

Organization of institutional environment of marketing activities in pedagogical management of preschool organization is one of the factors of its competitiveness in the urban market of educational services and also does the following:

- Stimulates increase of loyalty of customers (parents) to educational organization on the whole and its educational products in particular with the help of socio-pedagogical diagnostics of demand and offer of educational service
- Functionally coordinates creation and promotion of high-quality educational product through organization of marketing service in preschool organization and conduct of monitoring of quality of educational results for the purpose of reduction of social risk of education for a child's personality, family, and the very educational establishment itself

The performed research is not a full analysis of all aspects of the studied problem due to its multi-aspect nature.

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Institutional Ambiguity of Regulation of Possessory Relations in Modern Russia

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Abstract The article explores the institutional ambiguity of the legal regulation of possessory relations by the general and special rules of the Civil Code of the Russian Federation. The author's position is based on the analysis of the conception of improvement of civil legislation and subsequent changes introduced in a number of provisions of part 1 of the Civil Code of the Russian Federation in 2014–2016, unfortunately without affecting the content of article 209 of the Civil Code. However, according to the authors, this norm, serving as a concentrated expression of the theoretical views of representatives of the Russian civil law and a key element of the ownership principles, raises a number of uncertainties in the current regulation of the possessory relations, negatively affecting the trend and development of the trade in general.

The authors criticize the “everything that is not prohibited is permitted” method of regulating the possessory relations, which is supported by scientists on the basis of regulatory permission of all the owner's operations in his sole discretion. They note “overrunning” off the institutional framework in part 2 of article 209 of the Civil Code.

1 Introduction

When they discussed the conception of improvement of the civil legislation and when they introduced in 2014–2016 changes in a number of provisions of part 1 of the Russian Federation Civil Code (hereafter—the Civil Code), article 209 was not modified at all. It remained out of the legislators' purview. Scholars in civil law also pay unreasonably little attention to it. Meanwhile, according to the logic of the text of this article and to the law dogma, article 209 of the Civil Code in its current form gives rise to a number of uncertainties in the regulation of the current possessory relations, negatively affecting the trend and development of the trade in general.

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2 Part 1: Ambiguity of the General Regulation of the Possessory Relations

In our opinion, the ownership is an interbranch institute, which is based, of course, on the norms of the Constitution of the Russian Federation (the Civil Code). But the ownership theory and the legal stipulation of its original principles are still concentrated in the science of civil law and the Civil Code, which is a fundamental act of the civil law system. Article 209 of the Civil Code is a concentrated expression of theoretical views of civil law scholars fixed in a substantive form. This is kind of a matrix or a “cornerstone” of all the legislation regulating the ownership. In this context, paragraph 3 of article 3 of the Civil Code stipulates that the civil law norms contained in other laws shall correspond to this Code (the Civil Code). It is known that the Russian doctrine has accepted the ownership content structure elaborated by Roman lawyers. This content integrates the owner’s rights of possession, use, and disposal of his property items.

In the literature, some economists (Cole, Honore, North et al.) tried to determine the absolute ownership as a “bouquet” of 11 elements (Kamenetskiy and Patrickeyev 2010). However, Russian scholars in civil law came to the conclusion that all of the elements of this “bouquet” are included in the content of the three powers of owner named in the Roman law. The Russian civil legislation of all the historical periods has been developed in terms of this scientific doctrine. Part 1 of article 209 of the Civil Code is based just on the aforementioned components of the ownership: “1. The owner is entitled to possess, use and dispose of his property” (the Constitution of the Russian Federation 2014).

In our opinion, there is a certain “overrunning” off the institutional framework in part 2 of article 209 of the Civil Code: “2. The owner is entitled to carry out any operations with his property at his sole discretion, if these operations do not contravene the law and/or other legal acts and if they do not violate the rights and legitimate interests of other people, including those of transferring his property to ownership of other people, transferring the rights of possession, use and/or disposal without losing ownership, giving his property in pledge or encumbering it otherwise, as well as disposing of it any other way” (The Civil Code of the Russian Federation 1994). As you can see, this part of article 209 stipulates that any operations of the owner must not contradict the law and/or other legal acts and not violate the rights and/or legitimate interests of other people. We agree that any operation of the owner must not violate these rights and interests.

Firstly, if we judge not from the permissive method of regulation of civil relations, which is a landmark here, but from the “everything that is not prohibited is permitted” method policy, there should exist a provision stipulating that the owner is entitled to carry out any operations related to his property, if such operation is not expressly prohibited by the law. At least, the Civil Code in its other articles postulates the “everything that is not prohibited is permitted” method, but not the permissive one, and such postulation is basically implied by the constitutional stipulations (the Constitution of the Russian Federation 2014).

Secondly, the said ambiguity revealed in the law dogma is not the most dangerous one. There is also one even more significant and fundamentally harmful provision. Its harm is due to the stipulation that those operations of the owner executable in his sole discretion shall not contradict not only the law but also other legal acts. No need to mention that legal acts include not only regulatory acts but also acts of application of law provisions and individual acts. This group of documents includes any directives of the ministries, departments, and other federal agencies, and if we take into account that the civil relations are regulated besides, against the Russian Constitution (but fundamentally properly), by acts of constituent entities of the Russian Federation, we'll have to acknowledge that such acts are abundant. Consequently, the owner's "sole discretion" results nothing more than an attractive declaration. Any orders, ordinances, instructions, decisions, permits, letters, and other official documents of regulatory or individual nature issued by any agencies nullify the owner's "sole discretion" in respect of his property.

For the purpose of studying the institutional framework of the owner's powers, we believe that article 209 is fundamental, original, and institutionally constitutive for the whole ownership legislation. Part 2 of article 209 of the Civil Code is completed by the statement that the owner is entitled to transferring his property to ownership of other people; transferring the powers of possession, use, and disposal without losing the ownership; giving his property to pledge and/or encumbering it otherwise; or disposing of his property any other way.

A fact really very significant in the theoretical perspective is that the owner can transfer all his powers with respect to his properties to other people but still remain the owner of his property. Such well-known condition is called in the civil law bare ownership (K.D. Kavelin) or naked ownership (K.P. Pobedonostsev). We suspect that these authors' viewpoints run back to the theory of the ownership elasticity (D. I. Meyer), which is related, of course, to its restriction. Anyway, the ownership cannot be bare or naked; these denominations are just nominal, as well as the concept of "elasticity." Even if the owner loses control over his property for some time, for example, in case of its hypothecation, and therefore loses for some time his powers of possession, use, and disposal (or only the power of disposal), his ownership is not divested of the economic substance or corporeality, and it means that his power cannot be "naked" or meaningless.

In order to solve this problem, let us examine the content of part 3 of article 209 of the Civil Code: "3. Possession, use and disposal of land and/or other natural resources may be exercised by their owner freely to the extent that trading them is permitted by the law (Article 129), if it does not pollute the environment and does not infringe the rights and legitimate interests of other people" (The Civil Code of the Russian Federation). Here we see that the rights of the owner of land and/or other natural resources to the extent that trading them is permitted by the law (article 129 of the Civil Code) may be exercised by their owner freely, provided that it does not damage the environment or violate the rights and/or legitimate interests of other people.

Then quite a logical question arises—whom does the legislator mean by "other people" in this case? Does he mean individuals and/or groups of individuals, legal

entities, and state-owned and/or municipal entities which are declared equal entities by the civil law? The next question is how these “other people” would relate to people living in the corresponding areas for whom the land (in this particular case, we are talking about administrative territorial space, but not land plots) and the other natural resources are the basis of their life according to article 9 of the Constitution and must therefore be used and protected appropriately. In our opinion, it is more than obvious that it is impossible to link the regulatory provision of part 3 of article 209 of the Civil Code with the provision of article 9 of the Constitution. They express absolutely different socioeconomic and legal categories, which have institutionally different meanings (public one and private one, respectively) and unavoidably conflict with each other. While the Constitution of the Russian Federation in its article 9 implies only the “human substrate,” more specifically residents or population of an administrative-territorial unit, nobody knows what people are implied by part 3 of article 209 of the Civil Code.

It is important to mention that paragraph “k” of article 72 of the Constitution refers to natural resource branches of the legislation to the joint competence of the Russian Federation and its sub-sovereign entities, as opposed to the civil legislation, which is referred to as the exclusive competence of the Russian Federation by paragraph “o” of article 71 of the Constitution (the Constitution of the Russian Federation 2014). This is very important in this particular case because the mentioned branches of legislation cannot be referred to the private law, as is the case of the civil law. In the light of the current delimitation of the competences of the civil and natural resource branches of legislation, the permissive method of legal regulation of the possessory relations, which is used in part 2 of article 209 of the Civil Code, should be applied only to the land and other natural resources. And the “everything that is not prohibited is permitted” method which follows from the basic principles of civil legislation (article 1 of the Civil Code) should be applied to the other property items. These methods developed in the general law theory should get their logical, institutionally defined, and scientifically based place in the law dogma. Unfortunately, they do not have such place yet. Wording of article 209 of the Civil Code is quite contrary.

3 Part 2: The Ambiguity in the Special Regulation of the Possessory Relations

Speaking about the method “everything that is not prohibited is permitted” of regulation of civil or, to be more exact, the possessory relations, it should be born in mind that this method should be based on the principles of reasonableness of institutional framework. This concept arises from the human mind and is characterized by the logic based on the reason (Ozhegov 2007). In the case we study, it is characterized by the logic of official documents. To act reasonably means to anticipate on the scientific basis (to foresee or, if you prefer, to be presentient,

meaning “to understand”) the consequences to result from the corresponding actions or omissions. Elements of the reasonableness must be immanently appropriate both for those institutional framework which is inherent in the very structure of the ownership (included in the basis) and those which is called autonomous herein above due to the fact that they are formulated in other legal acts and affect the owner’s encumbrances quite indirectly. However, the reasonableness, as a principle, must permeate all the Russian legislation and the established practice in applying the law. It is just as much important to avoid the institutional ambiguity in the special regulation of the possessory relations. Unfortunately, this problem is so large that we are going to bring it up here just very slightly.

As is well known, section II of the Civil Code is called “The right of ownership and other rights in rem.” It means that the ownership should be understood as just a right in rem, i.e., property items should include materialized objects of the physical world, a material substance of natural and man-made origin which exists within the sphere of human activities. In fact it is far from true, and the Civil Code admits inconsistency in this matter, confusing different phenomena of social reality. Chapter “Practice in the Application of the Production System Tools at the Enterprise During Mastering of New Products” “General Provisions” uses the term “property” in all its articles (articles 209–217 of the Civil Code). Chapter “Legal Conditions for Integration of Regional Companies in Foreign Economic Activities” “Acquisition of title” instead of this term uses another one—“property item” (articles 218–234 of the Civil Code). By the way, animals are included in the category of “property items” (article 239 of the Civil Code), the fact which is not just improper but cruel. Chapter “Sustainable Economic Growth of Integrated Agricultural Formations: Information and Analytical Support” “Termination of the ownership” and chapter “Problems and Perspectives of Transport Humanization Under the Conditions of Globalization and Integration” “Common property” use the concept of “property.” Such verbal balancing is absolutely groundless, because the property includes property rights and other elements from the category of social consciousness, and we are going to show this below. Such ambiguity, in our opinion, indicates that in terms of the Civil Code, the ownership is far from being only the right in rem.

As another example of confusing the tangible substrate and the right as a phenomenon of the perfect order in the structure of an object of the civil law, more specifically of the ownership, let us consider article 1176 of the Civil Code entitled “Inheritance of the rights related to participation in economic partnerships, companies and production cooperatives” (the Civil Code of the Russian Federation 1994). There is no need to prove the fact that the rights in this case are included in the succession mass along with the reified material objects (namely, property items or property). Analysis of just one chapter “Model of Global Crisis Management of Entrepreneurial Activities” of the Civil Code “Inheritance of certain types of property” gives us every reason to conclude that to call the ownership the “right in rem” is to generate the institutional ambiguity, make another mistake, and distort the principle of reasonableness and veracity.

The whole group of “property items” as objects of civil rights is compiled in a class by the criterion of tradability (article 129 of the Civil Code) and divided into two types of property items: movable and immovable ones (article 130 of the Civil Code). Basing on our reasoning expressed above, the same scope can be expressed in other words: “tradable and movable or untradable and immovable property,” because in the Civil Code, the “property item” and the “property” are considered to be one and the same phenomenon of the material world. However, this tangible substrate is mixed with the right as the perfect order phenomenon, because, according to article 129 of the Civil Code, the concept of property rights is one of the elements of the concept of property. A special object of the civil rights is regulated in article 132 of the Civil Code, where an enterprise, in defiance of the formal logic and the common sense, is declared as an object of civil rights—an immovable property (the Civil Code of the Russian Federation 1994). The enterprise features without personnel, as a property complex, but with receivables from debtors, with payables to creditors, with the right of branding individualizing the enterprise, and with other elements which cannot be active in the trade without people. Such legal fiction cannot be defined with other wording than institutionally indefinite. Any “property item” of ideal origin can be integrated in this legal structure, and moreover, it can be included in the immovable property. There is only one way to get rid of such legislative distortions—using in legislative process the principle of reasonableness and veracity of what to put into the law formula, on the basis of the necessity of the institutional determinacy.

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Perspectives of Elimination of “Institutional Gaps” in Foreign Economic Activities of Subjects of SME Within the Global Crisis Management

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Abstract The purpose of the chapter is to determine perspectives of elimination of “institutional gaps” in foreign economic activities of subjects of small and medium entrepreneurship within the global crisis management by the example of modern Russia. The methodological provision of this research is based on methods of economic analysis of statistical information such as regression and correlation analysis. Informational and analytical basis (source of statistical data) is materials of the Federal State Statistics Service (Rosstat) and the International Monetary Fund. As a result of the research, it is concluded that a perspective direction of the global crisis management is development of foreign economic activities of subjects of SME, which is hindered by various “institutional traps”; recommendations are

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offered, and a scheme of elimination of “institutional traps” in foreign economic activities of subjects of SME within the global crisis management is offered.

JEL Codes O24 • L53 • F02

1 Introduction

Modern economic crises have a global coverage, which determines their full-scale character and applicability to all members of the global economic system. However, the strength of crisis’ influence on economies of different countries and consequences of its emergence are different. As practice shows, developed countries overcome crises quicker and more successfully, while developing countries suffer more from the consequences of global economic crises.

Based on that, we consider (the research hypothesis) that a perspective direction of the global crisis management is development of foreign economic activities of subjects of SME, which is hindered by various “institutional traps.” The purpose of the chapter is to verify this statement and to determine perspectives of elimination of “institutional traps” in foreign economic activities of subjects of SME within the global crisis management by the example of modern Russia.

2 Materials and Method

Conceptual and applied aspects of foreign economic activities, including subjects of SME, are viewed in the works of Kandogan (2014), Aničić et al. (2016), Dikova et al. (2016), Popkova et al. (2013), Skiter et al. (2015), etc. Various issues of conduct of global crisis management are studied in the publications of Karpenko et al. (2015, 2016), Sultanova (2015), Sushchenko and Trunina (2016), Vasyuk (2015), Sakharova et al. (2015), Kravets et al. (2014), among others.

The methodological provision of this research is based on methods of economic analysis of statistical information such as regression and correlation analysis. They are used by the authors for verification of the offered hypothesis and determination of dependence between the foreign economic activities of subjects of SME and GDP in constant prices, growth of which is the most important goal and a key indicator of success of measures in the sphere of global crisis management.

Informational and analytical basis (source of statistical data) includes the materials of Rosstat and the International Monetary Fund. Timeframe of the research is 2007–2015, which allows for covering the two recent crises for the Russian economy, caused by the global causes. The first crisis is the global recession of 2008–2010, and the second crisis is the sanctions regime that started in 2014 and continues as of now. The materials are given in Table 1.

Table 1 Dynamics of the volume of foreign economic activities of subjects of SME and GDP in Russia in 2007–2015

Year	GDP in constant prices (RUB billion)	Volume of foreign economic activities of subjects of SME (RUB billion)
2007	56,591.6	15,341.6
2008	59,561.4	16,147.1
2009	54,903.1	14,884.5
2010	57,375.8	15,556.2
2011	59,698.1	16,186.0
2012	61,798.3	16,756.7
2013	62,588.9	16,971.0
2014	63,031.1	17,192.8
2015	60,682.1	16,456.3

Source: Rosstat (2016), International Monetary Fund (2016)

3 Results and Discussion

As a result of economic analysis, it was found that with the growth of the volume of foreign economic activities of subjects of SME by RUB 1 billion (x) Russia’s GDP in constant prices grows by RUB 118.43 billion (y) over the studied period. This conclusion is based on the received regression model ($y = 3.68 + 118.43x$). Correctness of the conclusion and its true nature are confirmed by estimate coefficient of correlation of y and x , the value of which for this model constitutes 99.7%.

This is confirmed by the offered hypothesis that a perspective direction of the global crisis management in modern Russia is development of foreign economic activities of subjects of SME. In order to verify the second part of the offered hypothesis, we performed qualitative analysis of foreign economic activities of subjects of SME in modern Russia and determined the “institutional traps” that hinder it, as well as performed their proprietary classification for the directions of such activities.

Under the influence of integration processes, direction of foreign economic activities such as transnational clustering develops more actively in the global economy. It is a group of clusters that includes business structures from various countries of the world. This allows for strengthening of their positions in the global markets and expands their resources base—in view of the fact that enterprises in various countries possess various resource possibilities.

For small and medium enterprises, this is a good opportunity to get access to the global market and to expand sales markets of their products. Russian small and medium enterprises might unite into clusters with foreign enterprises, interested in access to the Russian markets, receiving access to strong brands and additional investments. Development of this direction of foreign economic activities of subjects of SME in modern Russia is hindered by tax “institutional trap,” the sense of which consists in the action of a special (less favorable) tax regime for foreign enterprises, including the ones that are only partially foreign.

In this context, it is necessary to note the customs “institutional trap,” the action of which is related to preservation of high customs barriers for foreign enterprises. These traps do damage primarily to Russian small and medium enterprises, as they do not have possibilities for growth and development, while foreign enterprises have a wide choice of countries for expansion of sales markets and investments.

Another direction of foreign economic activities is sales of products abroad—i.e., export. This is hindered by the infrastructural “institutional trap,” which consists in the low quality of Russian infrastructure as compared to developed countries. The normative “institutional trap” is also in effect here—its sense lies in supporting the unique (different from other countries) normative and legal base of entrepreneurship and foreign economic activities, which hinders its development. While large business can hire lawyers to solve this problem, small and medium business does not have necessary resources for that.

Another direction of foreign economic activities is cooperation with foreign contractors—primarily, resource and material suppliers—i.e., their import. This is also hindered by the customs “institutional trap,” as well as the currency “institutional trap.” Its sense consists in the artificial (supported by state regulators) depreciation of Russian ruble. This is done to make Russian products more competitive (as to pricing criterion) in the global market—i.e., within support for export.

At the same time, a lot of Russian enterprises face the necessity for mandatory import of resources and materials, caused by the absence of foreign replacements in Russia. This institutional trap is a cause of high prices for import. The offered scheme of eliminating the “institutional traps” in foreign economic activities of subjects of SME within global crisis management is given in Fig. 1.

In Fig. 1, the corners of the triangle denote directions of foreign economic activities of subjects of SME, and the sides—directions of state policy in the sphere of global crisis management that stimulate elimination of corresponding

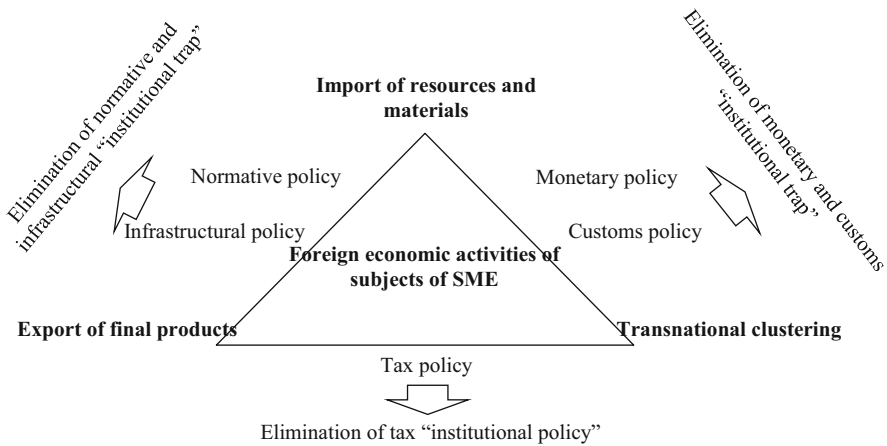


Fig. 1 Scheme of elimination of “institutional traps” in foreign economic activities of subjects of SME within the global crisis management

“institutional traps.” Within the normative policy, it is recommended to unify normative and legal provision of foreign economic activities with the global standards.

4 Conclusion

It should be concluded that perspectives of elimination of “institutional traps” in foreign economic activities of subjects of SME within global crisis management in developing countries are related to modernization of the main directions of the state policy in view of modern challenges of globalization and integration of the global economy.

Theoretical significance of the performed research consists in the development of conceptual provisions of the theory of foreign economic activities, theory of entrepreneurship, and theory of global crisis management. Practical value of the received results consists in the possibility to use the authors’ conclusions and recommendations in the state policy of developing countries in the interests of elimination of “institutional traps” of foreign economic activities of subjects of SME within the global crisis management.

Limitations of this work include founding on the experience of just modern Russia—in view of its specifics, the obtained conclusions cannot be applied to other developing countries, and also, the generalized character of the given recommendations, detalization of which is a perspective direction of further research.

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Institutional Traps as Barriers for Development of Regions' Marketing Activities

Yulia I. Dubova, Tatiana A. Dugina, Ivan S. Korabelnikov, Zhanna Gornostaeva, and Ekaterina Alekhina

Abstract The purpose of the chapter is to study institutional traps as barriers of development of regions' marketing activities by the example of modern Russia. For that, the work uses the developed proprietary methodology of region's competitiveness as manifestation of efficiency of its marketing activities and the built logical model of formation and overcoming of institutional trap as an economic phenomenon. The authors performed evaluation of efficiency of marketing activities of Russian regions by the example of Volgograd Oblast, determined institutional traps of marketing activities of regions of Russia, analyzed their formation and development, and developed instrumentarium for fighting institutional traps of territorial marketing—the proprietary institutional model of development of region's marketing activities.

As a result of the research, the authors came to the conclusion that existence of institutional traps is a serious obstacle for efficient marketing activities of regions of modern Russia. A trap was found related to ineffectiveness of the institute of policy in the sphere of support for development of entrepreneurship, ineffectiveness of the institute of corporate responsibility, and institute of social and ecological policy, as well as ineffectiveness of the institute of region's marketing activities as such. Their overcoming requires not only realization of formal measures but deep change of attitude toward business and region's citizens from regional authorities.

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_27

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1 Introduction

Modern regions are involved in the system of global competition. Erasing geographical and cultural boundaries expands the possibilities for transfer of production factors and migration. The most competitive territories get access to resources necessary for their development, while the least competitive lose them.

This work offers a hypothesis that a serious obstacle for regions' efficient marketing activities in modern Russia is existence of institutional traps. Therefore, the purpose of this chapter is to determine the correctness of this hypothesis and to study institutional traps as barriers for development of regions' marketing activities by the example of modern Russia.

2 Materials and Method

The main provisions of the concept of territorial marketing and the concept of regional economy are viewed in the works of scholars such as Popkova et al. (2013b), Pozdnyakova et al. (2015), Romanova et al. (2015), Laghzaoui and Abakouy (2015), Akopov (2013), among others. This work focused on territorial marketing of region, which is treated as separate economic system in the structure of national economy.

Methodology of this research is based on the method of systemic and problem analysis, method of analysis of causal connections, synthesis, induction and deduction, and method of structural and logical modeling of socioeconomic processes. This work also offers to use a specially developed proprietary methodology of evaluating the effectiveness region's marketing activities, based on the analysis of its competitiveness (Table 1).

The expanded information on the issues of study of institutional traps and institutional barriers of socioeconomic development is contained in publications by Polzin et al. (2016), Osipov and Matveeva (2015), Chang and Wu (2014), Skiter et al. (2015), Popkova et al. (2013a, b), and Kravets et al. (2014).

This work offers to use the proprietary logical model of formation and overcoming of the institutional trap as economic phenomenon that is presented in Fig. 1.

As is seen from Fig. 1, in the process of institutionalization, the consequences of the usual wrong economic practice appear. As a result, an ineffective institute emerges. Influence on various consequences is characterized by low effectiveness—it allows hiding the trap but not fighting it.

Table 1 Methodology of evaluation of region's competitiveness as manifestation of efficiency of its marketing activities

Indicators of region's competitiveness		Measurement unit	Values of competitiveness indicators		
			Leading region		Studied region
			Abs.	Abs.	
Indicators of business environment	Investment attractiveness (volume of attracted investments)	RUB million	IArl	IAir	IAir/IArl
	Entrepreneurial climate (level of business activity)	%	ECrl	ECir	ECir/ECrl
	Generalizing indicator of business environment	–	–	–	$BE = (IA + EC)/2$
Socioeconomic indicators	Employment level	%	ELrl	Eir	ELir/ELrl
	Consumer price index	%	IPrl	IPir	IPir/IPrl
	Volume of polluting emissions into the air	Thousand tons	PErl	PEir	PEir/PErl
	Generalizing indicator of socioeconomic situation	–	–	–	$SE = (EL + IP + PE)/3$
Marketing indicator	Cost or region's brand	RUB million	CBrl	CBir	CBir/CBrl
Integral indicator		–	–	–	$(BE + SE + CB)/3$

This methodology is described in the article (Domnin 2014)

3 Results

Let us assess the efficiency of marketing activities of Volgograd Oblast in 2015 with the help of the developed methodology. For that, let us use Table 2.

As is seen from Table 1, competitiveness of Volgograd Oblast constitutes 56%, as compared to Moscow Oblast. This shows low efficiency of its marketing activities. In the course of deep institutional analysis, it was found that the reasons of these negative phenomena and obstacles on the path of development of Russian regions' marketing activities are three main institutional traps.

The first trap is focused in the sphere of region's business environment as a territory for doing business:

- Reason: entrepreneurship is viewed not as a goal in itself but as a means of realization of social programs in the region;
- Consequence 1: instead of supporting the development of entrepreneurship, regional authorities try to maximally use the existing business;

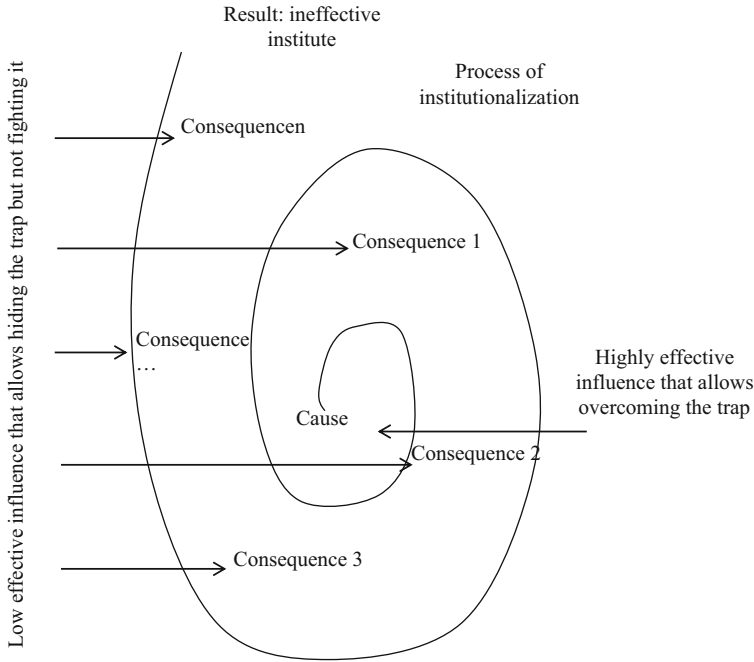


Fig. 1 Logical model of formation and overcoming of institutional trap as an economic phenomenon

- Consequence 2: conditions for doing business and investments in the regions become less favorable;
- Result: ineffective institute of policy in the sphere of supporting the development of entrepreneurship.

The second trap is focused on the sphere of socioeconomic development of the region as a territory for accommodation of population:

- Reason: public economic interests are put at a higher level than private socio-ecological interests of each separate resident of the region;
- Consequence 1: due to weak civil society, the region's residents do not express their interests and do not protect them;
- Consequence 2: lack of motivation for protection of socio-ecological interests of region's residents with public authorities or business;
- Result: ineffective institute of corporate responsibility and institute of social and ecological policy.

The third trap is observed in the sphere of region's marketing activities as a subject of global competitive relations:

- Reason: confidence in absence of necessity for territorial marketing;

Table 2 Results of evaluation of competitiveness of Volgograd Oblast in 2015

Indicators of region's competitiveness		Measuring unit	Values of competitiveness indicators		
			Moscow Oblast		Volgograd Oblast
			Abs.	Abs.	Relative
Business environment indicators	Investment attractiveness (volume of attracted investments)	RUB million	594,495	175,089	0.29
	Entrepreneurial climate (level of business activity)	%	93	64	0.69
	Generalizing indicator of business environment	–	–	–	$(0.29 + 0.69)/2 = 0.49$
Socioeconomic indicators	Employment level	%	69.1	62.5	0.90
	Index of consumer prices	%	112.2	112.0	0.99
	Volume of polluting emissions into atmosphere	Thousand tons	197	154	1.28
	Generalizing indicator of socioeconomic situation	–	–	–	$(0.90 + 0.99 + 1.28)/3 = 1.00$
Marketing indicator	Cost of region's brand	RUB million	11,576.4	2106.0	0.18
Integral indicator		–	–	–	$(0.49 + 1.00 + 0.18)/3 = 0.56$

Source: Rosstat (2014)

- Consequence 1: territorial marketing is not paid any attention from regional authorities;
- Consequence 2: region's brand is less competitive;
- Reason: ineffective institute of region's marketing activities as such.

The following model is offered as a tool for fighting the institutional traps of territorial marketing (Fig. 2).

As is seen from Fig. 2, the offered institutional model of development of region's marketing activities allows for elimination of all found institutional traps and for provision of formation and development of effective national and global brand of the region, creation of favorable conditions for living and doing business in the region, and increasing the national and global competitiveness of the region.

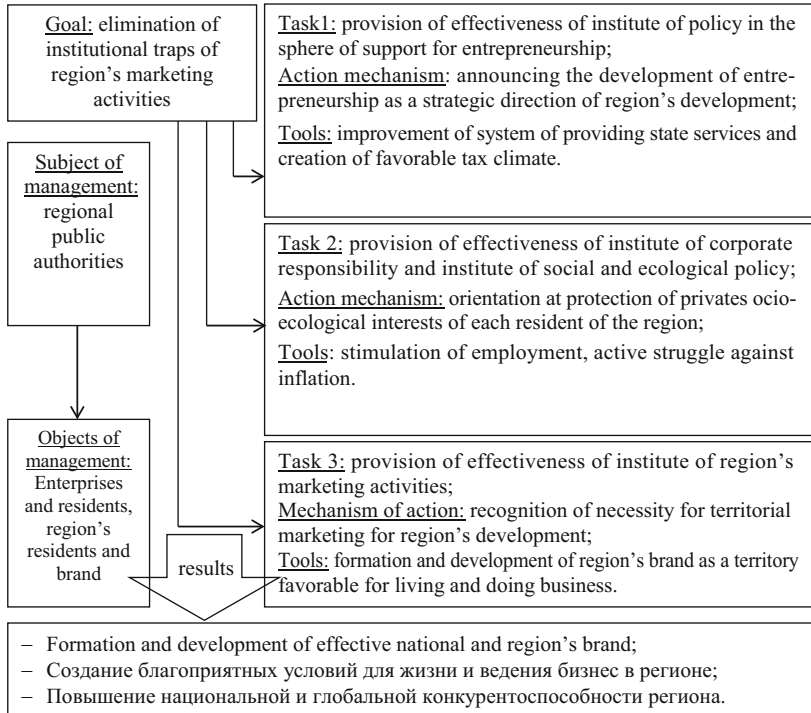


Fig. 2 Institutional model of development of region's marketing activities

4 Conclusion

It should be concluded that the authors specified the logics and structure of the process of formation and overcoming of institutional traps as economic phenomena, which stimulates the development of the concept of institutional economy. The authors also expanded the methodological tools of evaluating the region's competitiveness as a manifestation of efficiency of its marketing activities, due to which this work contributes to development of the concept of territorial marketing.

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Institutionalization of Integration Processes in Education and Formation of Regional System of Innovational Entrepreneurship

Innara R. Lyapina, Alexey G. Zaytsev, Petr N. Mashegov,
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Abstract Integration processes in educational sphere are a long historical process predetermined by informal institutes and ideas on the most rational methods of solving the tasks by persons who make decisions, within specific educational organizations. Application of specific institutes (technological parks, small innovational companies, etc.) is predetermined by the level of development of institutional field of integration process and, largely, by popularity of a certain institute, caused by the state—as it is related to the possibility of participation in certain state programs and receipt of additional financing. Striving for financing led sometimes to appearance of formally existing structures that did not actually influence the development of an educational organization or regional entrepreneurial system. Availability of existing economic objects and structural departments of educational organizations complicates understanding of the role of a certain institute. The problem of determination of rational informal institutes and their further formalization poses special interest, as it allows understanding real moving forces and forms of integration and innovational development of territories. It could be solved within interdisciplinary approach at the joint of economy, sociology, and law.

1 Введение

At present, the concept of “triple spiral” (Etzkowitz 2010) is one of the systemic theoretical approaches to formation of a new-type economy. Knowledge economy supposes coverage and management within the same institutional environment of the whole chain of innovational transfer—from the birth of an idea within fundamental research to its commercialization in the commodities realized in the market and technologies used in practical activities. The system of education, on the whole, and universities, in particular, are “centers of crystallization” around which the

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system of economic relations is formed, related to interaction between different agents, and that should be supported by a corresponding system of institutes.

Traditionally, formation of regional innovational systems and entrepreneurial structures in them is viewed in economic literature as interaction of economic agents that seek various goals. In the process of achievement of these goals, the agents are obliged to jointly use various types of resources, including infrastructural. The latter are given a special role, as universities with their research infrastructure and human capital have unique resources necessary for entrepreneurial community. In its turn, state that has much more possibilities to influence the universities (institutional and financial levers) than regional entrepreneurial systems receives a possibility to influence the development of intellectual potential and infrastructural capabilities of universities and thus sets the desired vector of development of entrepreneurial activity and of region in whole.

Interconnections between university and regional economy and regional system of entrepreneurship were viewed in the works of Pakhomova (2012) and Pospelova (2016). It is noted that the strategy of university's entering regional entrepreneurial systems could be classified according to hierarchical attributes (horizontal and vertical) and according to the character of university's specialization.

At that, it should be noted that from the point of view of practical use, the concept of "triple spiral" is viewed as a nice theoretical generalization rather as direct regulation of actions that allows achieving targeted indicators. This is caused by the following reasons:

- Blurred nature of the notion "regional system of entrepreneurship" and complexity of identification of its peculiar features that would allow positioning of specific regions and finding points of application of efforts for the task of innovative trajectory of development
- Diversity of forms, methods, and goals of integration in the system of education, nontransparency, and weak formalization of a lot of integration practices and presence of informal components within institutionalized forms
- "Scatter" of the institutional field of integration processes with educational organizations, which is expressed in many regulating aspects of this process leaving the framework of competence of regional authorities of state management and being viewed in various spheres of law and forming legal collisions

Integration processes in the system of education are diverse. If we're limited by the problem of innovational transfer and do not dwell on social aspects of interaction, simple enumeration of types of structures within which interaction between entrepreneurial and educational organizations is conducted will include 20 positions: business incubator, technological incubator, center of technology transfer, offices of technology commercialization, innovational technological center, technopolis, scientific laboratories, technological park, center of collective use, center of intellectual property management, R&D institutes, scientific and educational center, construction bureau, center for innovative activities, small innovational enterprises, etc. Within one work, it is not possible to cover all diversities of integration forms. Thus, it is offered to view only the most vivid examples in a

complex mosaic of institutionalization of integration processes in development of regional entrepreneurial systems.

2 Materials and Methods

First of all, it is necessary to find a possibility of typologization of a regional entrepreneurial system. Despite the diversity of classification attributes, it is possible to use the tools of multidimensional positioning for that, offered by Soboleva (2011). Application of this method will allow, on the one hand, taking into account specifics of the research, selecting a flexible system of indicators, and, in the other hand, determining the groups of regions and formulating certain typical strategies for them. At that, during analysis of references, it is necessary to take into account that authors view the regional system of entrepreneurship and trajectory of development as different categories—which is seen in the works of Yushchenko (2014) or Staursky and Glukhova (2009). Sometimes, entrepreneurship is not viewed as a system, and authors just describe its attributes (Rubin 2005).

Institutional analysis should be accumulated within formalized types of integration (small innovational enterprises with educational organizations of higher education) and historically established structural solutions for universities that have stuck to the course for integration of educational and production activities within innovational transfer over the recent 10 years. Small innovational enterprises created with educational organization of higher education are legal entities created according to the Federal Law No. 217 dated August 2, 2009 (FZ No. 217 2009). These economic subjects are also denoted by the term “small innovational enterprises with universities.” They are a vivid example of integration processes in educational sphere between universities and entrepreneurial sector of a region.

From the point of view of development of regional systems of entrepreneurship, attention should be paid to the institutes’ “basic universities” that were introduced within the competition according to the Order of the Ministry of Education and Science of Russia No. 811 dated August 7, 2015 “On competition among educational organizations of higher education for financial provision of the programs of development of federal state educational organizations of higher education from the federal budget in 2016–2018” (Order 2015). However, due to “young age” of this institute, the authors have to limit themselves to considering its institutional peculiarities, as there are no practical results of functioning.

3 Results

Based on the information presented by educational organizations and scientific literature, analysis of institutional and structural solutions of integration process on the chain “education-science-production” in a range of leading Russian universities was performed.

Table 1 shows official statistical indicators for regions of the Central and Siberian Federal Districts for which the quantity of small innovational forms and characteristics of development of region’s various spheres were compared. The official statistical data are obtained from the website gks.ru and the data on the quantity of small innovational companies—from the website of the organization that is authorized to conduct monitoring of small innovational companies (The Federal budget scientific institution “Research and development institute—Republican research scientific and consultation center of expertise” URL <https://mip.extech.ru/index.php>).

Indicators that characterize the state:

E—educational environment of the region:

- O 1—Number of educational organizations of higher education (as of start of academic year)
- O 2—Number of student that study at the bachelor’s, specialist’s, and master’s program, thousand people)

I—innovative direction of the regional system of entrepreneurship:

- I 3—Internal expenses for scientific research and development, RUB million
- I 4—Number of personnel involved in scientific research and development, people

R—region in whole:

- R 5—Gross regional product, RUB million
- R 6—Investments into main capital, in actual prices, RUB million

Results of analysis of the data presented in Table 1 and not included into this article due to its limited volume show that interconnection between the level of regional development, innovative activity of economic subjects, state of educational sphere, and number of small innovational companies is observed during comparison “Moscow—all other.” During comparing the relatively homogeneous region, authentic correlations cannot be found.

Table 1 Interconnection between the number of small innovational companies with educational organizations of higher education, development of the sphere of education, and innovative direction of the regional system of entrepreneurship

Region	Number	Number of SIC	On average	E 1	E 2	I 3	I 4	R 5	R 6
CFD	67	622	9.3	371	1577.9	447,161.2	381,047	18,975,900.1	3,435,974
Belgorod Oblast	3	130	43.3	6	59.2	1790.5	1373	569,414.1	120,391
Bryansk Oblast	4	18	4.5	5	39.5	408.9	931	223,324.3	66825
Vladimir Oblast	1	19	19.0	4	34.9	3878.4	5684	307,486	75,667
Voronezh Oblast	6	46	7.7	16	99	6348.1	10,865	606,667.7	243,260
Ivanovo Oblast	3	6	2.0	7	33.1	643.8	836	157,735.1	29,803
Kaluga Oblast	1	2	2.0	3	24.8	10,296.7	10,570	293,433.8	99,786
Kostroma Oblast	0	0	0.0	3	16.6	92.9	119	143,108.2	27,513
Kursk Oblast	3	4	1.3	10	55.7	3466	2984	272,238	71,743
Moscow and Moscow Oblast	25	223	8.9	262	935.1	402,076	327,285	14,183,791	2,071,867
Oryol Oblast	2	11	5.5	5	33.5	397.4	677	164,525.8	44,931
Ryazan Oblast	5	27	5.4	8	38.5	1472.4	2525	278,731.8	58,210
Smolensk Oblast	2	2	1.0	8	33.6	1052.8	772	225,594.8	56,747
Tambov Oblast	2	29	14.5	4	33.1	2297	1625	235,859.7	112,713
Tula Oblast	2	18	9.0	8	39.2	3090.1	3872	347,060.2	95,435
Yaroslavl Oblast	3	54	18.0	9	39.6	5421.6	6169	360,731.5	76,492
Siberian FD	43	406	9.4	100	677.9	58,435.9	54,151	5,535,449.5	1,440,980
Republic of Altai	1	1	1.0	1	3.5	91.8	144	33,089.9	13,790
Republic of Khakassia	0	0		1	10.7	91.3	232	143,534.2	36,312
Baikal Krai	1	4	4.0	2	30.2	411.5	538	229,782	65,181
Irkutsk Oblast	7	54	7.7	13	89.8	4659.6	4859	796,587	192,458
Kemerovo Oblast	4	29	7.3	8	67.3	1414.8	1475	668,311.9	239,731
Omsk Oblast	6	71	11.8	17	88.7	4169.9	4167	553,242.7	105,786
Tomsk Oblast	4	89	22.3	9	65.1	9702	8914	402,546.1	108,731

4 Discussion

The performed analysis allows concluding that integration processes in educational sphere are a long, historically established process that is predetermined by informal institutes and ideas of the most rational methods of solving the set tasks by the persons who make decisions within specific educational organizations. Organization's management and regional peculiarities are a driving force of integration.

Application of specific institutes (technological parks, small innovational enterprises, etc.) is caused by the level of development of the institutional field of integration process and, largely, by "fashion" for a certain institute. In its turn, "fashion" is formed by the state, as it is related to the possibility for participation in certain state programs and receipt of additional financing. With fashion coming and going, specific practices were institutionalized in the form of generally accepted forms or developed internal documents related to them or were liquidated.

It should be noted that striving for receipt of financing led sometimes to appearance of formally existing structures that did not influence much the development of educational organization or regional entrepreneurial system. The presence of formally existing economic objects or structural departments of educational organizations complicates understanding the role of a certain institute and expedience of export of these institutes into other regions or universities.

In its turn, the problem of determination of rational informal institutes and their further formalization poses special interest, as it allows understanding true moving forces and forms of integration. Such task cannot be solved on the basis of comparing statistical data. It is necessary to collect and analyze a large massive of weakly structured information. Such studies that open actual image of network interconnections between scholars and organizations are rather an object of sociological, not economic sciences.

Results received after the general institutional analysis could be confirmed as a result of analysis of statistical data on functioning of one of their integration institutes—small innovational companies with universities.

5 Conclusions

The performed research allows making the following conclusions:

- Integration processes within educational system and with its external agents are an inseparable element of knowledge economy and predetermine necessity for institutionalization of this process.
- Formal institutes, on the basis of which activation of integration processes in educational systems is offered, are important but not decisive factor of development of innovational transfer.

- Noninstitutionalized practices (informal institutes) require significant labor expenses for determination and have large limitations as to the possibility of interregional import.
- Target setting role of integrated educational and production structures as to regional systems of entrepreneurship is possible but is related to necessity for typification of regions according to the complex of attributes, including ones not controlled by modern bodies of state statistics.
- Appearance of new institutional constructions oriented at forcing the integration processes in educational and entrepreneurial environment of the region (e.g., basic universities) can positively influence the development of certain territories—but only when it has support from informal practices.
- Deeper studies of institutionalization of integration processes in education are related to necessity for interdisciplinary approach at the merge of economics, social science, and law.

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Institutional Traps of Innovative and Investment Activities as an Obstacle on the Path to the Well-Balanced Development of Regions

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Abstract The purpose of this chapter is to study the possibilities and perspectives of eliminating obstacles on the way to well-balanced development of Russian regions. For this purpose, the authors of this chapter perform evaluation of the balance level of Russian regions' development in 2014, conduct analysis of causal connections of unbalanced development of Russian regions, and offer recommendations for solving this problem. Russia is the object for the research, as, in addition to the industrial orientation of economy due to geographical peculiarities, it is peculiar for high level of regionalization. Methodological tools include the proprietary methodology of evaluation of the balance level of region's development and the proprietary methodology of analysis of structural disproportions of regional development as a part of the national socioeconomic system. As a result of the research, the authors came to the conclusion that modern Russia is peculiar for the problem of unbalanced development of the regions. The most important condition for provision of well-balanced development of regions is innovative and investment activities. Thorough study of the specifics of innovative and investment activities of Russian regions led to the conclusion that the most important reason for its weak development is existence of institutional traps, under the influence of which the regions show low level of innovative and investment activities. In order to solve this

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problem, a proprietary institutional model of well-balanced development of regions is offered.

1 Introduction

Irresponsible attitude of humanity to the environment over the recent century and abstracting from negative external effects, related to industrial development, became a reason for a lot of ecological problems. This work offers a scientific hypothesis that modern Russia is peculiar for the problem of unbalanced development of regions. The purpose of this chapter is to verify the offered hypothesis and to study possibilities and perspectives of eliminating obstacles on the path of well-balanced development of Russian regions.

2 Materials and Method

It is possible to distinguish two key aspects of the problem of well-balanced development of regions. The first aspect is related to balancing the socioeconomic and ecological interests of regional development (Koźmiński et al. 2015). At that, the region is viewed as economic and social eco-system (Serebryakova et al. 2015). Development of this system is considered well balanced under the conditions of simultaneous increase of the level and growth of rates of socioeconomic development and preservation of favorable environment (Chen and Lu 2015). Conceptual provision of these aspects is given in the theory of systems and theory of sustainable (Jóna 2015; Bochko 2015; Goh et al. 2015; de Melo et al. 2015; Vasiltsova et al. 2015).

The second aspect emphasizes on the necessity for establishing macroeconomic balance through adjusting the level and rate of socioeconomic development of various regions in a national economic system. Fundamental foundations of this aspect are set within the theory of disproportions of economic growth, within which the methodology of “underdevelopment” whirlpools helps to determine causal connections and regularities of differentiation of the level of regions’ socioeconomic development (Popkova et al. 2013; Skiter et al. 2015; Kravets et al. 2014), et al.

Within the specific methodological instrumentarium of this work, a special proprietary tool of evaluation of the level of region’s development balance is used for verification of the hypothesis; it is based on the following:

$$C_{bal} = (GRP_{pc} * EAP) / LPA, \quad (1)$$

where C_{bal} —coefficient of the balance of region's development;

GRP_{pc} —GRP per capita;

EAP —indicator of economic activity of region's population;

LPA —level of region's atmosphere pollution.

If the value C_{bal} is below 2, this proves existence of substantial imbalance in the region's development. For analysis of structural disproportions of regional development in the national socioeconomic system, this work uses another proprietary methodology that supposes the use of the following formula:

$$C_{struct} = GRP_{lead} / GRP_{under}, \quad (2)$$

where C_{struct} —coefficient of structural balance of development of the country's regions;

GRP_{lead} —sum of GRP of the three regions that are leaders as to the level of GDP per capita in the country;

GRP_{under} —sum of GRP of the three regions that lag behind as to the level of GRP per capita in the country;

If the value of C_{struct} exceeds 2, there are significant structural disproportions of regional development in the national socioeconomic system.

3 Results

Let us evaluate the level of balance of Russian regions' development according to the 2014 data. The basis is economic development of the region. The summary on the indicators of balance of the studied regions' development for 2014 is given in Table 1.

As is seen from Table 1, according to the 2014 data, all selected leading regions show well-balanced development ($C_{bal} > 2$), while development of underdeveloped regions is not well balanced ($C_{bal} < 2$). Let us perform analysis of structural disproportions of regional development in a national socioeconomic system of Russia with the help of the developed proprietary methodology. According to the 2014 data, there are the following estimates: $C_{struct} = (6.3 + 3.7 + 0.3) / (0.5 + 0.4 + 1.0) = 10.3 / 1.9 = 5.4$.

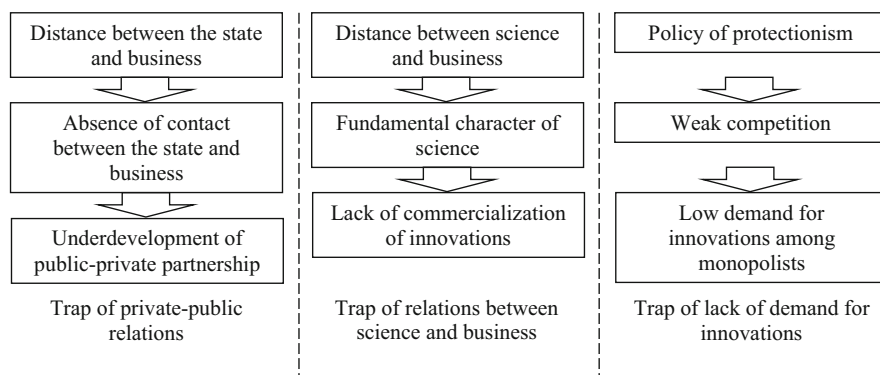
The received value is $C_{struct} > 2$, which shows existence of significant structural imbalance of Russian regions' development. This proves the offered hypothesis and shows that modern Russia has a problem of unbalanced development of regions (Bagautdinova et al. 2014; Alekseeva et al. 2014; Azaryan and Voziyarov 2014; Gareev 2013; Gradstein 2008). The authors of this research determined the three most important institutional traps in this sphere (Fig. 1).

As is seen from Fig. 1, the first institutional trap of innovative and investment activities of Russian regions is related to the trap of private–public relations. The

Table 1 The summary for indicators of balance of the studied regions' development for 2014

Region	Indicators of balance of region's development			
	GRPpc	EAP	LPA	Cbal
Yamalo-Nenets Autonomous Okrug	6.3	1.1	1.4	5.2
Sakhalin Oblast	3.7	1.1	0.3	14.3
Moscow Oblast	0.3	1.0	0.1	4.4
Pskov Oblast	0.5	1.0	0.3	1.8
Stavropol Krai	0.4	0.9	0.7	0.6
Republic of Kalmykia	1.0	1.0	2.0	0.5

Sources: Rosstat (2014, 2015)

**Fig. 1** Institutional traps of innovative and investment activities of Russian regions

second institutional trap of innovative and investment activities of Russian regions is the trap of relations between science and business. The third institutional trap of innovative and investment activities of Russian regions is a trap of lack of demand for innovations. Under the influence of these institutional traps, Russian regions show low level of innovative and investment activities. In order to solve this problem, the proprietary institutional model of well-balanced development of regions is offered, which is shown in Fig. 2.

As is seen from Fig. 2, the purpose of the offered institutional model is to eliminate institutional traps of innovative and investment activities. This requires achievement of the three most important tasks. The first task is eliminating the trap of relations between science and business. The second task is elimination of the trap of low demand for innovations. The third task is related to elimination of the trap of private-public relations.

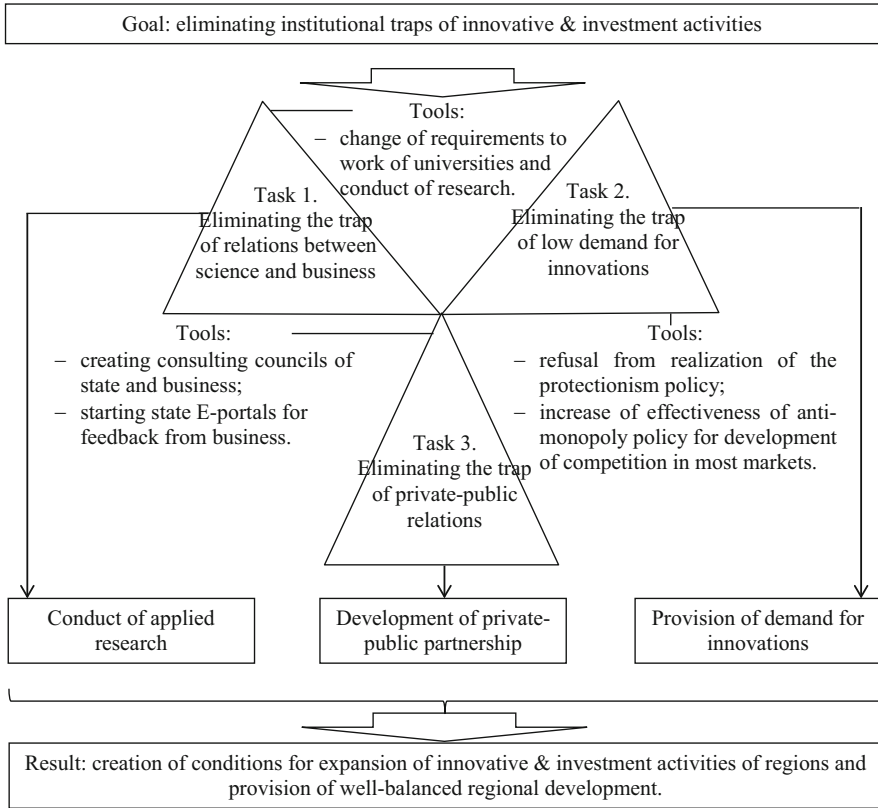


Fig. 2 Institutional model of well-balanced development of regions

4 Conclusion

As a result of the research, it is possible to conclude that institutional traps of innovative and investment activities are a serious obstacle on the path to well-balanced development of modern Russia's regions. The performed research contributes to the development of the theory of systems, theory of sustainable development, theory of disproportions of economic growth, theory of institutional economy, and theory of innovations, which predetermines its high scientific and theoretical significance. The developed proprietary institutional model of well-balanced development of regions is of high practical interest and is recommended for implementation into state policy.

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Institutional Basis for Innovative Development of Belarusian Economy

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Abstract This chapter deals with institutional enforcement of innovative development of Belarusian economy. It describes the theoretical basis for the modern institutionalism formation: traditional institutionalism, neoinstitutionalism, and new institutional economics. Specifics of Belarusian economy are also determined in the chapter. Examples of institutions typology are listed. This chapter emphasizes the absence of common understanding of the paradigm of the institutional development of the Belarusian economy in terms of innovation among the members of scientific community. Problems of institutionalism development are stated. A classification of Belarusian institutions is suggested from the perspective of innovation orientation of economy development. Position of institutional marketing as a market mechanism for efficient operation of institutions is stated.

JEL Codes B52 • O38

1 Introduction

The necessity of innovative economy development intensifies the necessity to reveal the approaches and mechanisms of effective marketplace regulation with regard to social and economic processes interaction. Modern international economic science has accumulated rich theoretical and applied experience and has a wide range of tools and methods of market environment investigation and regulation. From our point of view, institutional theory is the most urgent and corresponds to the modern socioeconomic trends of social development.

The institutional theory has passed certain stages in their development for more than a hundred years of its existence. Traditional institutionalism (see Thorstein Veblen, John R. Commons, and Wesley C. Mitchell) introduces the definition of “institute,” marking out institutions such as the state, law, labor unions, corporations, family, and ethics that influence individual behavior. A. Oleinik singles out

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neoinstitutionalism (see R. Coase, R. Pozner, J. Stieglitz, R. Kapelyushnikov, etc.) and new institutional economics (see O. Williamson, D. North, E. Ostrom). Neoinstitutionalism based on the neoclassicism builds its theory around the propositions of ideal market model and perfect competition. Social institute is investigated with standard economic tools: the individual operates within limited rationality and opportunism. The principle of the economic agent activity is “methodological individualism,” which suggests that individual economic agent acts under the terms of rationality and maximization. New institutional theory bases its postulates on the following facts: the market mechanism is based on the alternatives; the individual is independent and takes decisions on the basis of his/her interests and preferences; the individual is not inclined to choose the optimal and satisfactory result.

Thus, the aim of this chapter is to highlight the problems of institutionalism in the innovative economy of the Republic of Belarus on the basis of theoretical and practical data and also to clarify the components of institutional environment of Belarusian economy.

2 Materials and Methods

2.1 Methodological Approach

The general theoretical and methodological grounds for the work were fundamental researches in the field of institutional support of innovative activity of the Republic of Belarus. Justification of theoretical propositions and reasoning output is based on the implementation of basic scientific methods such as system-functional, historical, logical, legal, socioeconomic, statistical, and mathematical analysis.

2.2 Materials Used

Information and empirical base of the study is presented by the content of monographs, academic presentations of abstracts, research papers, and other publications of local, Russian, and foreign economists, as well as the data portal of the National Center of Legal Information and other official websites. The empirical basis of research consists of the official statistical data of the National Statistics Committee of Belarus, the analytical data published in scientific economic journals and monographs, expert development and evaluation of works of local, Russian, and foreign scientists, as well as author’s own analytical materials and estimations.

3 Results

From the standpoint of institutional economics, subjects of the innovative market space are the institutions that enforce the scope of rules regulating behavior of economic agents in the system of economic relations and therefore determine the level and direction of socioeconomic development of society. In the Republic of Belarus, the scope of rules of economic behavior aimed at development of innovative activity is set by the Law of Republic of Belarus “Regarding State Innovation Policy and Innovative Activity in the Republic of Belarus” (Law No. 425-Z dated 10.07.2012).

A.E. Shastitko determines “institute” as “a set of rules that act as constraints of economic agents’ behavior and streamline the interaction between them, as well as appropriate mechanisms for monitoring compliance with these rules” (Shastitko 2002). Other researchers note that “institutions not only direct the efforts of people, establishing the system of rules and restrictions both on formal and informal levels, but they also form people’s interests, define the parameters of relationships and interactions within companies, between companies and organizations, between business entities and the state” (Lemeshenko 2003).

Belarusian researchers Klyunia and Chernovalov believe that taking into account specifics of Belarusian economy—widespread state intervention into economic processes, national aspect of formation of socially oriented policy of economic growth, transformational nature of its development—most relevant principle is the principle of motivated individual who under the new institutional economics can serve as a basis for research and analysis of the current institutional environment (Klyunia and Chernovalov 2009). The institutional environment can be defined as the set of institutions operating in the country, forming the economic relations between economic entities and the behavior of the individual within the framework of formal and informal procedures.

There are different views on the structure of institutions in the economy. D. North in his theory of institutional change distinguishes the formal institutions, informal institutions, and procedures to detect and prevent behavior that deviates from the accepted norms. S.G. Kirdina considers all of the institutional processes of the society through the perspective of X and Y matrices and distinguishes basic institutes and institutional forms. Basic institutions include economics, politics, and ideology. They are formed within the historical experience of a particular state in a particular area. “Basic institutions form the backbone skeleton of the society, they predetermine the most common characteristics of social situations, determine the direction of collective and individual human action” (Kirdina 2014). Redistributive economy of X -matrix includes the supreme institution of conditional ownership, official labor institute, institute of cooperation, institute of redistribution, and institute of X -efficiency. The structure of the Y -matrix market economy consists of institute of private property, institute of wage labor, institute of competition, institute of exchange, and institute of Y -efficiency. The researcher notes that as a rule, one of the models is dominant in any economy, and institutions of the other

model are complementary thus resulting in dominant and complementary institutions.

Author believes that under conditions of constant exposure of economy to external and internal factors formation of the balance of basic and complementary institutions becomes the most *important area of strategic development of any country*.

Belarusian researcher L.M. Kriukov notes “. . . both the state and the market are sets of institutions that differ in basic institutions or basic elements regulating its major areas—the economy, politics and ideology, of this society model.” In his opinion, Belarusian institutional model is represented with the basic institutional matrix, which includes an additional institutional matrix as “a set of new, established, transitional institutions,” whereas state policies regarding the formation and development of the national innovation system (NIS) are viewed as institutions (Kriukov 2007).

O.E. Bessonova in the framework of transfer of the economy theory includes in institutional matrix basic and compensatory institutions. According to her, the basic institutions are institute of exchange, institute of property, and signal institute (Bessonova 2008). The structure of the compensatory institutions consists of institute of state regulation and social security and institute of market trade and private enterprise. According to the author, these are universal models of cooperation, which complement each other.

In terms of formality and social recognition of institutions, scientists Shakhovskaya, Popkov, Pozdnyakov, Polikarpov, and Litvinova distinguish the following: associative (mechanisms of interests interaction), behavioral (socialization of individuals), cognitive (form social culture), regulatory (prescriptions and prohibitions), and constituent (define the limits of public relations and management on different economic levels) institutions (Shakhovskaya et al. 2015).

Exploring characteristic features of the evolution of Belarusian institutional environment, Ksenzova and Ksenzov (2013) noted its transitional period in development and named a number of specific features peculiar to this period. It is low innovative activity of economic actors. Thus, according to the National Statistical Committee, the number of organizations engaged in research and development decreased from 501 units in 2011 to 439 units in 2015. The number of employees engaged in research and development has fallen from 31,194 people in 2011 to 26,153 in 2015. Gross domestic expenditure on research and development as a percentage of GDP declined from 0.7% in 2011 to 0.52% in 2015. The level of innovation activity of industry organizations has also decreased from 24.3% in 2011 to 21.1 in 2015 (Statistical Yearbook of NSC 2016). Knowledge-intensive GDP decreased from 0.7 to 0.52%.

This situation leads to the need to “import this activity in the form of foreign investment of entrepreneurial kind” (Ksenzova and Ksenzov 2013). Thus, we can see an increase of funding from foreign investors, including foreign borrowings, in the structure of domestic spending on research and development (as a percentage of the total) from 1.2 in 2010 to 1.3 in 2015 (Statistical Yearbook of NSC 2016).

The researchers also noted a low sociopolitical activity of Belarusian citizens, which finds reflection in the small number of civil associations and organizations, and low personal responsibility that forms common national ideology and the system of formal institutions, supervising compliance of individual economic behavior to the established norms. Noteworthy is the prevalence of opportunistic behavior over high-performance work, which is reflected in the main motif in the activities of economic entities. O.E. Sharkova argues that opportunistic behavior of economic entities in the Republic of Belarus provokes the absence of a well-formed competitive environment. Liberalization of the economy provokes positive dynamics of price indices for all stages of product distribution, especially wholesale and retail networks (Sharkova 2013).

P.G. Nikitenko and A.I. Luchenok notice that the institutional environment created by the state does not ensure the effectiveness of the business entities (Nikitenko and Luchenok 2005). In his works, A.I. Luchenok states that government regulation of the Belarusian economy, as a pledge of power, is accompanied by severe centralized redistribution of the gross domestic product. And in case volume of concessional resources reduces, the effectiveness of the business entities will decrease. At the same time, Luchenok (2005) emphasizes the particularity of the Belarusian socio-oriented management system and suggests the thesis of feasibility of the development model with dominant state, aimed at the maximum development of state institutions regulating economic life and ensuring tight control of current economic activity of enterprises.

4 Discussion

Modern economic tendencies show a steady trend of strengthening the desire of public authorities, businesses, and scientific sphere, not only to attain sustainable economic growth but also to improve its quality primarily due to the transition to an innovative path of development.

The modern approach to institutional development of Belarus, reflected in numerous scientific studies, is based on the neoinstitutionalism theory and new institutional economics. In Belarus, there is routine legal tradition as a specific feature of the post-Soviet institutional environment. However, it is obvious that a clear position of the scientific community with regard to the institutional paradigm of Belarusian economy development is not yet developed, since the formation, transfer, borrowing, embedding, and cultivation of new institutions is a very complex and dynamic process. This situation is caused by the necessity of harmonious correlation of two polar communitarian ideologies as well as the need for innovation and economic development. Thus, the most relevant principle here is the principle of motivated individual who can serve as a basis for research and analysis of the current institutional environment in the new institutional economy.

The research allowed finding the absence of a clear vision among Belarusian scientists regarding the classification of basic market institutions and interaction

mechanisms. Taking into account the position of domestic and foreign scientists, we propose to identify the following basic institutions of Belarus: economy, politics, ideology, and culture. Since innovative development is the most important area of economic activity in Belarus, the basic economic institute includes the following institutions: institute of public administration, institute of innovative activity, institute of innovative infrastructure, institute of intellectual resources, and institute of innovative activity. Market institute should also be emphasized since its most important function is to determine coordination mechanisms of innovation activities of economic entities on the basis of ethics system. And institutional marketing can act in conjunction with the institutional changes as an effective market mechanism regulating and smoothing imbalances of innovative economy.

5 Conclusion

Thus, the aim of this chapter to highlight the problems of institutionalism in the innovative economy of the Republic of Belarus on the basis of theoretical and practical data and to clarify the components of institutional environment of Belarusian economy was successfully reached as we managed to detect critical issues of institutionalism from the point of view of institutional theory and innovative activity. Author also suggested an up-to-date typology of institutions of Belarus. The results of the research can serve as a guide for the further formation of institutional environment of innovative activity of the Republic of Belarus and development of market mechanism to secure its effective functioning.

Acknowledgements The research was carried out in the framework of Grant BRFFI—RGNF-2015 No. G15R-004 dated 04.05.15.

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Institutional Aspects of Investment Attraction into Sustainable and Competitive Development of Region

Irina S. Zinovyeva, Irina A. Avdeeva, and Yulia P. Usova

Abstract The purpose of this chapter is to study institutional aspects and perspectives for investment attraction into sustainable and competitive development of region by the example of modern Russia. As a lot of attention is paid to modern Russia, the object of the research is a region at the level of the national economy as a separate territory in the state. The authors analyze the causes of low sustainability and low competitiveness of economy of modern Russia's regions and determine that these causes are closely connected, which creates a possibility for their complex solution. For that, the authors distinguish two most perspective directions of investment attraction into the regional economy of modern Russia: infrastructure and innovations; the corresponding recommendations are offered, and the institutional model of investment attraction into sustainable and competitive development of region is developed. As a result of the research, the authors come to the conclusion that development of these institutes led to increase of investment attractiveness of infrastructural and innovational projects, which ensures growth of production capacities, modernization of technologies and equipment of regional entrepreneurship, and reduction of production means. As a result, this leads to increase of living standards of Russian regions' population and growth of their attractiveness for doing business, thus raising their sustainability and competitiveness.

JEL Codes E02 • F12 • O18 • Q01

1 Introduction

With development of globalizing and integrating processes in modern economy, the tendency for its regionalization grows—under this influence, its basic element is region. Topicality of sustainable and competitive development of region causes no

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doubts and is explained by interest of the region for the purpose of supporting high living standards of the population and of the global economy for the purpose of reduction of disproportions of its development and increase of growth rate. Sustainability and competitiveness of economy are traditionally viewed as different notions and are studied separately by modern scholars.

However, in practice, the most important problem on the way of provision of sustainable and competitive development of a region is the complexity of investment attraction. That's why the working hypothesis of this research consists in the possibility of a complex solution of the task of achieving sustainable and competitive development of a region with the help of creation of favorable investment climate. The purpose of this chapter is studying institutional aspects and perspectives of investment attraction into sustainable and competitive development of region by the example of modern Russia.

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

At the level of the global economy, a region is a totality of territorially separate countries. In this research, the emphasis is made on modern Russia, so the object of the research is a region at the level of the national economy as a separate territory in the state. In both cases, region is a meso-level economic system, the foundations of functioning and development of which are viewed in detail in Okabe and Kam (2017), Stojčić et al. (2016), Kravchenko (2016), Straková et al. (2016), etc.

Sustainable development of economy, including regional, is well-balanced development of its social, ecological, and economic sphere (Korchagin et al. 2014)—i.e., establishment of dynamic and long-term optimal state of the economic system (Zinovyeva et al. 2016a), at which improvement of one sphere does not damage other spheres (Zinovyeva et al. 2016b).

Competitiveness of region is its position as compared to other regions (Popkova et al. 2016), which determines the possibility for selling the products at a place of residence (Skiter et al. 2015), doing business, placing investments (Kravets et al. 2014), and tourism. Methodological apparatus of the research is based on the use of the method of analysis of causal connections and other general scientific methods of the research: synthesis, induction, deduction, and formalization.

3 Results

According to statistical and analytical information of the leading ranking agencies, regions of modern Russia differ as to the level of competitiveness, which varies from 1.73 to 5.00 points (AV Group 2015), and the level of sustainability of development, which varies from 1 to 24 points (Interfax-Era 2017). This shows

unbalanced development of the Russian economy, which violates its integrity and slows down its general growth rate.

The most important reasons of low sustainability of regions' economy of modern Russia include industrial direction of economy and application of aged technologies and equipment in industrial production that predetermine development of economic sphere to the damage of ecological and social sphere (Ria Ranking 2017).

The main reasons for low competitiveness of the Russian regions are underdevelopment of infrastructure and low innovative activity, which leads to low living standards of the population and unfavorable business climate (Expert RA 2015). The causes of low sustainability and low competitiveness of the Russian regions' economy are closely connected, which creates a possibility for their complex solution.

For this, the work offered developing two directions of investment attraction into the regional economy. The first direction: infrastructure. For increase of attractiveness of infrastructural projects for private investors, it is necessary to develop the institute of public-private partnership (PPP). This supposes the following measures:

- Expansion and official announcement of a list of infrastructural objects, investments into which are to be in the form of PPP;
- Improvement of the system of state order by means of maximization of the use of online auction as the most just form of such order due to minimization of transaction costs and stimulation of healthy competition among private investors;
- Clear limitation and regulation of rights and obligations of private investors and state during realization of infrastructural projects in the form of PPP;
- Providing private investors with the possibility to charge payment for the use of created infrastructural objects for the purpose of provision of profitability of their projects;
- Development of financial institutes (insurance, lease, crediting) of support for the PPP system, which are indirect but important for attracting private investments into infrastructural projects.

Second direction: innovations. For increase of attractiveness of innovational projects for private investors, it is necessary to develop the institute of science and education. This supposes the following measures:

- Establishment of connection between education and science and business for timely modernization of educational programs and provision of applied value of the performed scientific research. This could be stimulated by creation of economic clusters and other integrating associations;
- Expanding the volume of state order for training of specialists who are in the largest demand in the labor market;
- Stimulating innovational activity of private entrepreneurial structures by provision of nonmaterial (e.g., inclusion into a prestigious ranking of innovations-active business, which stimulates strengthening of their brands) and material (e.g., provision of tax and credit preferences) privileges from state;

- Increasing the volume of financing of R&D projects, and, what’s most important, allocation of assets to scholars, not scientific organizations to which they belong, as in the opposite case (as we see now), there are not enough assets left for payment for the scholars’ work;
- Determining the top-priority spheres of scientific research and implementation of innovations into companies’ activity. For example, in the context of provision of sustainable development of region, these include studies in the sphere of resource saving and protection of environment.

The offered institutional model of attracting investments into sustainable and competitive development of region is shown in the general form in Fig. 1.

As is seen from Fig. 1, development of the above institutes leads to increase of investment attractiveness of infrastructural and innovational projects, which, in its turn, ensures growth of production capacities, modernization of technologies and equipment of regional entrepreneurship, and reduction of production waste. As a result, this leads to growth of living standards of Russia’s regions population and growth of their attractiveness for doing business, thus increasing their sustainability and competitiveness.

4 Conclusions and Recommendations

It could be concluded that the offered hypothesis is proved; the problems of increase of sustainability and competitiveness of the regional economy of modern Russia could be solved with the help of creation of favorable investment climate, which is stimulated by the offered authors’ recommendations on development of the corresponding institutional environment.

The performed research is based on and contributes to development of the modern theory of sustainable development of economy, the theory of

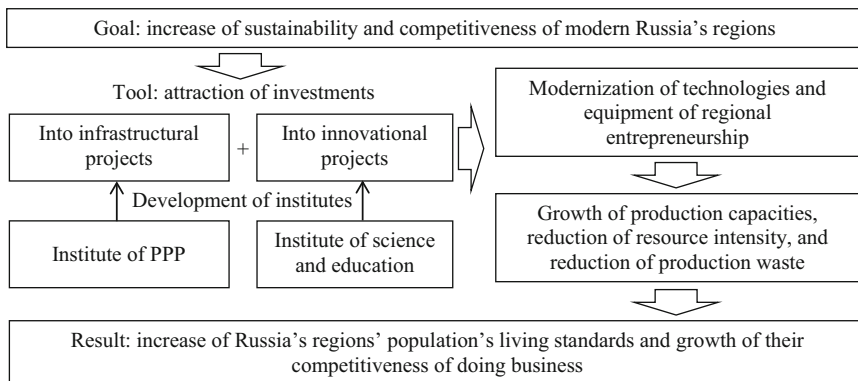


Fig. 1 Institutional model of attracting investments into sustainable and competitive development of region

competitiveness, theory of regional economy, and theory of institutional economy, which determines its fundamental scientific novelty. The applied significance of the authors' conclusions and recommendations is determined by the possibility and expedience of their realization in the regions of modern Russia for the purpose of increase of their sustainability and competitiveness.

It should be noted that in the interests of provision of maximally wide application of this research, its object is not a separate region but Russia's regional economy on the whole, which is a reason for a generalized character of the offered recommendations, limits the possibilities of their practical application, and determines necessity for their further specification on the basis of each region where they are to be implemented.

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Institutionalization of Successful Practices of Place Marketing Within Russian–European Cooperation

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Abstract The purpose of this chapter is to study the process of institutionalization of successful practices of place marketing within Russian–European cooperation. During the conduct of the research, the authors use methods of scientific research such as systemic, problem, and factorial analysis, as well as regression and correlation analysis. The authors perform the analysis of current level, dynamics, factors, and problems of provision of competitiveness of Russian–European territories in the conditions of world economy globalization, determine the character and level of influence of public authorities’ marketing on competitiveness of territories of Russia and Europe, and determine possibilities and perspectives of institutionalization of successful practices of place marketing through cooperation of Russia and Europe. The authors come to the conclusion that territories of modern Russia and Europe are characterized by low level of competitiveness, one of the most important reasons for which is insufficient institutionalization of place marketing that could be provided by development of Russian–European cooperation. For that, they

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offer to use the developed mechanism of institutionalization of successful practices of place marketing through Russian–European cooperation.

JEL Codes O17 • M31

1 Introduction

Under the conditions of globalization, world economy is peculiar for high mobility of production factors and entrepreneurial structures, which leads to fierce fight at the global arena between modern territories for the possibilities and sources of growth and development. Internal orientation of economic systems and deregulation often leads to reduction of their attractiveness for targeted economic agents and slowdown of rates of growth and development. This predetermines high topicality of the problem of maximization of competitiveness of territories and necessity for management of the process of its achievement. The authors seek the goal of verification of this hypothesis and study of the process of institutionalization of successful practices of place marketing within Russian–European cooperation.

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

Place marketing, which is a process of formation of certain attitude toward them and behavior of targeted economic agents in the interests of maximization of the level and rate of economic growth and development, is actively studied by modern scholars. As of now, there are directions of place marketing such as provision of high investment attractiveness of the territory (Romanova et al. 2015), creation of favorable business climate for development of entrepreneurship (Laghzaoui and Abakouy 2015), and strengthening of territory's brand as a favorable place for living and tourism (Akopov 2013).

Institutional aspects of study of place marketing, related to strengthening of economic systems of its successful practices in normative and legal provision of economic activities with accumulation of knowledge and experience in this sphere, are viewed in the works by Popkova et al. (2013), Pozdnyakova et al. (2015), among others. Substantiation of the necessity for study of advantages of interaction and cooperation of economic systems in the context of economic globalization and integration is viewed in many works by modern authors: Dzhandzhugazova et al. (2015), Popkova and Tinyakova (2013), Popkova (2014), Skiter et al. (2015), and Kravets et al. (2014), among others.

During study of the current level, dynamics, factors, and problems of provision of competitiveness of Russian and European territories in the globalizing world economy, the authors use methods of scientific research such as systemic, problem,

and factorial analysis. In the process of determination of the character and level of influence by public authorities' marketing on the competitiveness of Russian and European territories, the authors use the method of regression and correlation analysis, with the help of which they analyze the character and closeness of connection between indicators of competitiveness and place marketing.

That is, dependence of y on x in the model of paired linear regression $y = a + bx$ is determined; here, the indicator b is the most interesting, as it reflects this dependence. Correlation coefficient is also calculated. Information and analytical basis of the research consists of the Global Competitiveness Report 2015–2016, presented at the World Economic Forum. The indicators of competitiveness of territories in this work are as follows:

- 1.09: load of state regulation of territory's economy (y_1);
- 1.10: effectiveness of legal framework of the studied territory (y_2);
- 1.12: transparency of state economic policy (y_3);
- 2.01: level of development of infrastructure on the studied territory (y_4);
- 8.01: level of development of financial market on the studied territory (y_5).

Level of the use of place marketing in the process of management of economic development of the territory (11.08) is an independent variable x . The objects of the research include Russia and economically peripheral countries of Europe: Malta, Hungary, Slovenia, and Romania. Time frames of the research are 2011–2015.

3 Results

The data for statistical analysis of competitiveness of Russian and European territories are given in Fig. 1.

To determine the causes of this phenomenon, let us view the factors of territory's competitiveness, which are the volume of expenses for its provision (volume of investments) and effectiveness of their use (territorial marketing) (Table 1).

The data for regression and correlation analysis for determination of the character and the level of influence by the public authorities' marketing on competitiveness of Russian and European territories are given in Table 2.

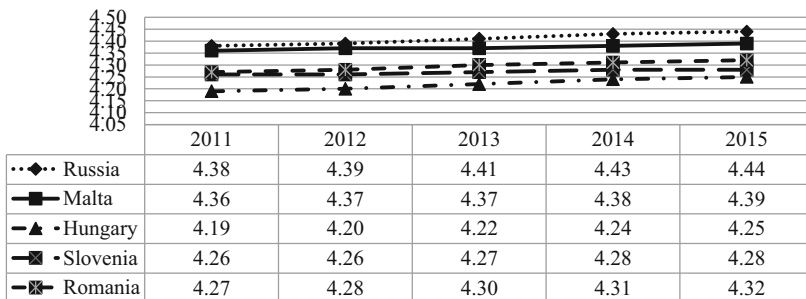


Fig. 1 Dynamics of competitiveness of studied Russian and European territories in 2011–2015. Source: Schwab (2016)

Table 1 Dynamics of factors of competitiveness of the viewed Russian and European territories in 2011–2015

Countries	Volume of investments, yearly change (%)					Effectiveness of place marketing (points)				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Russia	10.20	6.00	0.90	−2.60	−7.60	4.29	4.29	4.29	4.30	4.30
Malta	−18.00	3.00	−1.70	7.30	21.40	4.18	4.18	4.19	4.19	4.20
Hungary	−1.30	−4.40	7.30	11.20	1.90	3.88	3.89	3.89	3.90	3.90
Slovenia	−4.90	−8.80	1.70	3.20	0.50	4.27	4.28	4.28	4.29	4.30
Romania	2.90	0.60	−6.80	3.10	7.70	3.98	3.98	3.99	3.99	4.00

Source: Focus Economics (2016a, b, c, d, e), Schwab (2016)

Table 2 Values of indicators of competitiveness and effectiveness of place marketing of the viewed Russian and European territories in 2015

	Russia	Malta	Hungary	Slovenia	Romania
Load of state regulation of territory's economy (y_1)	2.9	3.5	2.6	2.6	3.1
Effectiveness of legal framework on the studied territory (y_2)	3.2	3.8	3.2	2.9	3.3
Transparency of state economic policy (y_3)	4	4.5	3.4	4.1	3.9
Level of infrastructure development on the studied territory (y_4)	4.1	4.4	4.7	4.9	3.6
Level of financial market development on the studied territory (y_5)	4.4	5.4	4.5	3.6	4.1
Effectiveness of place marketing (x)	4.3	4.2	3.9	4.3	4

Source: Schwab (2016)

Based on the data of Table 2, we received the following models of paired linear regression:

- $y_1 = 0.24 - 1.93x$. Value of coefficient b in this model shows that with increase of effectiveness of marketing of the studied Russian and European territories by 1 point, the load of state regulation of territory's economy reduced by 1.93 points;
- $y_1 = 0.19 + 1.49x$. Value of coefficient b in this model shows that with increase of effectiveness of marketing of the studied Russian and European territories by 1 point, effectiveness of legal framework on the studied territory grows by 1.49 points;
- $y_1 = 1.54 + 2.41x$. Value of coefficient b in this model shows that with increase of effectiveness of marketing of the studied Russian and European territories by 1 point, transparency of state economic policy grows by 2.41 points;
- $y_1 = 0.54 + 2.08x$. Value of coefficient b in this model shows that with increase of effectiveness of marketing of the studied Russian and European territories by 1 point, the level of infrastructure development on the studied territory grows by 2.08 points;
- $y_1 = 0.37 + 1.96x$. Value of coefficient b in this model shows that with increase of effectiveness of marketing of the studied Russian and European territories by

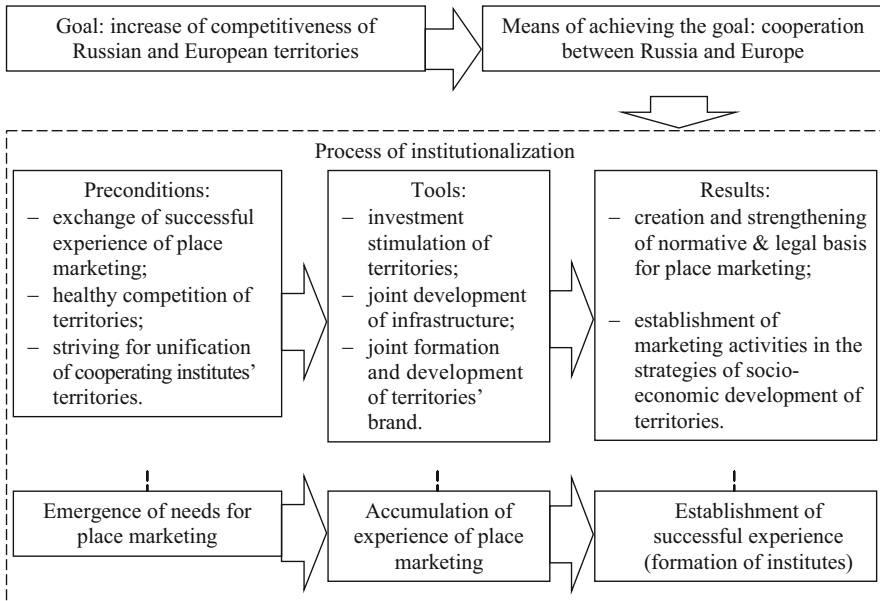


Fig. 2 Mechanism of institutionalization of successful practices of place marketing through Russian–European cooperation

1 point, the level of financial market development on the studied territory grows by 1.96 points.

The received values of correlation coefficients for these models are over 99%, which shows high closeness of the studied indicators and statistical significance of regression models. This shows that marketing activities of the public authorities influence positively the development of the studied Russian and European territories, providing the growth of their competitiveness.

Therefore, there is a need for further institutionalization of successful practices of marketing of the studied territories. This could be stimulated by Russian–European cooperation, for which the corresponding mechanism is offered (Fig. 2).

4 Conclusions and Recommendations

Thus, the author’s hypothesis is proved—Russia and Europe are peculiar for low competitiveness, which could be increased by institutionalization of successful practices of place marketing within their interaction and cooperation.

Theoretical significance and scientific novelty of the performed research is explained by development of provisions of the institutional economy concept and place marketing concept through explaining the process of institutionalization of

successful practices of place marketing within interaction and cooperation of economic systems by the example of Russia and Europe.

Practical significance of the received authors' conclusions and compiled recommendations consists in the applicability of the developed mechanism of institutionalization of successful practices of place marketing through Russian–European cooperation to their economic practice.

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Influence of Demographic Transitions on the Formation of Sustainable Institutional Environment of Universities

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Abstract In the modern system of higher education, the issue of sustainable institutional environment is very topical. Special competitive advantage of any developed state is related to development of human potential. Demographic transition is a source of institutional changes. As of now, the sphere of higher education is a key to provision of sustainable economic growth of a country in the long term. This article shows that demographic approach was an important source of the formation of sustainable institutional environment of universities.

Problem Setting The role of demographic transitions in socioeconomic development was studied by such Russian scholars as B. Urlanis, D. Valentey, S. Kapitsa, V. Borisov, A. Vishnevsky, A. Antonov, V. Yadov. N. Vishnevskaya, Z. Zayonchkovskaya, et al. These authors, representatives of different sciences, contributed into the study of the demographic aspect of the formation of sustainable institutional environment. The problems of the system of education were the object of interest of classics of economic sciences—A. Smith and A. Marshall—who viewed education as a source of public capital and acquired knowledge and skills as a part of national wealth. These ideas were developed in the theory of institutional environment, developed by T.U. Schultz, G.S. Becker, G. Psaharopoulos, P. Teixeira, and R. Solow.

At that, specifics of modernization demographic processes in the sphere of education and peculiarities of institutional university environment require conceptual consideration and provision of efficient demographic transition to the formation of sustainable institutional university environment.

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1 Analysis of Potential Studies and Publications

The problem of determination of influence of demographic transitions on the formation of sustainable institutional university environment is not studied properly—in particular, in Russia.

The purpose of the research is to determine the influence of demographic transitions on the formation of sustainable institutional university environment.

2 Main Results of the Research

In recent years, the problem of interrelations of demographic indicators and economic growth acquires large significance under the influence of tendencies in the developing world. Due to this reason, reformers should take into account relations between economic development and instability of age structure, which is a result of developing demographic transition (Popkova 2007).¹

After World War II, quick growth of population, which was a result of a large gap between reduction of death rate and continuing growth of birthrate, has been observed in many Asian countries. Starting from the mid-1960s, most countries, including Latin America and Middle East, went into unprecedented growth of population. At that, their population doubled within 25 years.

Many developed countries expect reduction of population by 2050, while a demographic boom is observed in developing countries. In the weakest and most vulnerable regions (due to unfavorable climate, limited resources, or unfavorable location), the forecasts for demographic catastrophe are pessimistic.

The system of education is a structural element of the socioeconomic system, which functions within the large system of public production as a primary element of society's driving force in economy and outside of it and as a determining element of evolution of socioeconomic system (Agarkova 2015). At the same time, it is a rather complex institute—from the point of view of structure. Higher education is aimed at provision of deep knowledge on the basic subjects and of extensive knowledge on special subjects that are oriented at future profession (Vishnevsky 2015; Zheltenkov 2014).²

While in the 1930s <15% of the age group entered universities and in the 1970s–1980s, 25–30%, in many countries of the world, this number reaches 70–90% (Table 1).

Thus, in the USA, 82% of the age group enter the university, in Finland 94%, and in South Korea 96%; at the same time, 91% of the age group enter universities in

¹Popkova, E.F. Formation of the concept of new economic growth in the globalizing world: monograph / E.G. Popkova / VolSTU.—Volgograd, 2007.—184 p.

²Zheltenkov, A.V. Educational services market as a factor of development of modern economy: monograph / A.B. Zheltenkov, V.V. Demina, E.A. Yalaletdinova.—M.: MSEU, 2014.—54 p.

Table 1 Share of the age group that enters universities in various countries, %

Country	2006	2015
Australia	73	75
Great Britain	64	59
Greece	74	91
Germany	51	48
Denmark	67	80
Israel	57	62
Spain	62	68
Italy	57	67
Canada	58	62
Lithuania	73	75
Netherlands	51	63
New Zealand	77	79
Norway	81	76
Russia	69	76
USA	83	82
Finland	88	94
France	56	56
South Korea	85	96
<i>For comparison</i>		
Brazil	21	39
India	12	15
China	16	26
Mexico	22	26

Source: World in numbers (2007, 2015). M.: Olimp-Business PJSC

Greece—the country with completely different socioeconomic conditions, as compared to the given states.

In China, over 8 years (2007–2015), this share grew from 16% to 26%, and the total number of university students exceeded 30 million people. In India, only 15% of the age group enter universities (3% growth over 8 years), which is more than 20 million people.

As of the year-end 1927, there were 90 universities in Russia (RSFSR), with 114,200 students. In 1940, the number of universities reached 481, and the number of students in them constituted 478,100—i.e., it grew by four times over 13 years. In the 1960s, the number of students in the RSFSR reached 1.5 million, and exceeded 3 million in the 1980s, but then reduced to 2.8 million in 1990.

In 1996, the law “Concerning Higher and Postgraduate Vocational Education” was passed; the legislator, seeing that the number of state-subsidized students decreases, set a minimal threshold of 170 per 10,000 people, which equaled 2.5 million. Quick growth of student groups began in 1995, and even the 1998 crisis did not stop that wave: in 2000, 965 universities of the Russian Federation (of which 607 were state) had 4.7 million students, of which 2.6 million were state subsidized; in other words, the number was smaller than in the RSFSR in 1990. The peak of

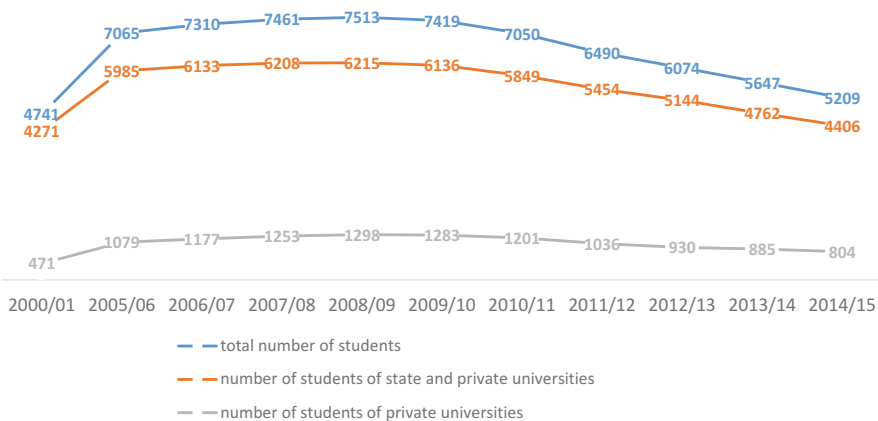


Fig. 1 Number of students of Russian universities in 2000/2001–2014/2015 academic years, people. Source: Rosstat http://www.gks.ru/free_doc/new_site/population/obraz/vp-obr1.htm

student contingent of 7.5 million people was observed in 2008, which became the year of “breaking point”—starting from that time, the number of students began decreasing, due to demographic reasons (Sazonov et al. 2015).

In 2015, Russian universities had 5.2 million students, of which 2 million were state subsidized (Fig. 1).

According to data of Table 1 and Fig. 1, the number of students with higher education grew by 0.9 times from 2000 to 2015. This tendency could be explained by growth of well-being of the Russians in the first decade of the twenty-first century.

Introduction of paid higher education reduced requirements to applicants. A commercial component dominates in the educational services market. This allowed satisfying the need for higher education. As to the number of universities’ students per population, Russia is ranked very high. Still, it violated the necessary proportions of higher, secondary, and primary education (Mikhel and Morozova 2010).³

Increase of the number of educational establishments that provide service of higher education by 1.7 times is a very natural phenomenon—from the point of view of effectiveness.

The system of modern universities is largely oriented at economic effectiveness which led to appearance of centers of postgraduate studies, additional professional education, and special faculties that function on a paid basis in the structure of state universities. This process was especially quick in the 1990s (Morozova and Kozyreva 2011).⁴

³Zheltenkov, A.V. Educational services market as a factor of development of modern economy: monograph / A.V. Zheltenkov, V.V. Demina, E.A. Yalaletdinova.—M.: MSEU, 2014.—55 p.

⁴Zheltenkov, A.V. Educational services market as a factor of development of modern economy: monograph / A.V. Zheltenkov, V.V. Demina, E.A. Yalaletdinova.—M.: MSEU, 2014.—56 p.

Table 2 Distribution of higher educational establishments for ownership forms (as of beginning of academic year)

Indicator	1995/1996	2005/2006	2015/2016
Number of higher educational establishments, total	762	1108	896
State	569	655	530
Private	193	413	366

Source: http://www.gks.ru/bgd/regl/b03_33/IssWWW.exe/stg/d010/i010980r.htm

Table 3 Dynamics of change of the share of “extramural students” in the total number of students and load of university lecturers for cities, thousand people

Indicator	1995/1996	2005/2006	2015/2016
Total number of students (thousand people)	2790.7	7064.6	4766.5
Intramural form of study	1752.6	3508.0	2379.6
Including extramural	855.8	3032.0	2237.8
Share of extramural students in total students (%)	30.6	42.9	46.9
In-state universities	794.6	2348.3	1667.7
Share of extramural students (%)	29.9	39.2	41
Ratio extramural/intramural students	48.8	0.86	0.94

Source: http://www.gks.ru/bgd/regl/b03_33/IssWWW.exe/stg/d010/i010980r.htm

According to the data of Table 2, in 1995–2015 the number of state and private higher educational establishments grew. The number of state educational establishments decreased by 0.9 times, while the number of private educational establishments grew by 1.89 times. Growth of the number hasn’t led to growth of quality of university graduates’ training. Of all Russian universities only several dozen prepare highly professional bachelors and masters. Due to low level of salaries of academic staff, which is still below the average salary for the region, the load grows—as there’s necessity for additional hours and overtime.

In 2015/2016, the number of extramural form students in Russian universities equaled 3.5 million people (Table 3).

On the whole, in 1995–2015, the number of students grew from 2,790,700 to 4,766,500.

Quicker growth of extramural education could be explained by objective necessity for a job—as a source of income for payment for studies. A lot of intramural students have a job nowadays. On the one hand, this reduces the quality of studies but, on the other hand, allows young people to adapt to realia of modern economy from student years.

The state preserves the function of setting the number of higher educational establishments—for example, merging effective with ineffective ones or creating new commercial universities, establishment of the selection procedure for obtaining a scientific degree, and regulation of diplomas and foreign universities’ scientific degrees’ recognition; the state also develops the system of payment for lecturers’

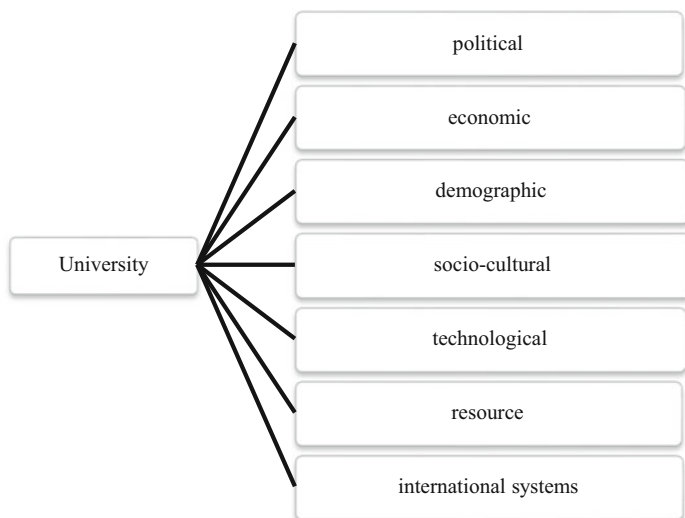


Fig. 2 External institutional university macro-environment. Source: compiled by the authors

work (Popkova et al. 2015).⁵ In 2012, there were 1500 universities and 2200 branches in Russia. Though, this year was marked by the order on closure (including “voluntary”) of a large number of branches.

University’s microenvironment includes factors of external institutional environment, which include political, economic, demographic, sociocultural, technological, resource, and international systems (Fig. 2).

Large changes took place in the demographic sphere. They were so serious and deep that could not but touch all aspects of peoples’ lives—in particular, institutional university environment.

Direct participation of state in the development of innovational economy could be realized as a result of taxation that stimulates innovative activities, financing of various innovational projects, and developments and issue of grants on a competitive basis.

Direct and indirect state regulation of innovative activities ensures the balance of interests of economic activities’ subjects, creation and support of innovational infrastructure, as well as formation of innovational climate.

Institutional environment of higher education is formed by the system of institutes that influence economic activities of economic subjects.

Unlike the state, private sector directly influences the formation of innovational economy but in two ways: firstly, conducting necessary R&D and works on

⁵Zheltenkov, A.V. Educational services market as a factor of development of modern economy: monograph / A.V. Zheltenkov, V.V. Demina, E.A. Yalaletdinova.—M.: MSEU, 2014.—60 p.

improvement of the technology of products manufacture, which lies in the basis of innovations, and secondly, conducting practical realization in economic practice.

Nowadays, despite the growth of the number of technological parks and innovational and technological centers in Russia, the number of small enterprises in scientific and technical spheres does not increase. The main reason for that is that there is no infrastructural link that ensures the process of creation and development of small enterprises at the initial stage. As the world practice shows, this stage of establishment and initial development of small technological enterprises cannot be effectively performed without state support, as it is very expensive.

Financial support during creation and functioning of such centers could be provided by ministries, departments, and public authorities, as well as the fund for support for development of small enterprises in scientific and technical sphere, and the Russian fund of technological development. Additional financing could be found by attracting non-budget means for the creation of infrastructure of companies' incubation and partnership with international investment structures and programs.

Global institutional transformation will allow ensuring development of new progressive forms of innovative activities, one of which is small enterprises, united into a cluster—which raises competitiveness and capability to react to change of market demand.

Development of specific offers, aimed at the improvement of the comprehensive institutional environment, and the offered measures for activation of innovational process on the basis of the formation of innovational cluster in the region within the application of the institutional approach will allow specifying strategic landmarks of innovational development of regional economy and regional innovational policy from the point of view of the declared modernization of development.

Thus, creation of favorable institutional conditions will allow raising the sustainability of university environment. It is necessary to form offers for increase of effectiveness of federal and regional demographic policy. The task of public authorities and society consists in changing the ratio of existing forces for demographic well-being of Russia.

3 Conclusions

For many countries, the policy of the future is related formation of the society based on progress of knowledge, as only scientific and technical progress will allow developing countries to provide optimal employment and high level of macroeconomic indicators.

Demographic dividend is totality of socioeconomic advantages which allow receiving additional profits from reduction of birthrate (replacement of a large number of children by “one child quality”) and increasing the average life span with preservation of high labor capacity and consumer potential of population.

In our opinion, nature of unfavorable peculiarities of institutional environment in the system of higher education leads to very quick “shocking” change of institutional environment. Economic subjects, which are not yet accustomed to one institutional environment, are subject to another institutional environment. We think that it is necessary to be more careful in the issue of rationality and timeliness of institutes’ change. It is necessary to develop mechanisms of realization of formal norms.

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Analysis of Transaction Costs in the Formation of Accounting Information

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Abstract The purpose of the article is to determine the influence of analysis of transaction costs on formation of accounting. Methodological basis of this research is comprised of the method of systemic and structural analysis, synthesis, classification, induction, and deduction. The research is performed within the concept of transaction costs and concept of managerial accounting. The authors determine conceptual foundations of the theory of transaction costs, perform analysis of contractual relationship of contractors, perform grouping of transaction costs, and view the process of management of costs and their accounting. The authors also offer the structure of management account for debit which uses free code of account, for the purpose of reflecting information on transaction costs, and provide an example of coding of information for account “Transaction costs of contractual relationship.” As a result of the research, the authors make a conclusion that effective managerial solutions on efficiency of deals require from management of enterprises (associations of enterprises) clear and timely information on transaction costs for each contract. This information could be provided within managerial accounting of contractual relationships.

1 Introduction

Any enterprise works with contractors on the basis of contractual relations. Performance of any contracts is related to costs, which are called transaction costs; at that, volume of these costs depends not only on the character and volume of the deal but on the method of its conclusions and support.

At that, enterprise suffers transaction costs in the situation when it is a seller of goods, works, and services and in the situation when it's a buyer of resources.

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Therefore, the object of increased interest of economists has been transaction costs. Certainly, any organization faces the issue of necessity for reduction of these costs, which is stimulated by their analysis and accounting.

Correct, timely, and full reflection of costs of contractual relationship on a separate control accounting in view of necessary analytics is determined by the results of analysis of transaction costs, their correct classification, and their belonging to specific deals. The purpose of this article is to determine the influence of analysis of transaction costs on the formation of accounting information.

2 Materials and Method

The basic unit of analysis in the theory of transaction costs is the act of economic influence, deal, or transaction. The category of transaction is understood very widely and is used for denoting an exchange of goods and legal liabilities with short-term and long-term deals, which may require detailed documentary form or simple mutual understanding of the parties.

Costs and losses which may accompany this interaction are called transaction costs (Kapelyushnikov 2016). According to V.V. Radaev, transaction costs are costs related to access to resources, transition, specification, and protection of ownership rights and conclusion and servicing business relations (Radaev 1998).

R. Coase states that existence of transaction costs will push the traders to implement various forms of business practice which provide reduction of transaction costs in case when costs for development of these forms are smaller than economy on transaction costs. Selection of partners, type of contract, and selection of the offered products and services—everything could be changed (Coase 2007).

R.I. Kapelyushnikov characterizes transactions according to the following attributes: level of specificity, level of regularity and duration of deals, level of uncertainty, level of measurability of a deal's characteristics, and level of interdependence of deals (Kapelyushnikov 2016).

Methodological aspects of implementation of managerial accounting into accounting practice of modern enterprises, the sense of the mechanism of accounting of costs in accounting and ways of its improvement, and the character of influence of analysis of [transaction costs on the formation of accounting information are viewed in the works of Yusufov et al. \(2010\), Yusufov \(2011\), Yusufov and Aliyeva \(2015\), Aliyeva \(2012, 2013\), Chernovanova and Golubeva \(2015\), and Voloshina \(2011, 2015\).](#)

Methodological basis of this research is comprised of the method of systemic and structural analysis, synthesis, classification, induction, and deduction. The research has been performed within the concept of transaction costs and the concept of managerial accounting.

3 Results

The performed analysis of contractual interrelations of contractors from contractual relations of contractors allowed distinguishing the following groups of transaction costs: costs of conduct of external inspections at enterprise, costs of relations with representatives of public authorities, costs of negotiations with business partners, costs of violation of contractual relations, costs of mistrust, costs of power game, costs of problems of registration and licensing, costs of access to financial resources, costs of access to premises and material resources, costs of access to sources of business information, and costs of legal and audit support.

The existing system of accounting cannot provide an enterprise with sufficient information on transaction costs, and this allows an enterprise to develop a strategy for their possible economy. Without complete analysis of transaction costs and application of their correct classification, as well as development of the methodology of managerial accounting of contractual relationship, an accountant wouldn't be able to separate them from general economic and production costs. This aspect is very important for any organization, as transaction costs may reach the scale at which conclusion of a contract cannot be performed due to economic inexpediency of contract conclusion.

Costs management and accounting should be built according to the centers of responsibility with the use of the system of budgeting—at that, transformational and transaction costs should be distinguished in the budgets.

An example of production centers of costs is production departments of organization (the department of main and supplementary production). Analysis of their effectiveness is conducted on the basis of the method of normative costs, according to which each production center must have a determined normative ratio of consumed resources and the volume of issued (manufactured) products. The manager of production center of costs controls costs of the center and is responsible for the controlled deviations of their volumes from the normative ones (Molchanov 2008).

For each center of responsibility, articles of costs, fixed with this department, are determined, regulations of budgeting are determined, and business processes are determined. A task of creation of the system of budgeting is increase of effectiveness of work of enterprise, based on regulation of production and business processes of organization. Accounting of costs for responsibility centers and building budgets allows receiving authentic and full information on internal economic processes and results of enterprise's activities: evaluating the level and dynamics of transaction component, performing planning and control, analyzing deviation of expenses from the planned ones, forming information basis for making managerial decisions, stimulating increase of effectiveness of information exchange, reducing expenses, and preventing the opportunistic behavior (Anikina 2010).

For the purpose of quick and full accounting of expenses on contracts, we offer to develop a work plan of accounts in the system of managerial accounting of contracts and assigning each contract with separate code. If we deal with an

association of enterprises—e.g., holding—a code is assigned to contracts concluded within an association and with external interested groups.

The plan of accounts of business accounting of economic activities of organizations and the instruction on its application, passed by the Decree of the Ministry of Finances of the RF dated October 31, 2000, No. 94n, envisage a possibility for the formation of expenses for usual types of activities on accounts 20–29; 20–39 (Sidorova 2009).

Thus, for the purposes of managerial accounting, organizations may introduce new control accounts, using free codes of accounts. Based on the system of subaccounts, set by the plan of accounts and instruction on its application, organizations determine the list of the used subaccounts, combining, excluding, or adding—if necessary—new subaccounts and their codes. Coding of information on expenses' accounts is to be performed within contracts by types and groups of costs (including transaction costs), levels of management, and character of accounted money flows.

For the purpose of reflection of information on transaction costs, each contract may have a homonymic control account, using the free code of the account. The following structure of account on debit might be used:

- Two initial symbols—code of control account
- Third and fourth symbols—contracts on the levels of management (internal or external interrelations, i.e., interrelations within the group of enterprises of an association or with external contractors)
- Fifth and sixth symbols—name of contractor (internal contractors, groups of enterprises; external contractors, suppliers, tax bodies, etc.)
- Seventh symbol—type of contract (contract of simple obligation, etc.)
- Eighth and ninth symbols—group of transaction costs (costs of external inspections at enterprise, costs of power game, etc.)
- Tenth symbol—type of transaction costs (costs of negotiations, costs of measurement, etc.)
- Eleventh symbol—type of accounted money flow

Thus, coding will allow receiving information on transaction costs with vivid representation of which specific contract they belong to and will allow determining real financial result of performing certain obligations. Writing off the transaction costs from the credit side of account “Transaction costs of contractual relationship” to the debit side of accounts 20 “Main production” and 23 “Supplementary production” within the contracts takes place after the studied period, when financial result for each contract is provided and managerial accounting is formed. After the end of the contract, we receive the final financial results, and in the process of performance of contractual relations, we receive intermediary result.

Let us view an example of coding of information on account “Transaction costs of contractual relationship.” An enterprise received order for supply of manufactured meat products into municipal hospitals of the city. The sum of contract equaled RUB 23 million. The assets are transferred to operating account of enterprise. Conclusion of contract required expenses of RUB 46,000.

During coding of information, it is necessary to take into account the following data: code of account, e.g., 27 “Transaction costs of contractual relationship”; code of management level, 01 (higher management of association); code of contractor which is assigned to each enterprise or person (group of enterprises or persons) with which contracts are concluded (in our case, it’s 132); code of contract, 02 (contract of simple obligation); code of transaction costs by the types, 02 (costs of negotiations); code of transaction costs by the groups, 03 (costs of negotiations with business partners); and code of accounting of accounted money flow, 01 (accounted money flow from main activities).

An enterprise has to have a plan of document flow for the contracts which includes the following elements: name of the document, successive stages of its processing (covering the transfer of the document from the account department of one structural department to account department of another one, and then to the centralized account department), terms of processing of document at each stage, and list of responsible officials. Application of the plan of document flow will allow forming accounting information on contracts. The system of documents of contractual relationship should include the documents reflecting all revenues and expenditures, including transaction costs, and characterizing financial results on each contract; documents reflecting forecast of revenues and payments on contracts; documents characterizing financial state and reflecting changes in the structure of assets and liabilities for contracts.

4 Conclusion

Thus, enterprises are subjects of economic relations in contemporary market environment. Each company faces the certain types of transaction costs in the process of its activities. For the purpose of effective managerial decision on efficiency of the deals, the management of enterprises (associations of enterprises) requires clear and timely information on transaction costs on each contract.

This information may be provided within managerial accounting of contractual relationship. At that, it is necessary to distinguish transaction costs in the totality of general expenses of enterprise and to classify them—which is possible only with detailed and complete analysis of this economic category.

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Top-Priority Institutes of Development of Problem Regions

Vera I. Menshchikova, Aleksey V. Sayapin, and Margarita A. Aksenova

Abstract The purpose of the article is to determine top-priority institutes of development of problem regions by the example of modern Russia. The authors analyze the structure of regional economy of modern Russia, determine top-priority directions of development of problem regions, and develop institutional model of development of problem regions. As a result of the research, the authors come to the conclusion that development of problem regions requires stimulation of their internal development—activation of entrepreneurial activities, increase of innovational activity, and attraction of investments.

1 Introduction

At the global level, disproportion of economic growth of various regions is clearly expressed, which is a reason for realization of multiple programs of support for underdeveloped regions for the purpose of reduction of differentiation of the level of economic development of components of the global economy. At that, macro-economic issues of disproportion of economic growth of regions within one country are not studied enough. Thus, there is actuality of development of new, more effective measures, aimed at development of problem regions and turning them from subsidized into self-financed.

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,

DOI 10.1007/978-3-319-60696-5_35

2 Literature Review

Disproportions in development of regions at macro-economic level, as at the global level, appear due to difference in regional conditions, which include geographical location, accessibility of financial, human, and other resources, general conditions for economy related to tax regime, state regional policy, etc. (Salvati et al. 2016).

Economic system (national and global) cannot harmoniously develop under the conditions of disproportion in development of regions (Samburova 2014). Despite the fact that national economies, interested in maximization of rates of economic growth и development, are inclined to generalization of the level and rate of economic growth of leading regions on the whole economy (Ohlan 2013), it develops with average regional rate (Manić et al. 2012) or is even at the level of the most underdeveloped regions (Surd et al. 2011).

Regions could be conventionally divided into three categories: regions-donors, self-financing regions, and problem regions (Jofre-Monseny 2014). Regions-donors (or leading regions) are regions which not only support themselves but have excesses which are directed into the federal budget and then—for support for problem regions (Baker et al. 2014).

Self-financing regions are regions which support themselves, do not require support, and do not provide help for other regions—i.e., do not have excesses (Batabyal and Nijkamp 2014). Problem regions, which are also called regions-recipients and underdeveloped regions (Stephens et al. 2013), are characterized by lower level of economic development and show lower levels of economic growth as compared to other regions (Batabyal and Beladi 2015).

There is close direct connection between the quality of institutional environment and the level and rate of development of the region (Ketova and Ovchinnikov 2014), as successful functioning and development of entrepreneurial activities in the region require corresponding institutes (Sedlacek and Gaube 2010). Differences in institutional environment are a significant factor of differentiation of the level of development of various regions (Popkova et al. 2013; Morozova and Popkova 2014).

3 Unresolved Issues

Analysis of publications on the topic of the research showed that the level of study of the given problem is rather high. The issues of disproportions of development of regions within national economy are given a lot of attention of modern scientists from various countries of the world. The scientists also actively study the issues related to emergence and existence of problem regions. Institutes of development of the region are also sufficiently elaborated by modern researchers.

At that, issues of development of problem regions remain unsolved. At present, the role of institutional environment in the development of problem regions is not

studied, and top-priority institutes of development of problem regions are not determined, which causes necessity for conduct of further research in this sphere.

4 The Research Objective

This article offers a scientific hypothesis that the reason of economic underrun of problem regions is weak institutional environment, and their development requires corresponding institutes. The purpose of the article is to verify the offered hypothesis and to determine top-priority institutes of development of problem regions by the example of modern Russia.

5 Method of the Research

In order to determine presence, depth, and dynamics of disproportions of development of regions of Russia, the authors use the method of comparative analysis and analysis of statistical information. In order to determine perspective directions of development of problem regions, the authors use the method of structural correlation and functional and institutional analysis. During the conduct of the research, the authors use general scientific methods of the research—synthesis, induction, deduction, and formalization.

6 Key Research Findings

Let us analyze the structure of regional economy of modern Russia. For that, let us study dynamics of gross regional products (GRP) per capita in various regions of Russia in 2005–2013 (Fig. 1).

As is seen from Fig. 1, there is a significant underrun of regions of Russia from Moscow Oblast, which shows disproportions of development of Russian economy. It should be noted that this underrun grew during 2005–2013. Thus, GRP per capita in Kaliningrad Oblast in 2005 constituted 83% of the similar indicator of Moscow Oblast, and in 2013—76%, i.e., underrun grew by 7%.

Underrun of Volgograd Oblast from Moscow Oblast grew by 10% during 2005–2013, of Stavropol Krai—by 9%, Saratov Oblast—by 10%, Chelyabinsk Oblast—by 29%, Novosibirsk Oblast—by 18%, and Amur Oblast—by 10%. According to the 2015 data, 60 out of 85 regions of Russia are the problem ones, i.e., they cannot fulfill obligations before their population and receive federal subsidies for execution of the budget (Regions of Russia. . . 2015).

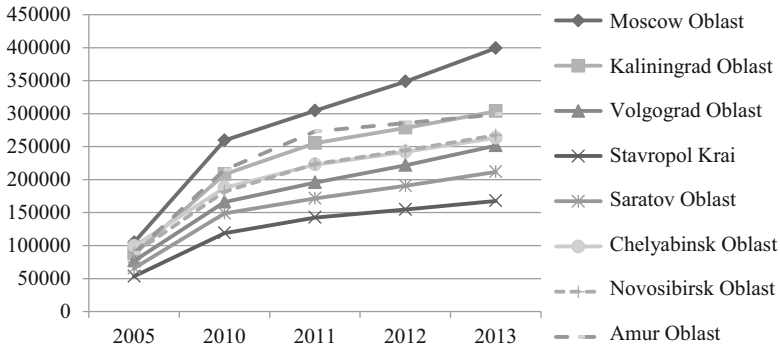


Fig. 1 Dynamics of GRP per capita in various regions of Russia in 2005–2013, RUB. Source: Regions of Russia... (2014)

Table 1 Main indicators of development of Moscow Oblast of Russia in 2005–2013

Indicators	2005	2010	2011	2012	2013
GRP	708,062	1,832,867	2,176,795	2,440,283	2,733,117
Use of leading production technologies	12,771	11,686	15,159	14,310	14,458
Investments into fixed capital	181,260	394,284	449,666	516,872	574,601
Number of enterprises	195,025	224,181	236,263	235,814	243,124

Source: Regions of Russia... (2014)

In order to determine perspective directions of development of problem regions, let us view factors of growth of the leading region of Russia—Moscow Oblast (Table 1).

Based on the data of Table 1, correlation analysis was performed, and strong and direct connection between gross regional product of Moscow Oblast and use of leading production technologies (97%) and between investments into fixed capital (98%) and number of enterprises (99%) was found. This shows that these factors contribute significantly into the development of one of the leading regions of Russia.

Main barriers for the development of entrepreneurship in problem regions are high level of monopolization of most regional markets, low level of accessibility of credit resources, and complexity of receipt of state services. Low level of competition in the market is a reason for high barriers for entering the market and hinders appearance of new players in it.

Without accessible credit resources, small and medium business cannot develop and loses its competitiveness. At present, credit resources are rather expensive in Russia, despite high competition between banking establishments. Accessibility of state services in Russia is also very low. The procedure of registration of business is rather complicates, and receipt of other types of state services is accompanied by significant spending of time and assets.

Implementation of innovations in problem regions is hindered by lack of connection between science and education with production, complexity of registration of innovations, and weak stimuli for implementation of innovations. Despite a high level of development of science and education in Russia, there is no connection between R&D institutes and real production. That’s why new innovations are not implemented into activities of business.

Procedure of registration of innovations is rather complicated—it requires a lot of time and money, which makes it unattractive for business. Peculiarities of doing business in Russia, especially in problem regions, related to low competition, orientation at intermediary role of business, etc., stipulate weak stimuli for implementation of innovations.

In order to eliminate the stated barriers, it is necessary to develop corresponding barriers. That’s why this research offers institutional model of development of problem regions presented in Fig. 2.

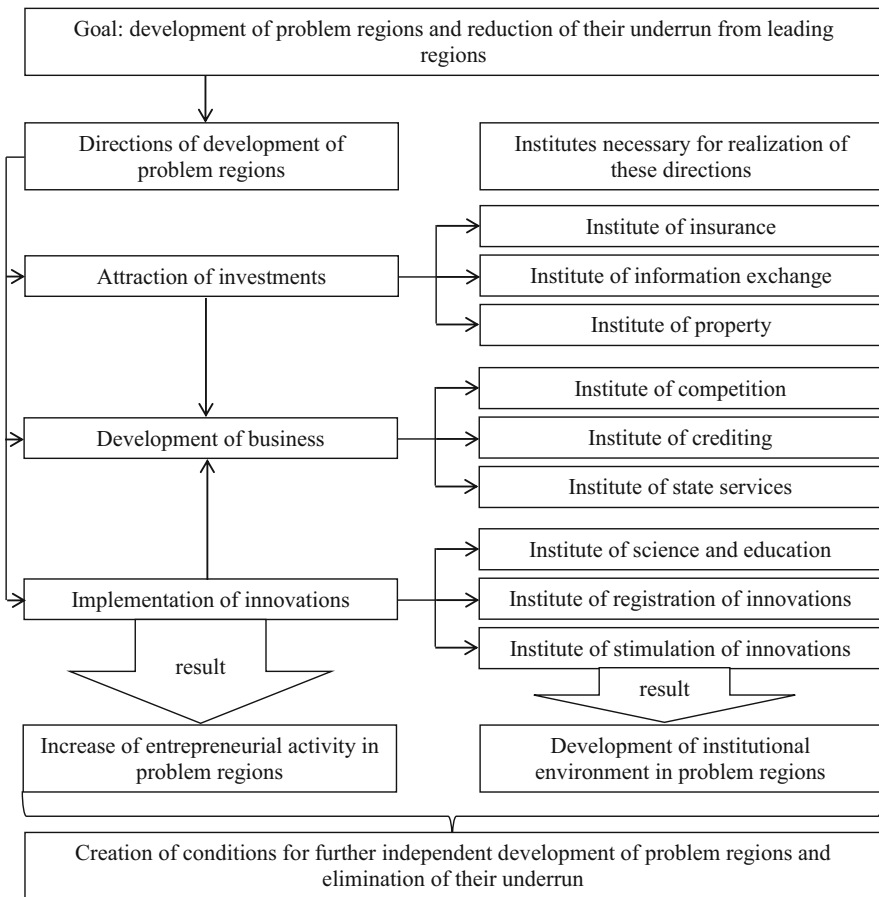


Fig. 2 Institutional model of development of problem regions. Source: compiled by the authors

As is seen from Fig. 2, the purpose of the created model is development of problem regions and reduction of their underrun from leading regions. As a result of realization of the stated directions of development of problem regions, there will be increase of entrepreneurial activity in problem regions, and as a result of development of corresponding institutes—development of institutional environment in problem regions. As a result, conditions for further independent development of problem regions will be created, and their underrun will be eliminated.

7 Conclusion

As a result of the research, the offered hypothesis is proved—the reason of economic underrun of problem regions is weak institutional environment, and their development requires corresponding institutes. For that, the authors developed an institutional model of development of problem regions and determined top-priority institutes of development of problem regions: institute of insurance, institute of information exchange, institute of property, institute of competition, institute of crediting, institute of state services, institute of science and education, institute of registration of innovations, and institute of stimulation of innovations.

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Organizational Evaluation of Integration Processes in Innovational Environment of Industrial Corporation

Elena V. Sibirskaya, Oksana A. Khokhlova, and Lilia A. Mikheykina

Abstract The authors substantiate methodology of organizational evaluation of integration processes in innovational sphere of industrial corporation, oriented at establishment of connections between organizational, economic, and production indicators. This methodology is adaptable; ensures the selection of system of indicators and rules of evaluation of results, association of accounting objects with data sources, and setting of the process of accounting depending on indicators; and ensures complexity and comparability of evaluation. It is shown that this methodology is peculiar for usage of the method of expert evaluations for the purpose of determination of adequate quantitative indicators and level of harmonization of all experts' opinions.

JEL Codes D 92

1 Problem Setting and Its Relation to Important Scientific or Practical Tasks

Integration processes in innovational environment of industrial corporations are intensive and multi-aspect, requiring deep and wide research. Integration processes evolve, transform, change character of relation between their members, and lead to

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool*

of Global Crisis Management, Contributions to Economics,

DOI 10.1007/978-3-319-60696-5_36

replacement of traditional economic mechanisms by new ones. In order for this process not to take place spontaneously, there's necessity for reliable foundation which ensures development and implementation of practical decisions. It is obvious that existing situation requires certain actions aimed at activation of integration processes in innovational environment of large companies.

2 Analysis of Recent Publications in the Topic

The research was conducted with involvement of rather wide list of sources which could be subdivided into two blocks (scientific publications of domestic and foreign scientists; publications of official documents and speeches, which include official issues of statistical nature).

Block 1 Significant contribution into study of problems of innovations and innovative activities was done by Russian and foreign scientists: Anisimov and Sirotkina (2008), Zavlin et al. (1998), Santo (1990), Stroeva (2011), etc. Problems of integration and integration processes are viewed in the works of the following Russian and foreign scientists: Vinslav (2003), Dementyev (2011), Roy and Tretyak (2008), Sibirskaya (2004), Yakutin Y.V., etc. Significant influence on solving the problems of development of industrial corporations was performed by Inozemtsev (2015), Ivanov et al. (2012), Radygin (2004), etc.

Block 2 Strategy of innovational development of the Russian Federation until 2030 (national innovational system 2015) and analytical documents (World Investment Report 2015)

3 Formulation of the Purposes of Research

The purpose of the research consists in solving scientific and practical problem of development of integration processes on the basis of development of substantiated theoretical and methodological approaches to study of these phenomena in innovational environment of industrial corporation. The purpose and logics of the research predetermined the setting and successive solving of the following tasks—compiling methodology of organizational evaluation of integration processes in innovational environment of industrial corporation.

4 Setting the Main Results of Research with Their Substantiation

Organizational evaluation is systemic monitoring of information on activities of enterprise and/or its specific subsystems for determining possible problems with functioning for the purpose of determination of the methods for their elimination. During conduct of organizational evaluation, the main purpose is not only to determine the existing problems but to determine the most precise sources of their emergence and possible consequences which will most probably take place under the influence of the determined factors or under their timely determination and neutralization.

Organizational evaluation is initial actions during conduct of measures for perfection of activities of industrial corporation, which leads to determination and formulation of the list of specific goals and tasks subject to performance.

Originality of organizational evaluation consists in the fact that, firstly, at the beginning of the research, it is possible to determine problems, select the vector of research, and plan measures for improvement of activities; secondly, after the end of the research, it is possible to determine the correctness of initial hypothesis; thirdly, it is possible to draw conclusions regarding existing gaps and offer specific substantiated ways of solving them in view of peculiarities of industrial corporation and its internal and external environment.

In our opinion, organizational evaluation of activities of industrial corporation is totality of various lists of functions and actions directly related to establishment of interconnection within industrial corporation with coordination and external influencing factors.

Let us build methodology of organizational evaluation of integration processes in innovational environment of industrial corporation on establishment of connections between organizational, economic, and production indicators of interconnected enterprises.

Methodology of organizational evaluation of integration processes in innovational environment of industrial corporation (Fig. 1) is oriented at establishment of connections between organizational, economic, and production indicators.

5 Conclusions

Thus, integration processes in innovational environment of industrial corporation are influenced by large number of factors, but these influences are not similar. For determination of significance of influence of all the above factors on integration processes in innovational environment of industrial corporation, expert evaluation was conducted. Experts included leading specialists of industrial corporations. All factors were ranked according to 10-point scale, but 10 points were assigned to the

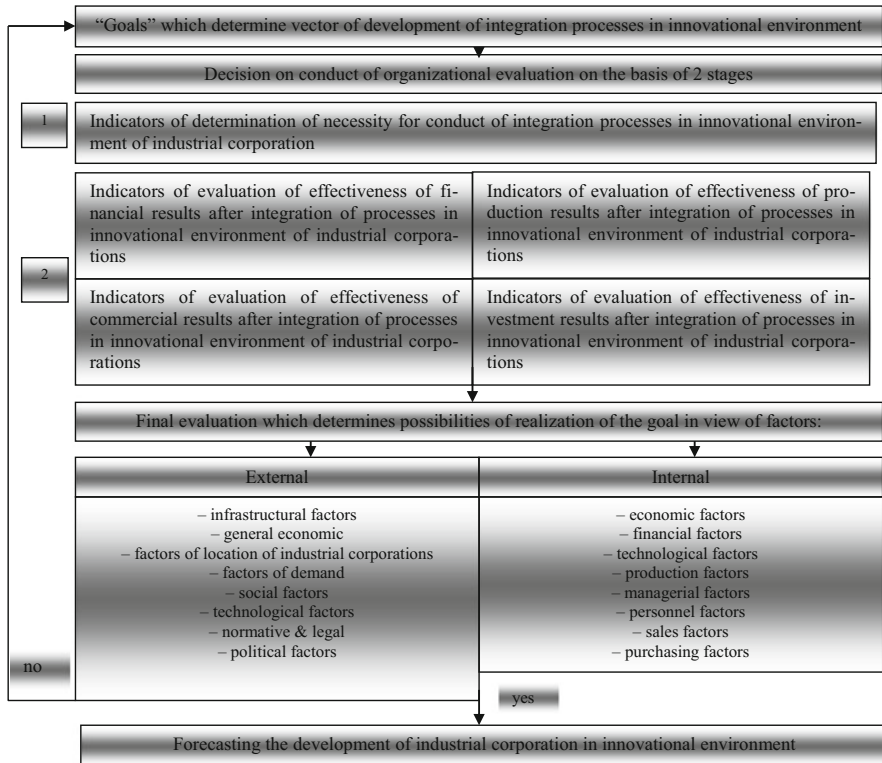


Fig. 1 Methodology of organizational evaluation of integration processes in innovational environment of industrial corporation

factors which influence integration processes in innovational environment of industrial corporation to the greatest extent.

Verification of the received data allowed forming main conditions of methodology of organizational evaluation: (1) realization of possibilities of alternative use of indicators, (2) tracking and ranking of integration attributes as to the presence of direct or indirect reproduction of alternative means of innovational activities in industrial corporation, and (3) creation of stage-by-stage algorithm of organizational evaluation.

The offered indicators of determination of necessity for conduct of integration processes in innovational environment of industrial corporation and evaluations of results of financial, production, commercial, and investment components of organization’s activities after conduct of the measures will allow not only evaluating factual state but forecasting perspective vectors of development.

For determination of significance of influence of all the above factors on integration processes in innovational environment of industrial corporation, expert evaluation was conducted. Experts included leading specialists of industrial corporations. All factors were ranked according to 10-point scale, but 10 points were

Table 1 Ranking score of internal factors which influence integration processes in innovational environment of industrial corporation

Factors	Coefficients of factors						Ranking score
	Experts						
	1	2	2	4	5	6	
Economic and financial	0.21	0.24	0.22	0.23	0.22	0.24	0.23
Technological and production	0.30	0.33	0.35	0.30	0.32	0.32	0.32
Managerial and personnel factors	0.23	0.24	0.22	0.20	0.24	0.22	0.22
Sales and purchasing factors	0.26	0.19	0.21	0.27	0.22	0.22	0.23
Result	1	1	1	1	1	1	1

Table 2 Ranking score of external factors which influence integration processes in innovational environment of industrial corporation

Factors	Coefficients of factors						Ranking score
	Experts						
	1	2	2	4	5	6	
Infrastructural	0.26	0.20	0.26	0.22	0.18	0.23	0.23
General economic	0.24	0.25	0.26	0.23	0.27	0.25	0.25
Location of IC	0.07	0.08	0.07	0.09	0.08	0.07	0.08
Demand	0.20	0.21	0.19	0.22	0.21	0.20	0.20
Social	0.05	0.07	0.06	0.06	0.07	0.08	0.06
Technological	0.08	0.08	0.06	0.09	0.07	0.06	0.08
Normative and legal and political	0.10	0.11	0.10	0.09	0.12	0.011	0.10
Total	1	1	1	1	1	1	1

assigned to the factors which influence integration processes in innovational environment of industrial corporation to the greatest extent. For the purpose of determination of right quantitative evaluation and level of harmonization of all experts' opinions, we calculated ranking score of external and internal factors which influence integration processes in innovational environment industrial corporation. The received result 0.75 allows considering expert evaluation to be coordinated (Tables 1 and 2).

According to ranking score (Tables 1 and 2), external factors which influence integration processes in innovational environment of industrial corporations include general economic (level of prices, inflation level, quantity of population, positive dynamics of investments, etc.). Internal factors which influence integration processes in innovational environment of industrial corporations include technological and production (assortment, level of diversification, modern progressive technologies, availability of production and technological connections, etc.).

The developed methodology is adaptable, as it ensures selection of the system of indicators and rules of evaluation of results, association of accounting objects with data sources, and setting of the process of accounting depending on indicators and provides complexity and comparability of evaluations.

Acknowledgments The article was prepared within the framework of the Russian Humanitarian Science Foundation in 2017 (Grant No. 17-02-00216).

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Peculiarities of Innovative Activities in the Low-Tech Sector

Marina Artemieva, Svetlana Kuznetsova, Yuriy Bakhtiarov, Sergey Yashin, and Dmitriy Khavin

Abstract The concept of innovation is traditionally associated with high-tech sectors of economy. So, programs that are being developed in the frameworks of the reorientation of the Russian economy to an innovation-based development practically exclude from the attention other economic sectors. The fact that in a modern world innovation activity is a key factor of successful business and even of company survival not only in high-tech industries but also in any other area of economy is often ignored.

Low-tech industries, also referred to as “traditional,” have always been the basis of economic life. They provide most of the employment and because of its multiplicity are the main source of GDP. In the coming era of innovation economics, the normal functioning of the enterprises of this sector can't be effective without dynamic innovation activity. Therefore, it is important to explore and take into account the special nature of that activity in this sphere.

1 Introduction

Innovation theory has been developed very well by Russian and foreign researchers, such as G. E. Goldstein, P. Draker, J. Schumpeter, V. G. Medinsky, G. Chesbro, R. A. Fathutdinov, U. P. Morozov, S. D. Ilenkova, and others.

Problems associated with the special nature of innovations in low-tech industries in the works of Russian specialists are covered quite poorly. Among foreign

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scientists, the most famous are H. Hirsch-Kreinsen, T. Hadzichronologu, F. Malerba, S. Klepper, K. L. Simons, N. von Tunzelmann, and V. Acha.

In the papers of the modern scientists, the peculiarities of low-tech sector vital for innovation activity are not covered enough. Also, model of the innovation process for the low-tech enterprises is not clarified.

2 Low-Tech Sector in Russian Economy

The following research is based on a popular modern foreign literature statement—innovation activity in low-tech industries is completely different from the same activity in high tech (P. Draker, N. von Tunzelmann, V. Acha, and others). This statement proposes the need for new tools of innovation management. Such tools should reflect the innovation peculiarities determined by the R&D (research and development) intensity level of the industry. Thus, we have to explore such peculiarities for low-tech sector.

Let's consider the notion of the R&D intensity level and specify the object of the research, tracing the borders of the low-tech sector. Terms and methods connected with definition of R&D intensity level of an industry are not standardized yet. The most common indicator, suggested by the Organization for Economic Cooperation and Development (OECD), is used to measure the ratio of the amount of direct and indirect R&D expenditure to the total turnover of a company or a business sector.

The authors of this paper have conducted the cluster analysis of Russian industries with the method of hierarchical classification in terms of direct and indirect R&D expenditures. The results (Fig. 1) let us allocate three clusters. We can assume that they correspond to three sectors of different levels of R&D intensity: low tech, middle tech, and high tech.

To determine the borders between high-tech and low-tech sectors, we have clustered data with the help of *K*-means method; the results are introduced in Table 1.

The distances between elements of the cluster representing low-tech sector are small and slightly variable—that indicates a sufficient homogeneity.

3 Model of Innovation Process in Low-Tech Sector

Revealed by the authors, some connections of low-tech companies with economic environment (in the aspect of low-tech innovations) are introduced at the picture (Fig. 2).

Low-tech companies play the role of the intermediary between high-tech sector and customers. High-tech enterprises generate the bulk of new knowledge. But the consumer orientation here is traditionally lower than in low-tech sector; in many cases high-tech enterprises do not interact with final consumers. Besides

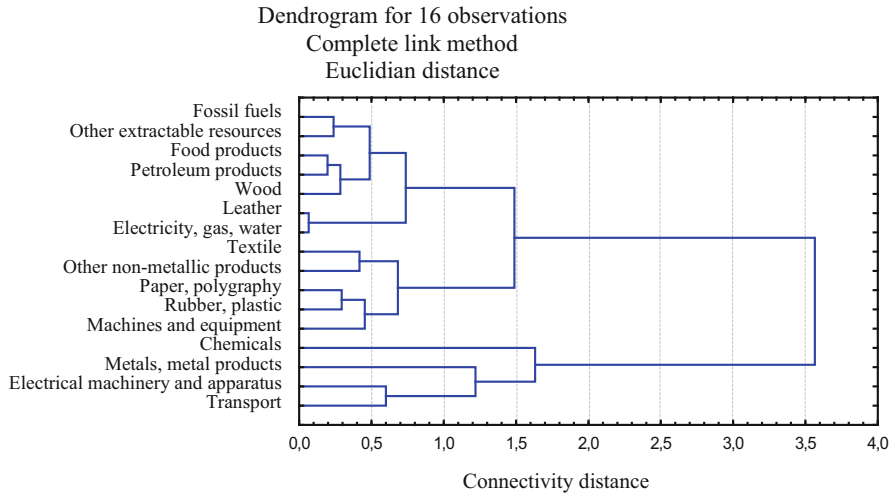


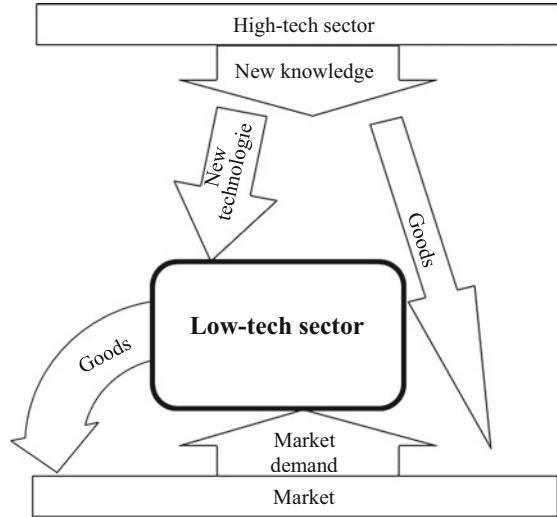
Fig. 1 Results of clustering with the usage of hierarchical classification

Table 1 Clustering results (method of K-means)

Cluster 1 “high-tech sector”		Cluster 2 “low-tech sector”	
Economic sector	Euclidian distance to the cluster center	Economic sector	Euclidian distance to the cluster center
Electrical machinery and apparatus	0.3916516	Wood	0.1224527
Machines and equipment	0.3808291	Leather	0.2385736
Chemicals	0.7646618	Mineral production, except fuel and energy	0.1327171
Metals, metal products	0.3963197	Textile	0.2431939
Transport	0.1611938	Petroleum products	0.06055611
Rubber, plastic	0.3440809	Food, drinks, and tobacco	0.07759175
Paper, polygraphy	0.3755358	Fossil fuels	0.111617
		Other nonmetallic and mineral products	0.2602845
		Electricity, water, and gas	0.2382161

that, high-tech enterprises periodically carry out breakthrough innovations in respect of which it is extremely difficult to form consumer profile. As for the low-tech sphere, the markets here are mature and highly competitive. These facts determine the necessity to proper research of market conditions. Independent research in this sector is carried out very seldom. So, in low-tech sector is formed demand for new technologies to produce goods that are in consumers’ demand.

Fig. 2 The model of revealed connections between low-tech sector and economic environment



The conclusion can be drawn from the analysis results is about a fundamentally different nature of the innovation process in the low-tech industries companies. Classical, the so-called “linear” model of the innovation process as a starting point regards research and development, which are in such enterprises carried out usually in a very small amount. Therefore, low-tech innovations are appropriate to consider in compliance with the concept of John Schumpeter. According to this concept, an innovation is new combination of existing resources, any creative activity which “increases the diversity” and thereby brings additional income.

Every company can be characterized by the mean of specific combination of more or less rare resources, especially knowledge in different forms—and not only scientific knowledge, based on researches. In order to have the opportunity to achieve current strategic goals, a company should have particular skill set. To implement particular innovations, every company should consciously develop specific skills and then use them combining in different ways (Fig. 3).

In other words, the company has to create specific configuration of cognitive, financial, and material resources. On the other hand, the transformation and configuration capabilities should be considered. Transformation capabilities allude the abilities of organization to transform knowledge, which exists in external environment in codified condition, into unique in-house knowledge. Configurational capabilities mean the ability of the company to synthesize novelty with the help of new knowledge configurations, material values, and suitable personnel. Thus, they are considered in three aspects: cognitive (knowledge), organizational (personnel, knowledge carriers), and compositional (functional features of the organization).

According to the analysis, we have developed a model of the innovation process in low-tech sector (Fig. 1).

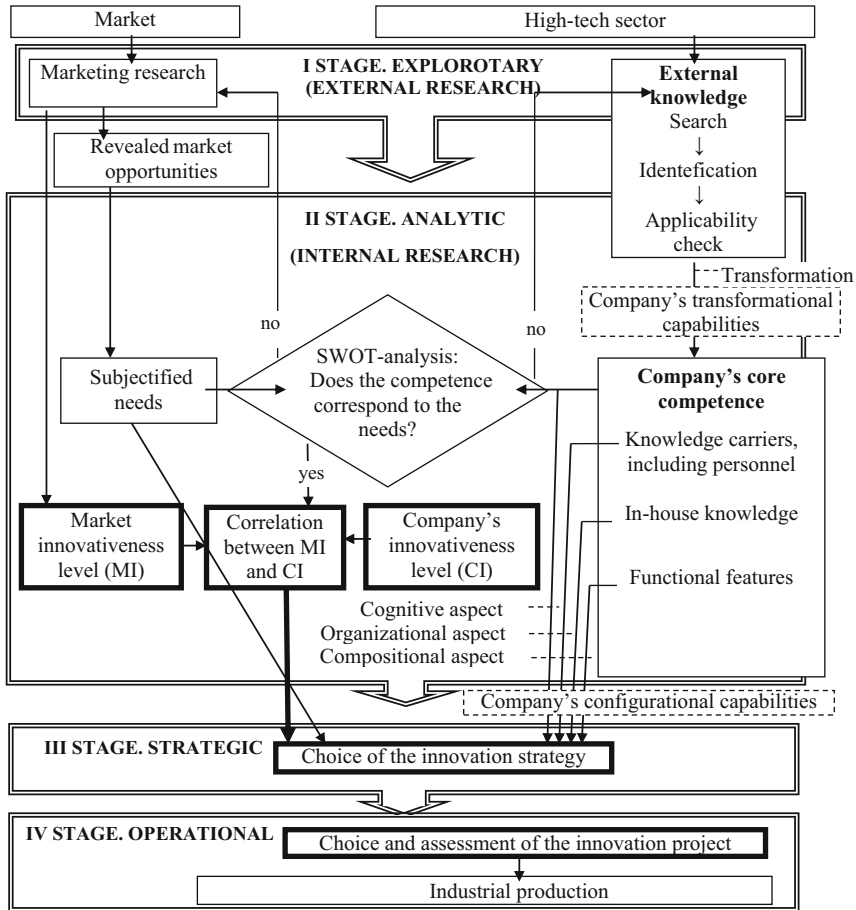


Fig. 3 Innovation process in low tech

The proposed model is built on the discussed low-tech sector features and provides the basis for further adaptation of innovation management tools to these features.

4 Conclusion

Low-tech industries are the backbone of the economy, even in the highly industrialized countries. The products of these industries for the most part are based on mature technologies; markets are highly competitive, which necessitates a careful study of the market conditions. Independent research carried out within this sector is rare.

In foreign practice, sectoral features of industries' activities are regarded as having decisive importance in the development of innovation policy—at both the macro and micro levels. This is due to the fact that innovation activities in sectors of various R&D intensity level objectively have a number of differences. Thus, businesses operating in low-tech industries require specific management tools of innovative development, which would consider the special nature of these industries.

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Study of Tendencies of Formation and Evaluation of HR Innovational Potential of the Regions of the Russian Federation

Valentina N. Parakhina, Rustam M. Ustaev, Olga A. Boris,
Lyudmila S. Maximenko, and Ivan N. Belousov

Abstract In the modern globalizing world, competitiveness and success of development of national economy depend on timely response to the processes of modernization, oriented at cardinal changes in development and requiring new level of qualification and training of personnel. Therefore, effective management of professional training and retraining of personnel and rational use of HR innovational potential are among the main factors for innovational development of economy of the country on the whole and of each region in particular.

The purpose of the research is evaluation and comparative analysis of HR of innovational potential, as well as determination of peculiarities of its territorial formation and development.

The offered methodology of evaluation of innovativeness of HR potential allows assessing the general level of HR innovational potential and of the main parameters which characterize it. Also, this methodology is convenient for comparing territorial values of the level of HR innovational potential.

Based on the results of the analysis of the level of HR innovational potential of the federal districts and of the Russian Federation on the whole, the leading regions (Central and Northwestern Federal District) and outsiders (North Caucasian and Far Eastern Federal Districts) were determined.

The level of HR innovational potential of Stavropol Krai, as a subject-leader of the North Caucasian Federal District, was determined with the help of a special scale. The results of this calculation show average level of innovativeness of personnel in the krai, though its use is organized on a rather high level.

Recommendations are given for increase of the level of HR innovational potential with the use of institutional approach in development and the system of perfection of management of HR innovational potential.

JEL Codes M54 • O34

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1 Introduction

Structural changes in economy, which have been taking place in the several recent decades, show the growing role of innovational processes, peculiar for most of modern effective economic systems, regardless on scales and spheres of their activities. Due to the fact that in modern economic conditions the value of low-qualified labor, capital, and means of labor reduces and importance of human resources grows, the role of personnel management grows, and its functions and tasks change (Abdullah et al. 2016). These changes require from scientific society the formation of new methods of study of innovational processes and the tools of their regulation and management. Theoretical, methodological, and methodical issues related to increase of effectiveness of innovational activities were studied by such Russian scientists as I.V. Afonin, E. Balatskiy, L.S. Blyakhman, S.V. Valdaitsev, G.S. Gamidov, S.Y. Glazyev, G.Y. Goldstein, V.Y. Gorfinkel, M.A. Gusakov, D.A. Endovitskiy, P.N. Zavlin, S.D. Ilyenkova, A.E. Karlik, A.K. Kazantsev, N.D. Kondratyev, V.I. Kushlin, N.P. Ivashchenko, V.G. Medynskiy, L.E. Mindeli, V.V. Okrepilov, Y.M. Osipov, V.V. Platonov, A.B. Titov, E.A. Tkachenko, and V.K. Valtsman. Among the foreign researchers, it is possible to distinguish the works by R. Akoff, F. Valenta, U. Deming, P. Drucker, R. S. Kaplan, B. F. Lundvall, M. Porter, B. R. Tucker, R. foster, C. Freeman, J. Schumpeter, etc.

Particular issues of the theory of innovational development were viewed in the works by J. Schumpeter, D. Bell, J. Grant, J. Nesbitt, S. Fischer, R. Schmalensee, S. Kuznets, as well as by foreign and Russian scientists—William J. Baumol, J. Lerner, S. Brue, K. McConnell, V.R. Vesnin, Y.A. Korchagin, I.K. Makarova, N.M. Pliskevich, et al.

Among special research, devoted to analysis of management of intellectual resources, it is necessary to distinguish the works by V.G. Zinov, T.Y. Lebedeva, S.A. Tsyganova, S.V. Shekshnya, dissertations by A.Y. Avezdilin, A.B. Ilyin, D.R. Amirova, and O.Y. Minchenkova.

Overview of the works of the stated authors shows that one of the main factors of development of economic system is increase of effectiveness of the use of not just human potential but of HR innovational potential—as the most expensive production factor and systematizing and driving force of innovational activity and commercialization of innovations (Parakhina et al. 2015). At that, there are various definitions and methodologies of evaluation of HR innovational potential and adjacent notions which should be systematized and integrated for provision of adequate evaluation of its level and directions of development.

2 Research Methods

For the purpose of systematization of definitions and methodologies of evaluation of innovational HR potential, the methods of content analysis of definitions of the studied notion, group, and comparative estimates of particular indicators of calculation of the level of its development and statistical methods of distinguishing the main factors of formation and determination of the level of use of HR innovational potential of the regions were used.

3 Studying the Notion

Multiple definitions of HR innovational potential of enterprises (Table 1) characterize it not only as totalities of creative capabilities, wishes, and readiness of personnel for innovative activities (Baer 2012; Nayak et al. 2011) but also as capabilities, wishes, and readiness of supreme authorities for provision of intra-firm activities according to the goals of development.

Based on the viewed approaches to the notion of HR innovational potential, it could be pictured in the form of a comprehensive system consisting of personnel's capabilities and readiness for performance of innovative activities by implementation of innovations and regional enterprises' managers' readiness for accepting such novelties (Ustaev and Parakhina 2015).

Under conditions of activation of innovational processes, society faces goals for development and realization of innovational directions of economic and social development, as well as tasks for formation of HR innovational potential, adequate to challenges of current situation (Parakhina et al. 2015).

Table 1 Volume of sold innovational goods, works, and services of own production for the federal districts and the Russian Federation on the whole, billion RUR^a

Country/region	2010	2011	2012	2013	2014
Russian Federation	25,794.6	33,407	35,944.4	38,334.5	41,233.5
Central Federal District	6762.8	8732.4	9172.8	10,206.1	11,314.4
Northwestern Federal District	2931.5	3760.3	4095.2	4415.7	4360.6
Southern Federal District	1328	1617.2	1731.2	2037.6	2151
North Caucasian Federal District	324.3	351.8	348	374.7	366.4
Volga Federal District	5339.7	6943.1	7458.3	7973.8	8525.7
Ural Federal District	4986.3	6539.5	7239.2	7223.9	7284.4
Siberian Federal District	3046.9	4041	4390.8	4527.3	5329.9
Far Eastern Federal District	1075.1	1421.5	1509.1	1575.4	1878.5

^aCompiled on the basis of the data: Labor and employment in Russia (2015)

4 Comparative Evaluations of Formation of HR Innovational Potential in Regions

In each region, the process of formation of HR innovational potential is performed in view of its peculiarities: specifics of sectorial development, sociodemographic peculiarities, level of economic development, level of development of innovational infrastructure, and regional policy in the sphere of innovations (Kabasheva et al. 2015).

Significant influence on formation of HR innovational potential of the region is made by sociodemographic factors, which is reflected in quantitative characteristics (number of economically active and employed population, number of employees performing scientific R&D, age composition of population, and distribution of population by the level of education) and qualitative characteristics, which could be evaluated only on the basis of analysis of educational and scientific level of development of population (Amirova 2014; Ustaev 2015).

Besides viewing the dynamics of the number of population of the country's regions with the use of such important criteria for evaluation of innovational potential of personnel as able-bodied and employed population, there's necessity for analysis of HR potential on the basis of distribution of the number of employed population as to the level of education.

The basic factors of formation of HR innovational potential of the region are education and training of personnel for scientific forms of activities: R&D, studies, etc. (Aleskerov et al. 2013). It is obvious that under conditions of innovational path of development of economy, increase of effectiveness of enterprises is impossible without use of scientific knowledge, implemented in the following innovations.

5 Analysis of Indicators of Realization of HR Innovational Potential

An important form of realization of HR potential is its innovational activity which characterized the use of HR innovational potential through analysis of such indicators as the volume of sold innovational goods, works, and services, quantity of innovational development or technologies, and applications for patents (Cooper 2003; Chiesa and Fratini 2009; Nolan and Garavan 2016).

The volume of sold innovational goods, works, and services of own production for the federal districts and the Russian Federation on the whole is shown in Table 1.

As to the number of the filed patent applications and issued patents, the North Caucasian Federal District exceeds only the Far Eastern Federal District, with the indicator value of 1788(−956) by the end of the analyzed period.

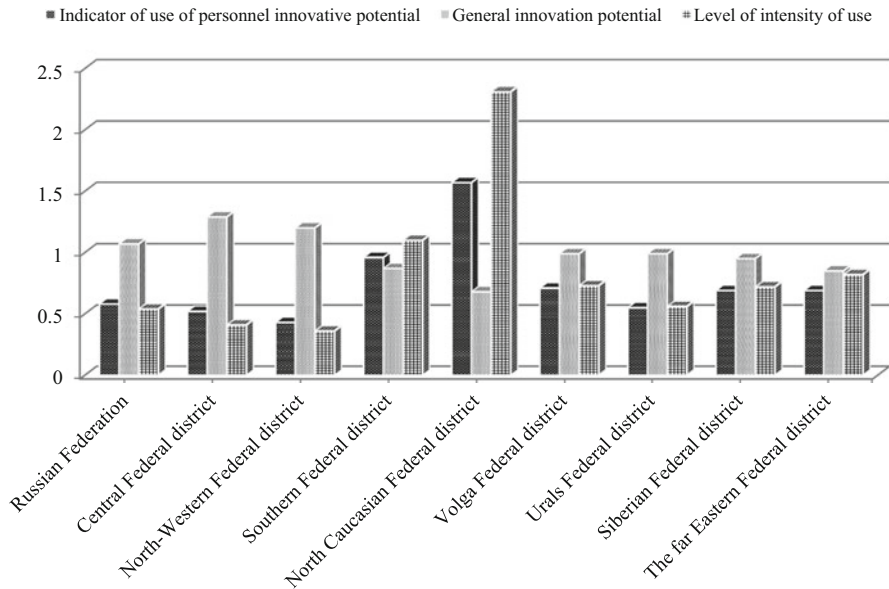


Fig. 1 Level of HR innovational potential and intensity of its use

6 Systematization of Indicators and Methodologies of Evaluation

For the purpose of comparative analysis of the level of development of HR innovational potential in the regions of the Russian Federation and in the country on the whole, it is necessary to calculate indices of innovativeness of HR potential for each region separately and for the country on the whole.

Based on the conducted analysis, the following indices are used for calculation of indicators of HR innovational potential of the regions of the Russian Federation and the country on the whole. The results of calculations are presented in Fig. 1.

Thus, the leading regions from the point of view of the level of development of HR innovational potential are the Central and Northwestern Federal Districts; the region-outsider is the North Caucasian Federal District. At that, this district uses its relatively small HR capabilities of innovational activity in a fuller and more intensive way than other districts. It is possible to state that there is inverse dependence between the value of total innovational HR potential of the region and effectiveness of its use.

One of the problems of development of HR innovational potential in Stavropol Krai is that enterprises' management not always orients personnel at innovative activities, so there is no effective mechanism of management of innovative activity of personnel and there are no strategy and methodology of increase of innovational activity of employees at enterprises (Lukyanova 2012).

7 Search for Directions of Growth of Innovational Potential and Effectiveness of Its Use

Modern institutional environment needs reformation of the existing institutes and formation of new ones which are the foundation of development of innovations-oriented model of economy. One of the elements of the economy's structure is the formation of innovational territorial clusters (Anopchenko and Sahamardin 2013; Bochkova 2012; Mirolyubova 2008).

Formation and development of innovational territorial clusters is an effective mechanism of attraction of direct foreign investments and activation of foreign economic integration (Bochkova 2012).

8 Conclusions

The system of perfection of management of HR innovational potential in the region should include:

- Increase of the quality of HR potential, by means of development of its innovational component
- Development of intellectual and creative potentials
- Formation of perception to innovations
- Development of innovational thinking
- Increase of innovational activity of HR potential of enterprise

An effective step might be implementation of the algorithm of increase of HR innovational potential in the region, which includes the following main stages: determination of the level of innovativeness of HR potential; analysis of results of determination of the level of innovativeness of HR potential and determination of problem spots; development and realization of the optimal model of formation and development of innovational potential; development of the system of management of HR innovational potential, in view of external and internal factors which influence it; and regulation of innovative activities of personnel.

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Using Foresight Methods for Attracting Investments into National Economy

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Aleksandr Bezrukov, and Maria Grigorieva

Abstract The advantage of this type of research is that “foresight” forms the map of future possibilities and allows creating a basis for successful development in 20–30 years. The foresight methodology was constantly changed. The set of the used methods was expressed in the foresight triangle, within which the methods were distributed according to three criteria: creativity, expertise, and interaction. Application of foresight technologies can stimulate development of all spheres of public life and is applicable within state management and development of business. Each company has a life cycle, the peak of which must present a novelty for the market—in order to stay in it—and this is what “foresight” does, developing technologies of the future. Progressive nature of the foresight technology consists in its correspondence to the character of modern economy, according to development of which it is necessary to form a complex approach that supposes modeling of the process of investment attraction into national economy, which will allow, based on analysis of dynamics and planning of investments processes planning, selecting adequate tools for their regulation and ensuring formation of investment potential of Russian regions, as well as developing investment programs and projects.

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1 Introduction

In the modern economic situation, which is characterized by urgent deficit of resources for production investing and modernization of economy, significance of investments for Russia’s economy cannot be overestimated. Taking into account serious technological underrun of Russian economy on most positions, Russia

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_39

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requires financial resources that might bring new technologies and modern methods of management and stimulate the development of domestic investments.

This predetermines topicality and necessity for the procedure of foresight, which is a complex approach that includes evaluation of the long-term perspectives of technologies, science, society, and economy, which is performed systematically for the purpose of determination of strategic directions that can bring maximum possible benefits of a socioeconomic character (Frolova 2014). Foresight is based on the use of methods of organization of structured discussion, in the course of which general notions on long-term perspectives of socioeconomic and scientific and technological development are viewed.

2 Materials and Method

The object of the research is organizational and economic relations and managerial decisions in the sphere of modeling of the process of attracting investments into national economy with the use of the foresight methodology.

For the purpose of studying economic processes in the sphere of investments attraction, descriptive (mechanical), component, and factor methods are used. Descriptive methods include the method of parallel rows, graphical method, balance method, and method of analytical grouping. The component methods include the index method, and factor methods include correlation and regression methods of analysis of the investment sphere. There is also a group of nonparametric methods based on calculation of various coefficients. In order to achieve maximum effect, it is necessary to combine various methods.

Within foresight, three types of classification of the used methods are distinguished. The first is based on standardization of approaches, the second on determining the types of method, and the third on unified methods according to sources of knowledge and information.

3 Results

Three variants of development of the scenario of investment direction with the use of foresight are used: conservative, innovational, and forced.

The conservative scenario is characterized by moderate long-term rates of growth of national economy on the basis of active development of fuel and energy and raw material sectors of economy with preservation of relative underrun in civil high- and medium-technological sectors. There will be growth of capital investments related to possibility of realization of investment projects in oil and gas complex and related industries—electric energy, raw material spheres, and transport infrastructure—and creation of a platform for the 2018 FIFA World Championship and other projects. Modernization of economy will be oriented at import technologies and knowledge.

Annual growth rates of GDP will be at the level of 3.2% in 2015–2030. Expenses for scientific R&D will reach 1.3% of GDP by 2030. Expenses for education will stabilize at the level of 4.8–6.0% of GDP, including the budget system—4.0–5.1% of GDP. Expenses for healthcare will be in the interval of 4.6–6.2% of GDP by 2030, including by means of the budget system—3.6–4.9% of GDP. The level of private and state investments into human capital will be behind parameters of the developed countries.

Innovational scenario is determined by increase of investment direction of the national economy. Increase of investments will be influenced by full-scale technological modernization of high-tech and medium-tech production, development of machine-building productions, and realization of large infrastructural projects—high-speed roads and expansion of the Trans-Siberian and Baikal-Amur lines. Besides, the innovational scenario supposes large volumes of investments into the sphere of construction and the corresponding production of construction materials. The scenario supposes turning innovational factors into the leading source of economic growth and large increase of human capital effectiveness at the brink of 2020–2022, which allows improving social parameters of development. Private and state expenses for healthcare will grow from 4.6 to 6.1% of GDP in 2020 and to 7.1% of GDP by 2030, and the expenses for education will reach 6.0 and 6.5% of GDP accordingly. Realization of the innovational scenario allows reducing the gap between developed countries as to the level of well-being of Russian citizens and increasing Russia's status in the global economy. Russia will strengthen its positions as one of the leaders of scientific and technological and educational development in the world.

The targeted (forced) scenario is based on the innovational scenario; it is peculiar for quick growth rate of national economy, increase of the norm of private savings, and creation of a powerful export sector of products with high added value. High growth of investments into fixed assets will be related to active use of new equipment in the process of production and growth of financing of perspective technologies in all spheres of the national economy. Investments into fixed assets of machine-building productions will grow in 2015–2030 by eight times. Besides, large volumes of mineral production will require a lot of investments into the oil and gas complex, especially into inaccessible mineral resources. A top-priority direction is the development of transport infrastructure; the forced scenario also includes the development of the mechanism that will satisfy the needs of economy's growth by more than 5% per year. Realization of the projects of the innovational scenario is to be done within shorter terms, as well as realization of a range of additional projects—development of the Moscow transport node, etc. It has a breakthrough character and supposes full-scale realization of all tasks set in the Decree of the President of the Russian Federation dated May 7, 2012, No. 596-606. Average annual growth rates of GDP will rise to 5.0–5.3%, which will exceed the growth of the Russian economy in the global GDP to 5.8% by 2030.

Development of investments into fixed assets in all scenarios will be based on the volume of enterprises' assets used for improvement and development of production, as well as on state investments into transport, high-tech sector, sectors related to development of human capital, etc. (Fig. 1).

For forecasting of investments into fixed assets on the basis of the Rosstat (Federal State Statistics Service 2016) data, the methodology of modeling of

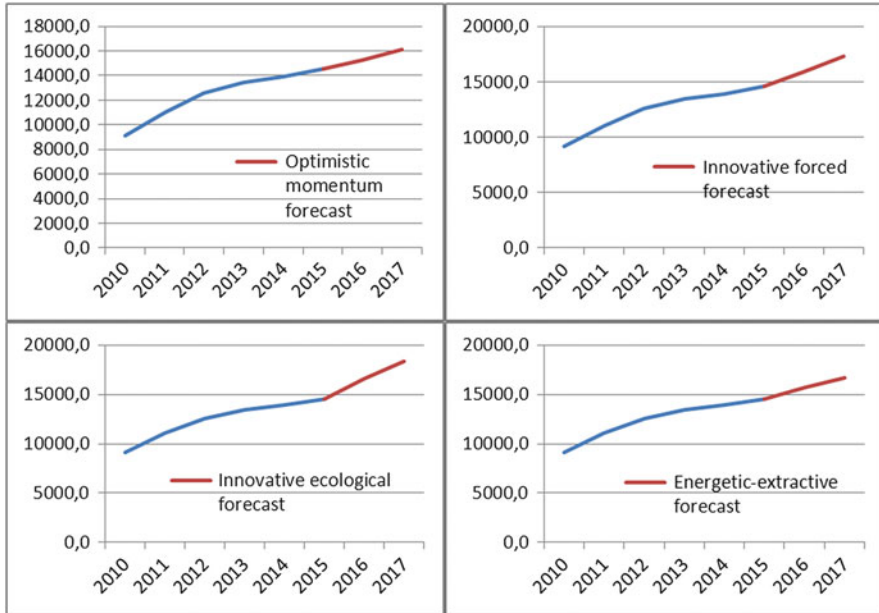


Fig. 1 Scenario forecasts of the volume of investments into fixed assets for 2017, RUB billion

Table 1 Models of ARISA of scenario forecasting of investments into fixed assets

Scenario	ARISA model
Optimistic and momentum	$X_{1,t} = 957.3 + 0.78X_{1,t-1} - 0.43X_{1,t-2} + 0.12X_{1,t-3} - 0.02X_{1,t-4} - 0.06X_{1,t-5} - 0.12X_{1,t-6} - 0.02X_{1,t-7} - 0.12X_{1,t-8} + 0.9998\varepsilon_{1,t-1} + \varepsilon_{1,t}$
Innovational and forced	$X_{2,t} = 48.3 + 0.37X_{2,t-1} - 0.08X_{2,t-2} - 0.01X_{2,t-3} + 0.10X_{2,t-4} - 0.04X_{2,t-5} - 0.01X_{2,t-6} - 0.26X_{2,t-7} + 1.52\varepsilon_{2,t-1} - 0.12\varepsilon_{2,t-2} - 0.45\varepsilon_{2,t-3} + \varepsilon_{2,t}$
Innovational and ecological	$X_{3,t} = 0.12 - 0.04X_{3,t-1} + 0.38X_{3,t-2} + 0.32X_{3,t-3} + 0.53X_{3,t-4} + 0.36X_{3,t-5} - 0.15X_{3,t-6} - 0.33X_{3,t-7} - 0.42X_{3,t-8} + 1.24\varepsilon_{3,t-1} + 0.33\varepsilon_{3,t-2} - 0.68\varepsilon_{3,t-3} + \varepsilon_{3,t}$
Energy and resources	$X_{4,t} = 0.1 - 0.24X_{4,t-1} - 0.09X_{4,t-2} - 0.01X_{4,t-3} + 0.16X_{4,t-4} + 0.34X_{4,t-5} + 0.21X_{4,t-6} - 0.002X_{4,t-7} + 0.68\varepsilon_{4,t-1} + 0.20\varepsilon_{4,t-1} + 0.04\varepsilon_{4,t-1} + 0.08\varepsilon_{4,t-1} + \varepsilon_{4,t}$

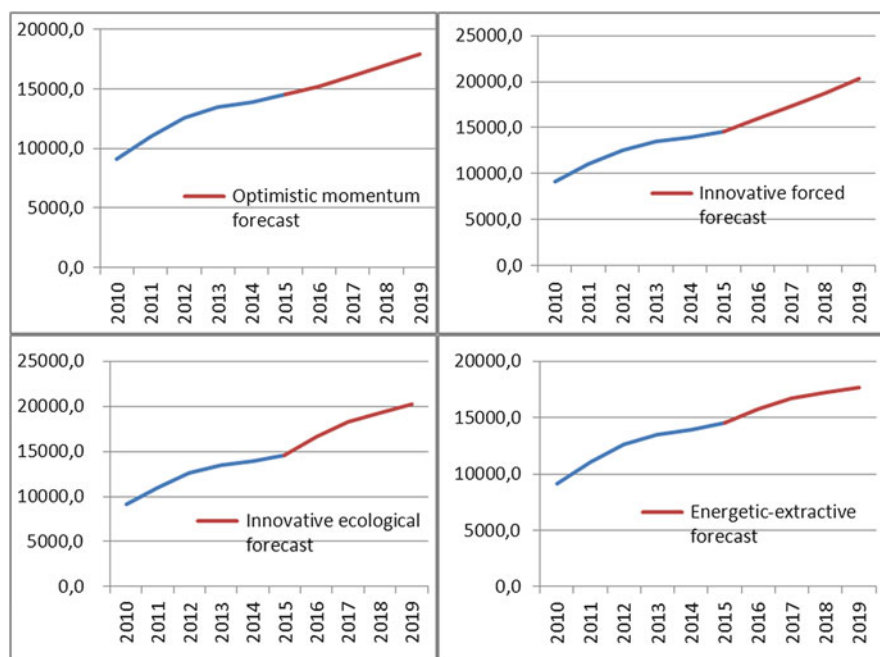
$X_{j,k}$ differences of $Y_k - Y_{k-1}$ between k and $k - 1$ value of j -th scenario Y_j , $\varepsilon_{j,k}$ components of sliding average, $\varepsilon_{j,t}$ current error of the model

auto-regression integrated sliding average (ARISA) was used, which is applied for nonstationary rows of dynamics of economic indicators (Table 1).

According to the optimistic and momentum forecast, in 2017, the level of investments into fixed assets will constitute RUB 16,109 billion, with the annual growth rate of 5%; according to the energy and resources scenario RUB 16,686 billion, with the growth rate of 8%; according to innovational and forced scenario RUB 17,328 billion, with the growth rate of 9%; and according to innovational and ecological scenario RUB 18,334 billion, with the growth rate of 10% (Table 2, Fig. 2).

Table 2 Scenario of projected values of investments into fixed assets for 2017, RUB billion

Scenario	Volume of investments into fixed assets, RUB billion	Growth rate, %, as compared to 2010
Optimistic and momentum	16,109.0	176%
Innovational and forced	17,327.9	189%
Innovational and ecological	18,334.3	200%
Energy and resources	16,685.9	182%

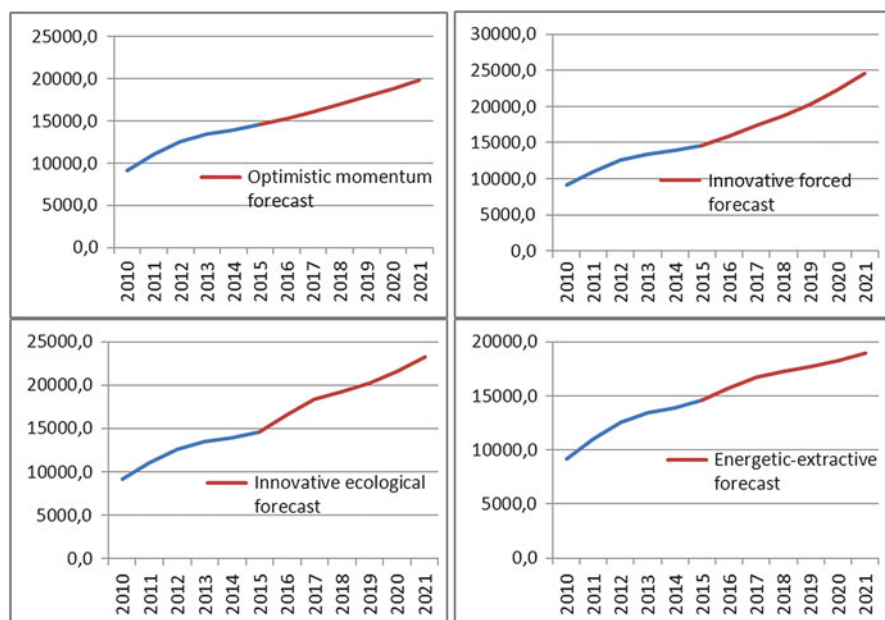
**Fig. 2** Scenario forecasts of the volume of investments into fixed assets for 2017–2019, RUB billion

The planned scenario results of the volume of investments into fixed assets will constitute in 2019 (Table 3): optimistic and momentum scenario, RUB 17,897.8 RUB (196% as compared to 2010); innovational and forced scenario, RUB 20,356.4 RUB billion (222%); innovational and ecological scenario, RUB 20,209.2 billion (221%); and energy and resources scenario, RUB 17,672.9 billion (193%) (Fig. 3).

The planned scenario results of the volume of investments into fixed assets will constitute in 2021 (Table 4): according to optimistic and momentum scenario, RUB

Table 3 Scenario projected values of investments into fixed assets for 2019, RUB billion

Scenario	Volume of investments into fixed assets in 2019, RUB billion	Growth rate, %, as compared to 2010
Optimistic and momentum	17,897.8	196%
Innovational and forced	20,356.4	222%
Innovational and ecological	20,209.2	221%
Energy and resources	17,672.9	193%

**Fig. 3** Scenario forecasts of the volume of investments into fixed assets for 2021, RUB billion

19,801.1 billion (216% as compared to 2010); according to innovational and forced scenario, RUB 24,542.5 billion (268%); according to innovational and ecological scenario, RUB 23,234 billion (254%); and according to energy and resources scenario, RUB 18,963.4 billion (207%) (Fig. 2).

The planned scenario results of the volume of investments into fixed assets will constitute in 2026 (Table 5): according to optimistic and momentum scenario, RUB 25,033.8 billion (274% as compared to 2010); according to innovational and forced scenario, RUB 35,565.2 billion (389%); according to innovational and ecological scenario, RUB 30,255 billion (331%); and according to energy and resources scenario, RUB 21,459.8 billion (234%) (Fig. 4).

The planned scenario results of the volume of investments into fixed assets will constitute in 2030 (Table 6): according to optimistic and momentum scenario, RUB

Table 4 Scenario projected values of investments into fixed assets for 2021, RUB billion

Scenario	Volume of investments into fixed assets in 2021, RUB billion	Growth rate, in %, as compared to 2010
Optimistic and momentum	19,801.1	216%
Innovational and forced	24,542.5	268%
Innovational and ecological	23,234.0	254%
Energy and resources	18,963.4	207%

Table 5 Scenario projected values of investments into fixed assets for 2026, RUB billion

Scenario	Volume of investments into fixed assets in 2026, RUB billion	Growth rate, in %, as compared to 2010
Optimistic and momentum	25,033.8	274%
Innovational and forced	35,565.2	389%
Innovational and ecological	30,255.0	331%
Energy and resources	21,459.8	234%

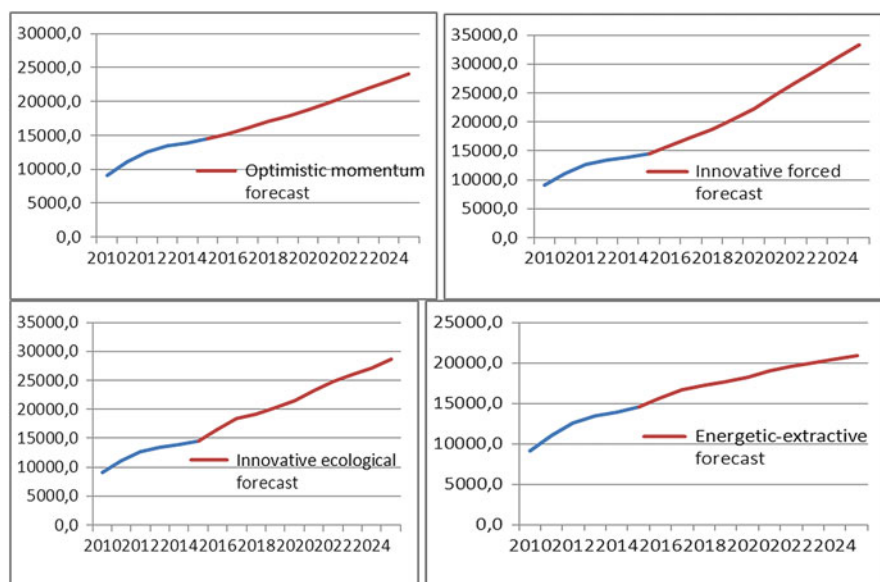
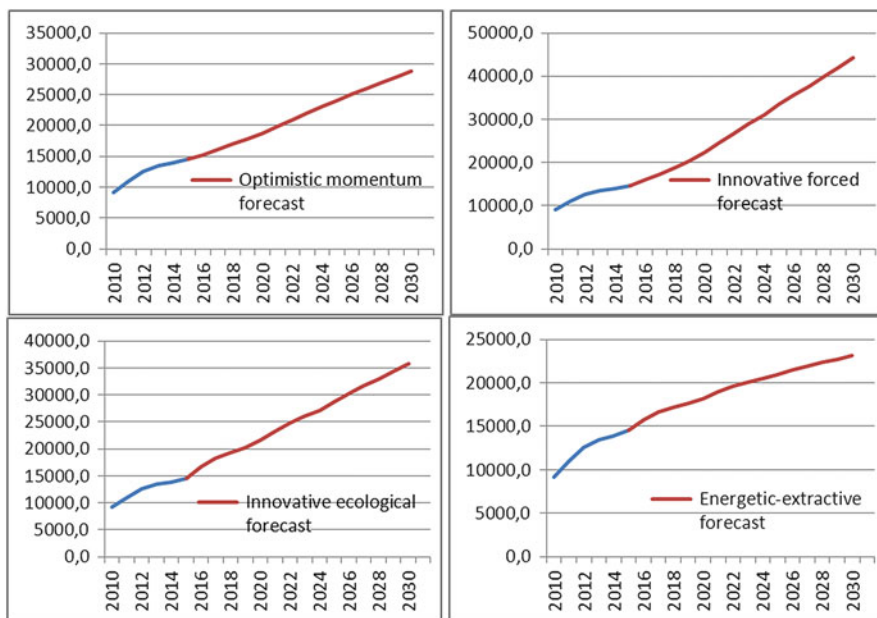
**Fig. 4** Scenario forecasts of the volume of investments into fixed assets for 2025, RUB billion

Table 6 Scenario projected values of investments into fixed assets на 2030 год, RUB billion

Scenario	Volume of investments into fixed assets in 2030, RUB billion	Growth rate, in %, as compared to 2010
Optimistic and momentum	28,751.2	314%
Innovational and forced	44,231.0	483%
Innovational and ecological	35,722.6	390%
Energy and resources	23,135.3	253%

**Fig. 5** Scenario forecasts of the volume of investments into fixed assets for 2030, RUB billion

28,751.2 billion (314% as compared to 2010); according to the innovational and forced scenario, RUB 44,231 billion (483%); according to the innovational and ecological scenario, RUB 35,722.6 billion (390%); and according to energy and resources scenario, RUB 23,135.3 billion (253%) (Fig. 5).

Intermediate projected scenario values of the volume of investments into fixed assets are shown in Table 7.

For forecasting the structure of financing of fixed capital according to the sources, the methodology of modeling of auto-regression sliding average (ARSA) was used, applied for stationary rows of dynamics of economic indicators (Table 8).

Table 7 Scenario forecasts of investments into fixed assets in the Russian Federation for 2017–2030, RUB billion

	Optimistic and momentum forecast	Innovational and forced forecast	Innovational and ecological forecast	Energy and resources forecast
<i>Factual data (source: Rosstat)</i>				
2010	9152.1	9152.1	9152.1	9152.1
2011	11,035.7	11,035.7	11,035.7	11,035.7
2012	12,586.1	12,586.1	12,586.1	12,586.1
2013	13,450.2	13,450.2	13,450.2	13,450.2
2014	13,902.6	13,902.6	13,902.6	13,902.6
2015	14,555.9	14,555.9	14,555.9	14,555.9
2016	15,226.9	15,918.0	16,610.0	15,735.8
<i>Projected data</i>				
2017	16,109.0	17,327.9	18,334.3	16,685.9
2018	17,029.5	18,750.9	19,232.7	17,254.3
2019	17,897.8	20,356.4	20,209.2	17,672.9
2020	18,798.5	22,324.6	21,575.7	18,233.0
2021	19,801.1	24,542.5	23,234.0	18,963.4
2022	20,902.7	26,808.1	24,810.3	19,613.5
2023	21,991.4	28,950.8	26,049.4	20,061.3
2024	23,040.2	31,108.5	27,168.3	20,454.4
2025	24,052.5	33,332.1	28,640.0	20,924.8
2026	25,033.8	35,565.2	30,255.0	21,459.8
2027	25,991.3	37,727.6	31,712.3	21,948.7
2028	26,926.6	39,847.0	32,995.6	22,346.6
2029	27,844.9	41,995.2	34,286.4	22,720.8
2030	28,751.2	44,231.0	35,722.6	23,135.3

Table 8 Models of ARSA forecasting of the structure of financing of fixed capital according to the sources

Source	Model ARSA
Own assets	$Y_{1,t} = 0.60Y_{1,t-1} + 0.65Y_{1,t-2} - 0.56Y_{1,t-3} + 0.40Y_{1,t-4} - 0.05Y_{1,t-5} - 0.42Y_{1,t-6} + 0.39Y_{1,t-7} - 0.50\varepsilon_{1,t-1} + \varepsilon_t$
Borrowed assets	The model was not built
Including attracted assets	
Bank credits	$Y_{2,t} = 1.01Y_{2,t-1} + 0.17Y_{2,t-2} - 0.20Y_{2,t-3} - 0.32Y_{2,t-4} + 0.45Y_{2,t-5} + 0.20Y_{2,t-6} - 0.47Y_{2,t-7} - 0.41Y_{2,t-8} + 0.56Y_{2,t-9} - 0.22\varepsilon_{3,t-3} + \varepsilon_t$
Budget assets	$Y_{3,t} = 0.1 + 0.997Y_{3,t-1} - 0.01\varepsilon_{3,t-1} + 0.05\varepsilon_{3,t-2} + 0.34\varepsilon_{3,t-3} + 0.45\varepsilon_{3,t-4} + \varepsilon_t$

Y_t values of indicators, ε_t current error of the model

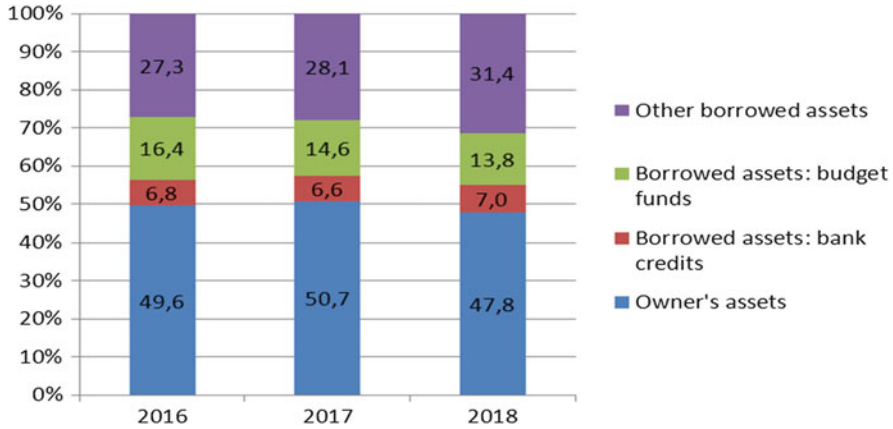


Fig. 6 Projected structure of financing investments into fixed assets for 2016–2018, %

Figure 6 shows the results of forecasting of the structure of financing investments into fixed assets for 2016–2018. Thus, in 2017, financing from own assets will constitute 50.7%; borrowed assets, bank credits, 6.6%; borrowed assets, budget assets, 14.6%; and other borrowed assets, including population's assets, 28.1%. In 2018, financing from own assets will constitute 47.8%, bank credits 7.0%, budget assets 13.8%, and other borrowed assets 31.4%.

Budget and state financial investments are a part of the national income in the form of money assets of various budgets. Depending on the investor, investments are divided into foreign, private, and state (Department of Defense 2016). State investments are performed by means of budget and borrowed assets, as well as non-budget funds, for the purpose of obtaining profit. Financing is done by means of state investments and taxes from state enterprises. State investments are peculiar for the use of the main statistical methods.

4 Conclusions

The offered foresight approach to the process of attracting investments into the national economy is based on the methods that characterize the essence of the foresight approach, application of which will allow for the formation of the so called data bank for all potential projects of realization of investment projects in the national economy. Modeling and algorithmization of the process of investments attractions provide multiple advantages for specialists, allowing determining the key players and their competences, evaluating the potential and limitations of application of certain method and their combinations, increasing the quality of recommendations, and developing the methodology of study of future economy at the macro-, micro-, and meso-levels, with application of statistical, information,

and foresight methods. The methodology of the process of forming the foresight approach to the process of attracting the investments into the national economy is constantly changed. It becomes richer, being subject to requirements of deeper cognition of the processes of investments attractions, which, in their turn, constantly develop.

The research performed on the basis of creation of a complex of economic and mathematical models, analysis, and forecasting of investment processes will allow developing top-priority directions, forms, and methods of state regulation of investment activity that ensure achievement of macroeconomic indicators that determine investment directions which create the potential for the future development of the country's economy.

Acknowledgment The article was prepared within the framework of the Russian Humanitarian Science Foundation in 2017 (Grant No. 17-02-00216).

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Marketing Tools for Increasing Company's Reorganization Effectiveness

Amastasia A. Sozinova, Olga V. Fokina, and Raisa A. Shchinova

Abstract The purpose of the article is to study perspectives and develop recommendations for using marketing tools for increasing the effectiveness of a company's reorganization. The authors prove incompleteness of the formula for evaluation of a company's reorganization effectiveness, which is currently used in Russia, as it takes into account only financial profit (additional profit received as a result of company's reorganization) and offers a method of its modification in view of marketing advantages for business. The authors evaluate the effectiveness of the largest deals on reorganization of modern Russian companies in the recent years with the help of traditional and modified formula by the example of NC Rosneft PJSC and TNC-VR Holding OJSC (2013), Gazprombank OJSC and Stroygazconsulting Group (2015), Rostelecom PJSC, and Tele2 Russia OJSC (2013) and prove that, in view of growing importance of reorganization processes in the sphere of business due to crisis phenomena in modern economy, it is necessary to take into account marketing aspects for preservation of business. The authors also develop and substantiate interactive scheme of company's reorganization in view of the marketing aspect.

JEL Codes G34 • H12 • M31

1 Introduction

While in the countries with developed market economy marketing is a usual practice and all business processes are developed and conducted in view of marketing goals and the company's capabilities, it is otherwise in the countries with transitional economy. In such countries as modern Russia that have taken the path of

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market transformations, there are full-scale market relations in most spheres of national economy (Sozinova et al. 2016).

However, enterprises implement marketing only into certain aspects of their strategic and operational activity. Reorganization of business is usually planned and performed without consideration of marketing aspects of company's activity (Saenko et al. 2016). Taking into account a lot of examples of inefficient reorganization of modern Russian companies, the problem of increase of effectiveness of reorganization processes' management in business is very actual.

We think that paying no attention to marketing aspects is one of the most important reasons for low effectiveness of reorganization of modern companies, as there is an objective necessity for marketing in new economic conditions—still, it is not used in reorganization business processes due to slow adaptation of companies to these new conditions. The purpose of the article is to study perspectives and develop recommendations for using marketing tools in the interests of increase of effectiveness of company's reorganization.

2 Materials and Method

Reorganization is a process of transformation of one or several companies characterized by mandatory change of their external and, probably, internal structure (Zhang 2016)—i.e., it leads to change of ownership form (Tomasic and Zhang 2012) or to change of the company's size (Romanowska 2009); generally, reorganization could be performed in three main forms with different modifications (Lisnichuk 2013):

1. Unification of several companies
2. Division of one company into several new ones
3. Transformation of one company into another one (creation of a new business)

Effectiveness of reorganization is ratio of profit to expenses for receiving it. In modern Russia, only financial profit is taken into account (additional profit received as a result of company's reorganization) (Kravets et al. 2013; Popkova et al. 2015a; Popkova 2014; Sozinova 2016), and expenses for reorganization include the sum of the deal (Popova et al. 2015b; Skiter et al. 2015). The currently used formula of evaluation of effectiveness of company's reorganization could be generally presented in the following way:

$$\text{Eff}(\text{reorg}) = \Delta P / PD, \quad (1)$$

where

Eff(reorg)—effectiveness of company's reorganization

ΔP —growth of profit as a result of company's reorganization

PD—price of the deal on company's reorganization

This formula takes into account only short-term consequences of company's reorganization and does not reflect its effectiveness. For the purpose of larger reflection of the reorganization effect, we offer to modify this formula in view of marketing advantages for business in the following way:

$$\text{Eff}(\text{reorg} + \text{mark}) = (\Delta P^* (\text{MSbr}/\text{MSar}))/\text{PD}, \quad (2)$$

where

Eff(reorg + mark)—effectiveness of company's reorganization in view of marketing aspect

MSbr—market share of company before reorganization

MSar—market share of company after reorganization

3 Results

Let us evaluate effectiveness of the largest deals on reorganization of modern Russian companies over the recent years with the help of the traditional and modified formula. In 2013, a deal on reorganization of NC Rosneft PJSC and TNC VR Holding OJSC was concluded (Vedomosti15 2015). Here's a calculation of its effectiveness:

$$\text{Eff}(\text{reorg}) = \$61 \text{ billion}/\$54.9 \text{ billion} = 1.11.$$

$$\text{Eff}(\text{reorg} + \text{mark}) = \$61 \text{ billion} * (45/32)/\$54.9 \text{ billion} = 61 * 1.4/54.9 = 1.55.$$

In 2015, Gazprombank OJSC and Stroygazconsulting were reorganized (KPI 2015). Here's a calculation of its effectiveness:

$$\text{Eff}(\text{reorg}) = \$5.6 \text{ billion}/\$5.3 \text{ billion} = 1.06.$$

$$\text{Eff}(\text{reorg} + \text{mark}) = \$5.6 \text{ billion} * (2.6/2.6)/\$5.3 \text{ billion} = 1.06.$$

In 2013, Rostelekom CJSC and Tele2 Russia OJSC performed reorganization (Vedomosti15 2015). Here's a calculation of its effectiveness:

$$\text{Eff}(\text{reorg}) = \$4.8/3.6 \text{ billion} = 1.33.$$

$$\text{Eff}(\text{reorg} + \text{mark}) = \$4.8 \text{ billion} * (11.9/7.6)/3.6 \text{ billion} = 2.09.$$

These three examples show that the marketing aspect is a coefficient that increases or decreases profits from company's reorganization. That's why during planning of deals on reorganization, it's expedient to take into account its marketing consequences for business. For that, we offer to use the interactive scheme of company's reorganization in view of the marketing aspect (Fig. 1).

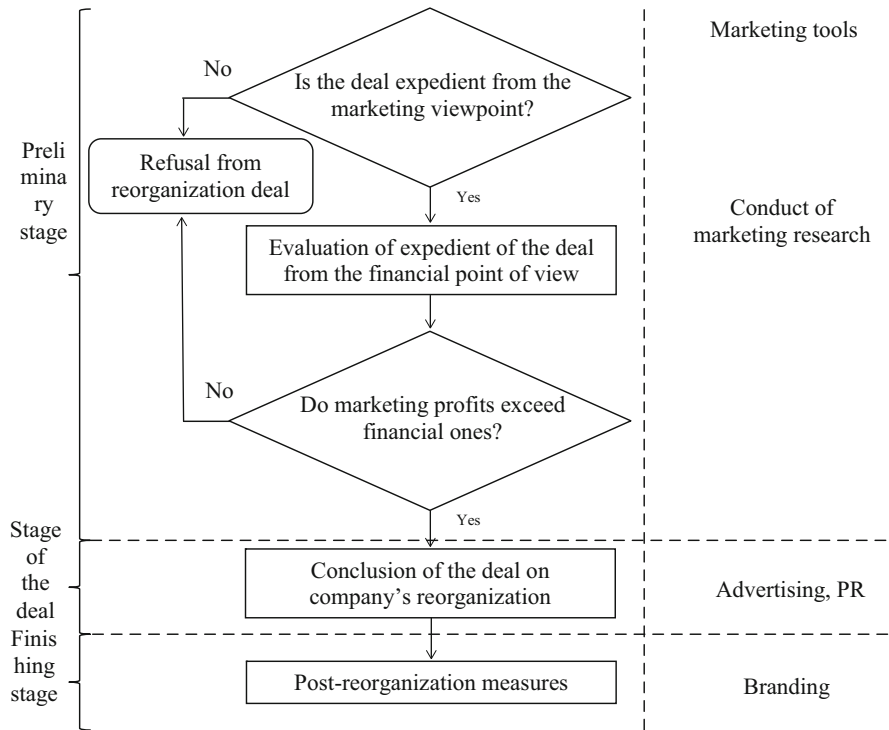


Fig. 1 Interactive scheme of company's reorganization in view of marketing aspects

As seen from Fig. 1, within the offered scheme, the reorganization is performed in three successive stages, each of which corresponds to a certain marketing tool. The first stage is preliminary—it includes determination of the deal's expediency from the marketing and financial point of view. It should be noted that marketing aspects are essential and are assessed in the first instance.

Similarly, marketing profits should exceed financial ones—in order to ensure profitability of the deal for business. That is, long-term goals should be put on the first place. It is important for supporting the company's sustainability. If these conditions are not observed, it's better to refuse from the deal on business reorganization. At this stage, it is necessary to conduct a marketing research for determining market possibilities and perspectives of company's development with the help of reorganization.

The second stage includes conclusion of the deal on company's reorganization. Advertising and PR are necessary here—in order to attract society's attention to the process of reorganization and learn the opinion of interested parties on the deal on company's reorganization and win their loyalty. The third stage supposes post-reorganization measures. Here it is important to ensure effective branding of the reorganized company in order to receive maximum profit from the deal.

Reorganization might open new production capabilities or new technologies for business (which is often the main foal of reorganization in modern Russia). Development and presentation in the market of a new innovational product require branding as the most important factor of success of these measures.

Thus, using marketing tools in the process of company's reorganization allows increasing effectiveness of this process by creation of additional—market—advantages for business and creation of a general positive effect from reorganization. It is possible to state that reorganization of modern business cannot be successful without application of marketing tools.

4 Discussion

The results of the performed research confirm the offered hypothesis and allow concluding that in view of growing responsibility of reorganization processes in the sphere of entrepreneurship due to crisis phenomena in modern economy, accounting of marketing aspects becomes not only expedient but objectively necessary for preservation of business. Founding only on financial profits from reorganization might lead to unpredictable long-term consequences that might have negative influence.

The currently used approach to reorganization of entrepreneurial structures contradicts the foundations of modern market economy and thus requires modernization in view of new market economic conditions. In these conditions, the key role belongs to marketing, the tools of which are universal for application in a lot of business processes. In the process of reorganization, a company has to emphasize on achievement of market goals of its development—as it will allow achieving larger and longer financial profits.

It is obvious that conclusion of deals on company's reorganization that contradict its marketing goals or hinder their achievement is not only inexpedient but dangerous in the conditions of already formed market economy, as it is related to a high risk of reduction of competitiveness or aggravation of market positions of business.

5 Conclusion

Scientific and theoretical significance of the authors' conclusions and results is confirmed by their contribution into development of foundations of the modern concept of marketing and concept of company's reorganization. This article has a clear practical value for modern business as it offers applied recommendations for increasing the effectiveness of its reorganization processes.

It should be noted that the offered modernized formula for evaluation of effectiveness of company's reorganization is very simple. On the one hand, this is a

reason for simplicity of its use—as it does not suppose complex massive calculation and does not contain indicator measures in various units and is based on the use of easily accessed information.

On the other hand, this reduces precision of the results received with this formula—which limits the results of the performed research. In particular, market profits could include not only growth of the market share of the company but increase of its competitiveness, and during evaluation of expenses for reorganization, marketing expenses could be taken into account. Development of more complex formula that allow taking into account these and other marketing aspects of reorganization during evaluation of its effectiveness is a perspective direction of further scientific research.

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Philosophy of Overcoming “Institutional Traps” and “Black Holes” Within the Global Crisis Management

Elena G. Popkova, Irina V. Lysak, Inna N. Titarenko, Vyasheslav Golikov,
and Ivan A. Mordvintsev

Abstract The purpose of the article is to prepare the philosophical basis of overcoming the “institutional traps” and “black holes” within the global crisis management. The methodology of the work is based on the use of general scientific methods of the research: analysis and synthesis, induction, and deduction. The authors specify the categorical apparatus of overcoming “institutional traps” and “black holes” within the global crisis management, provide philosophical substantiation of value and significance of “institutional traps” and “black holes” within the global crisis management, and prepare the methodological basis for further scientific creativity in the sphere of overcoming the “institutional traps” and “black holes” within the global crisis management. As a result of the research, the authors come to the conclusion that “institutional traps” and “black holes” are complex dynamic economic phenomena and processes that are not easily measured but need to be scientifically explained and studied due to their negative influence on modern economic systems. The philosophical basis of overcoming the “institutional traps” and “black holes” within the global crisis management is to be a foundation for further breakthrough scientific and practical research in this sphere.

JEL Codes H12 • O17

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1 Introduction

At present, crisis management is at the stage of systemic transformation. With growth of influence of the global factors, not only its scale (quantitative characteristics) but also qualitative characteristics, which determine specifics of its conduct and management objects, change. Due to that, crisis management is necessary not only for entrepreneurial structures at microlevel but for the whole country, i.e., it goes to the macro-level.

It is impossible to use the models of crisis management of the corporate scale at the national scale, as it is necessary to fight different threats; the measures taken have a systemic character and influence the economy indirectly, that is, they create conditions, and for prevention of crisis and overcoming of its consequences, their realization depends on market agents and they offer a delayed effect.

An important role among the challenges faced by crisis management at the national level belongs to “institutional traps” and “black holes.” These new notions are not yet conceptualized, which leads to a scientific and practical problem related to complexity of management of insufficiently studied phenomena and processes and actualizes the task of strengthening the philosophical foundation of modern global crisis management. The purpose of the article is preparation of the philosophical foundation for overcoming the “institutional traps” and “black holes” within global crisis management.

2 Materials and Methods

Theoretical and methodological basis of this research consists of the modern theory of economic growth, the main settings and systemic principles of which are given in the works by Popkova et al. (2013a, b) and Popkova (2013).

Such basis is a new institutional theory (neo-institutionalism), the main aspects of which are given in the works of representatives of the scientific school such as Richter (2016), Raja (2014), Von Staden and Bruce (2015), and Williamson (2000).

During the research, the authors use the key provisions of the theory of global crisis management, the sense of which is provided in the works by Fenger and Quaglia (2016), Ma and Zhang (2016), Nisticò (2016), Andreeva and Shevchik (2016), and Evans (2016).

The methodology of this article is based on the use of general scientific methods of the research: analysis and synthesis, induction and deduction, as well as method of formalization.

3 Results and Discussion

“Institutional traps” are institutes that lost their topicality but preserve high sustainability. That is, their initial creation was predetermined by objective necessity, but after the change of socioeconomic situation, the need for them disappeared, or a need appeared for their elimination or modernization—as in their current form, they began influencing the economic system negatively.

The theory and practice of “institutional traps” are viewed in detail in the works of Islamutdinov (2016), Bagautdinova et al. (2014a, b), Azaryan and Voziyanova (2016), Alekseeva et al. (2014), and Gareev (2013). An example of “institutional trap” is bureaucratic apparatus, formed for the needs of socioeconomic system, which later became a barrier on the path of its development.

If the conceptual foundations of study of “institutional traps” are formed in the works of modern authors, the very notion “black holes” is not well elaborated in economy. This article offers to treat them as economic phenomena and processes with strong and sustainable institutional connections that are not subject to the official statistics and are beyond the legal field.

Drawing parallels between characteristics of “black holes” in physics—the main of which are unique spatial and time conditions and colossal gravitation—we distinguish the two main characteristics of such “holes” in economy:

- Non-official nature: they are subject to other laws that contradict the existing normative and legal provision of economic activity.
- Sustainability: institutional connections of these phenomena and processes are so strong that economic agents cannot fight them.

The examples of “black holes” in economy include corruption and shadow economy. Their existence influences negatively the functioning of economic systems, reducing their economic effectiveness. Thus, corruption increases expenses of business and creates additional barriers on the path of creation and development of entrepreneurship. Thus, it reduces the level and slows down the rate of economic growth.

In its turn, shadow economy reduces to total tax base and decreases the volume of tax revenues into the state budget. This reduces the state’s possibilities in the sphere of supporting economy in crisis and hinders the full-scale realization of social programs, reducing the population’s living standards.

In view of latent character of “institutional traps” and “black holes,” their determination and analysis with the use of quantitative tools are rather complicated. That’s why it’s expedient to use qualitative scientific methods: the tools of the institutional economic theory, in particular, the provisions of the organic approach.

Using it, it is possible to determine the role of “institutional traps” and “black holes” in functioning and development of economic systems. In our opinion, they could be compared to viruses—foreign objects that violate the normal work of the organism (economic system). The organic approach also allows determining the

potential means of fighting these negative phenomena and processes similar to the living organism.

The scenario approach allows for analysis of emergence and development (with the help of the method of dynamic analysis) of “institutional traps” and “black holes” in economy and for evaluation of alternative methods of fighting them (with the help of the method of comparative analysis). It provides a scientific and methodological platform for determining the logic of action of “institutional traps” and “black holes” (with the help of the method of analysis of causal connections).

The theory of systems (synergetics) allows perspective tools for scientific study of “institutional traps” and “black holes” in economy. It supposes provision of economy in the form of a system of interconnected structural and functional elements and determination of the synergetic effect that appears as a result of their interaction.

With the help of the theoretical model of economic system, it is possible to calculate the potential synergetic effect. Its further comparison with the real effect (with the help of the plan-fact analysis) allows for evaluation of the scale of “institutional traps” and “black holes” in the studied economy. This opens a possibility to measure them quantitatively and study them more precisely.

4 Conclusion

Thus, it is possible to conclude that “institutional traps” and “black holes” are complex dynamic economic phenomena and processes that are not easily measured but require scientific explanation and detailed study due to their negative influence on modern economic systems. The prepared philosophical foundation of overcoming the “institutional traps” and “black holes” within global crisis management is to become a foundation for further breakthrough scientific and practical studies in this sphere.

It should be noted that despite its unofficial character, “institutional traps” and “black holes” are present in all economies of modern countries of the world. At the same time, uncertainty of the nature of these phenomena and processes does not allow for determining the factors that influence the level of their development.

Despite the absence of the generally recognized tools of overcoming of “institutional traps” and “black holes” in economy, it is obvious that its success requires the influence on the causes of emergence of such phenomena and processes, as fighting the consequences will bring only short-term result or will even increase their influence on economic processes and the scale.

The offered methodology of further scientific creativity in the sphere of overcoming of “institutional traps” and “black holes” within global crisis management allows selecting and systematizing knowledge and experience within the sphere of study of these phenomena and processes, determining their presence, and evaluating their scale. However, the search for the means for their detailed analysis and

development of universalized tool of their overcoming is still a perspective direction for further scientific research in this sphere.

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Part III
**Fighting the “Black Holes” of the Global
Economy as a Means of the Global Crisis
Management**

Perspectives of Fighting Infrastructural Disproportions of Entrepreneurial Activities Within Global Crisis Management

Irina A. Morozova, Tatiana N. Litvinova, Olga A. Boris,
Vladimir V. Bogdanov, and Sergei N. Makarenko

Abstract The purpose of the article is to study the perspectives of fighting infrastructural disproportions of entrepreneurial activities within global crisis management. For that, the authors use regression and correlation analysis; methods of comparative, structural, and problem analysis; and methods of statistical analysis. The article offers classification of countries according to the quality of infrastructural provision of entrepreneurial activities with distinguishing the categories of countries with leading, moderate, and lagged business infrastructure, determines the role of infrastructure for development of entrepreneurship, and determines and analyzes global infrastructural disproportions of entrepreneurial activities. As a result of the research, the authors made a conclusion that there is a strong direct dependence between the level of development of entrepreneurship and the level of corresponding infrastructural provision. Infrastructure plays an important role in development of entrepreneurship, as it determines conditions of functioning of business structures and provides them with necessary resources. Existence of infrastructural disproportions violates the actions of mechanism of international division of labor and movement of international flows of production factors and final products. Under these conditions, the existing potential of maximization of global economy effectiveness cannot be fully realized. Global enterprises that are organized in the most rational way and allow reducing cyclic character of

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development of global economy require the leveling of international infrastructure, which is stimulated by the offered infrastructural strategy of global entrepreneurship crisis management.

JEL Codes O18 • L53 • H12 • F63

1 Introduction

In recent years, the importance of a new subject of international economic relations—global entrepreneurship—has been growing. Global companies are often intermediaries between different countries and an alternative of export-import operations. They ensure highly effective satisfaction of global demand needs and solving the sales problems of the global offer, thus stimulating the rationalization of the global economy.

This article offers a hypothesis that modern global economic system is peculiar for existence of substantial infrastructural disproportions of entrepreneurial activities which hinder development of global business and are a reason for long economic crises. That's why the authors seek the goal of verification of this hypothesis and study of perspectives of overcoming the infrastructural disproportions of entrepreneurial activities within the global crisis management.

2 Materials and Method

Theoretical and methodological aspects of studying infrastructural provision of entrepreneurial activities, as well as the issues of applied character in this sphere, are studied in multiple works of authors such as Enikeeva et al. (2016), Alemu (2015), Menshchikova and Tribunskaya (2015), Roig-Tierno et al. (2015), McVoy and Schaffner (2014), Borisovich and Aleksandrovna (2014), and Valeryevna et al. (2014).

Conceptual provisions of the global crisis management are studied in the works by Wijesiri (2016), Karyotis and Alijani (2016), Polinkevych (2016), Kravets et al. (2014), Skiter et al. (2015), Prochniak and Wasiak (2016), Fagerberg and Srholec (2016), Christensen et al. (2016), Morel and Chauvin (2016), etc.

With the above analysis tools, the authors study dependency of the level of entrepreneurship development (y) on infrastructural provision (x). In order to determine and analyze the global infrastructural disproportions of entrepreneurial activities, the authors use the methods of comparative, structural, and problem analysis, as well as methods of statistical analysis.

In particular, with the help of standard statistical functions of Microsoft Excel, the authors calculate mean deviation in order to calculate mean absolute deviation of the indicator of development of infrastructure entrepreneurship from their mean absolute error according to the following formula:

$$d = \sum |x_i - x_{cp}|/n \quad (1)$$

d —mean deviation

x_i —value of the selection indicator

x_{cp} —mean absolute error of all selection values

n —number of observation units (volume of selection)

3 Results

Let us determine the value of infrastructure for development of entrepreneurship. For that, let us analyze the existing statistical data as to value of the index of development of entrepreneurship and index of development of business infrastructure in various countries of the world in 2014 (Table 1).

Based on the data from Table 1, the model of the paired linear regression $y = 0.64 + 3.69x$ is received. This means that with increase of the value of index of business infrastructure development by 1 point, the value of index of development of entrepreneurship grows by 3.69 points. The received regression model is statistically significant, as the value of correlation coefficient (92.69%) is more than 90%. Straight average of all values of the selection constitutes 4.16 points.

Calculation of standard (mean square) deviation (1.96 points) showed that scatter of the level of development of entrepreneurship infrastructure in the studied selection is rather high (47%)—accordingly, variability of the data in the selection is high. The received value of mean deviation (1.63 points) shows that modern global economic system is peculiar for substantial infrastructural disproportions of entrepreneurial activities—their variation constitutes almost 40%.

Their economy is characterized by low investment attractiveness (both for internal and external investors) due to geopolitical and normative and legal instability and other reasons. That's why they are peculiar for underfinancing of infrastructure due to general lack of financial assets.

The second reason is low level of qualification and innovational activity of human capital. The third reason is underdevelopment of the system of transport logistics. The fourth reason is underdevelopment of the institutional system. A perspective direction for overcoming the determined global infrastructural disproportions of entrepreneurial activities and reasons for their emergence is the proprietary infrastructural strategy of crisis management of global entrepreneurship, presented in Fig. 1.

Table 1 Estimate data for conduct of economic and statistical analysis for 2014

Groups of countries	Countries (selection) (<i>i</i>)	Values of indicators in the studied selection, points		
		Index of development of entrepreneurship (<i>y</i>)	Index of development of бизнес инфраструктура (<i>x</i>)	Deviation from average value ($x_i - x_{cp}$)
Countries with leading infrastructure	China	8.34	6.69	2.53
	Singapore	8.56	6.49	2.33
	Japan	6.98	6.38	2.22
	Spain	7.01	6.34	2.18
	Netherlands	7.94	6.3	2.14
	Switzerland	8.41	6.21	2.05
	Great Britain	7.41	6.18	2.02
	USA	8.02	6.17	2.01
Countries with moderate infrastructure	Russia	5.83	4.81	0.65
	India	6.08	4.76	0.60
	Greece	5.69	4.54	0.38
	Turkey	6.05	4.37	0.21
	Mexico	6.91	4.28	0.12
	Korea	7.35	4.21	0.05
	UAE	7.22	4.19	0.03
	South Africa	6.23	4.18	0.02
Countries with lagged infrastructure	Nigeria	4.66	2.1	-2.06
	Kenya	4.63	2.05	-2.11
	Libya	4.58	1.99	-2.17
	Bangladesh	5.38	1.85	-2.31
	Egypt	5.38	1.67	-2.49
	Jordan	5.13	1.53	-2.63
	Cuba	4.59	1.32	-2.84
	Iran	3.95	1.18	-2.98

Source: The Economist Intelligence Unit (2014), Klaus Schwab (2015)

As seen from Fig. 1, the concept of development supposes promotion of the lagged structural elements of the system to the level of leaders, not vice versa—that's why within crisis management of global entrepreneurship, a strategic goal is development of infrastructural provision of entrepreneurial activities in the countries with underdeveloped infrastructure.

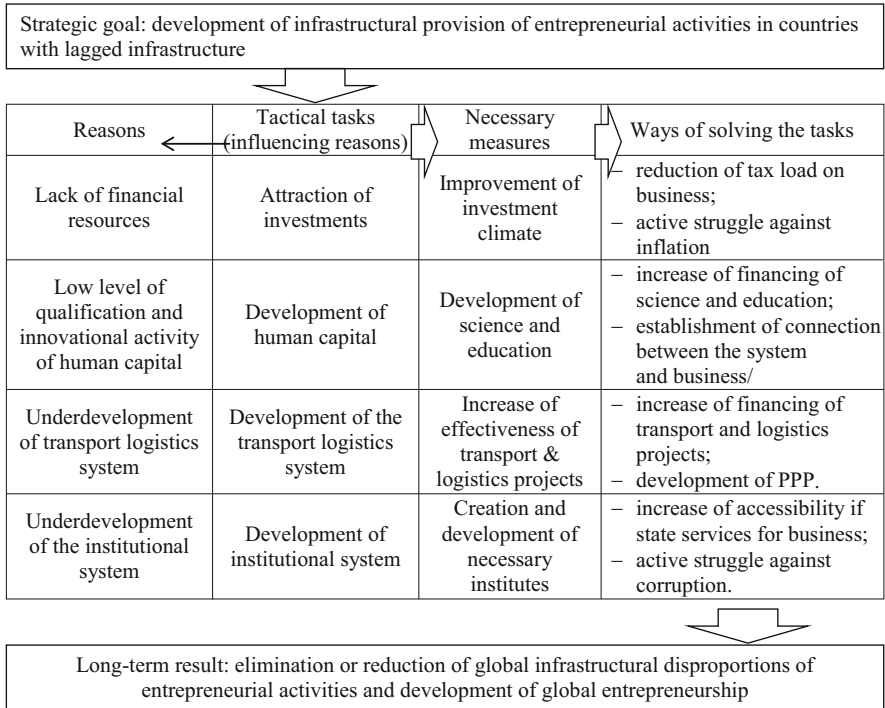


Fig. 1 Infrastructural strategy of crisis management of global entrepreneurship

4 Conclusion

It should be concluded that the offered proprietary classification of countries as to quality of infrastructural provision of entrepreneurial activities with distinguishing countries with leading, moderate, and lagged business infrastructure contributes into development of the concept of infrastructural provision of entrepreneurial activities due to specification of its categorical structure. Determination and analysis of global infrastructural disproportions of entrepreneurial activities and their connection with crisis phenomena in the global economy stimulate development of the concept of global crisis management. This determines theoretical significance of the performed research.

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Creative Industries and Areas as Tools of Global Crisis Management

Larisa I. Ermakova and Daria N. Sukhovskaya

Abstract The topicality of the problem of the development of towns in Russia country can hardly be overestimated. More or less favorable life conditions can be found in the Moscow city region or in the regional centers. After the collapse of the USSR, many town-forming plants and factories were closed which led to the sharp fall in the standard of living in those towns and social instability. Since then the situation has not essentially changed for the better. The problem of building creative areas and the economy of creativity is of great significance for modern Russia. Today the developed postindustrial countries see the source of the maturity and stability of the society in the transition to the “economy of creativity” or as it is also called “the creative economy” where the main factor of production is the creative activity of the population capable of creating principally new products. The main goal of the transition is the building of the developed economy by creating an innovative environment, and the main instrument of achieving this goal is the “building” of creative towns with the creative industries as their basis. The elaboration of these topics starting with the American sociologist and futurologist Elvin Toffler has been the main focus of attention of scholars and practitioners across the world for nearly half a century. But so far there isn’t a universal scenario of the transition from one type of the economy to another. To achieve this goal, one needs to take into account the specific character of each individual country: size of the territory, availability of natural resources, size of the population, level of education, and culture, mentality, national traditions, and many others.

JEL Classification Code O18

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1 The Notions of “Creative Industries” and “Creative City”: Theoretical and Practical Aspects

In Russia the problem of “the creative towns” and creative industries is relatively new. And, nevertheless, having emerged in the early twenty-first century, it was able to draw attention of the eminent Russian scholars and practitioners to its problems and opportunities. Having shown itself in the West to be an effective “anti-crisis” instrument, creative industries start winning the leading position in the cultural and economic policy in the regions. Today one can ascertain the fact of the successful existence of creative industries not only in the cities with millions—strong population such as Moscow or St. Petersburg—but also in some other cities such as Myshkin and Mandrogi.

Over time the attitude to culture and approaches to its study constantly changed. Many scholars such as D. Throsby, B. Fray, A. Klames, George O’Connor, A. Rubinstein, M. Matetskaya, and others devoted their works to the study of those problems. The article by M. V. Matetskaya “Creative industries through the lens of cultural policy” notes that culture has no university-accepted definition at all, and the effects or the complexity of the definition of the term “culture sector,” “culture branches,” or “industries” is the problem of cultural policy (Matetskaya 2011).

It is important to distinguish between the notions “culture industries” and “creative industries.” First the notion of “culture industries” was introduced in Great Britain by the Greater London Council. The term included (a) those types of cultural activity that do not require public financing, are commercial, and promote the rise in the well-being of the population and (b) all kinds of cultural activity (both commercial and noncommercial) targeted at the output of culture production and provision of services and accordingly are connected with mass consumption.”

At the end of the 1980s, “culture industries” give way to “creative industries,” the key factor of their definition being technological reproduction. In November 1998, the document on mapping the creative industries of the Department of Culture, Media, and Sport of the government of Great Britain for the first time formulated the notion of “creative industries”: “Creative industries is the activity where the individual creativity spark, skill or talent lies at the core and which has the potential of creating added value and jobs by the reproduction and exploitation of intellectual property” (Zelencova and Gladkih 2010).

With the development of creative industries, the governments of different countries started searching for the ways of the evaluation of the contribution they make to the economic and social well-being both of individual regions and the society as a whole. We know from the works of the classics of the economy of culture (Throsby, Rubinstein) that culture goods often lack monetary value, but, indisputably, they offer nonmaterial value for the society. However “from the mid-1990s the active discussion of the system of indicators determining the contribution of culture and creative industries to the development of the economy both

at the level of towns and regions and at the level of states and inter-state institutes is still under way” (Matetskaya 2011). Thus, the evaluation of creative industries from the point of view of their direct contribution to the GDP is widely spread even to this day. And still, according to the author, while evaluating the economic efficiency of creative industries, it is necessary to follow the results of their activity at the regional level or at the level of towns and also to determine and analyze the volume of the market of this industry.

Today, perhaps, the most prominent figure in the field of the study of the phenomenon of “the creative town” is Charles Landry—the British specialist in urban development and the author of the books on urban development such as *The Quality of Life and Urban Environment*, *The Revival of Towns Through Culture*, *The Creative Town*, and many others. Under his guidance the urban projects were realized across the world—from Albania to Hong Kong, from New Zealand to Mexico (Biography and Landry 2016). His concept of the “creative” town was born of his reflections on the fact that some towns were able to adapt to the historical changes and some even succeeded in benefiting by those changes. According to this concept, culture resources are the raw materials that are replacing oil, steel, and gold and at whose expense the town’s basic values are formed. Thanks to the culture resources, the image of towns favorable for the attraction of investments and development of tourism is constructed.

The main task of the creative town is the creation of the innovative environment as creativity is the prerequisite for innovations. The chief instrument in the creation of such environment is creative industries. According to Ch. Landry, innovation is the practical realization of a new idea obtained through the creative thinking of the representatives of the creative class. The creative class or creative people are viewed by the author not as a group of the representatives of certain “bohemian” professions but as a class of the representatives of quite different professions consisting of talented, flexible, and energetic people capable of free and creative thinking, of pushing back the boundaries of the ordinary. “Creative people work at the boundaries of the zone of their competence but not in its center” (Landry 2006).

2 The Necessary Conditions for the Development of Creative Industries and the Realization of the Concept of “Creative Town”

“In the course of the research we outlined a whole number of the conditions essential for the development and successful performance of creative industries and realization of the concept of “the creative town.” We will attempt to classify all these conditions and determine which of them have been implemented in Moscow, and the realization of which is in the plans for the future.

The significance of mapping. Indeed, competent management of the industry and its effective development both in theory and in practice require the research needed to determine its scale, i.e., the boundaries of the sector under examination, composition, classification, number of the employed, volume of the market, commodity circulation, financial capacity, etc. In Great Britain, home to creative industries and the concept of “the creative town,” the Department of Culture, Media, and Sport one year after “the new Labor Party members” had come to power prepared the document on the mapping of creative industries. In Moscow the situation is different; today the document on the mapping does not exist, and its creation is not in the plans of the government of the capital city.

The creation of a special structure. If we take the British experience as a basis, then the fact of the availability of a special structure “for the solution of the tasks of the creative industries” at the federal and regional level that would enable one to solve the strategic tasks of the development of this sector is of great significance for the successful performance of creative entrepreneurs. Today the RF Ministry of Culture has no department of this kind. The center of the projects “The creative Moscow” set up by the city Department of Culture tackles the issues that are within the competence of the similar department in Great Britain; however, the list of the issues in question is far from being complete.

Statistics formation. The scale of the problem related to the statistical registration can be judged by the indicators needed to calculate the index of creativity. Moreover, the Russian Board of Statistics today does not register the businesses where the number of those employed does not exceed 15, but the creative entrepreneurship is characterized by just those micro-businesses, freelancers, and individual entrepreneurs.

Price affordability of the rental areas. The exiting creative clusters in Moscow are characterized by rather a high rent. The creative entrepreneurs just embarking on this business with not so high income lack the financial opportunity to rent an office or a showroom in “Vinzavod” or “Flakon.” So the availability of the areas with a low rent that at this moment are nonexistent is an important condition for the development of the creative industries in the city.

Small credit system. Like any other business, creative entrepreneurs have the need for borrowed funds. Today an increasingly greater number of the banks extend their package of services by crediting small business. Also a complex of measures developed by the Department of Science, Industrial Policy, and Entrepreneurship including such options as subsidies to the starters, subsidies to reimburse interest on credit, and subsidies to reimburse part of the costs connected with the participation in the congress-exhibition events and also the fund for the support of crediting small business in Moscow is useful for the solution of the task. According to the department site, the volume of credits offered to small- and medium-sized businesses in Moscow in 2015 amounted to RUB 1894.1 billion, of which RUB 1881 billion belongs to medium-sized, small, and microbusinesses and RUB 13.3 billion to individual entrepreneurs.

Consulting support. Often creative entrepreneurs are not knowledgeable about the problems of doing business as they do not have special education in the field of

management, marketing, and advertising. To do their business successfully, they need consultation from experts, which will enable them to save time and money for education and attraction of additional staff. Today there is the SBI “The small business of Moscow” that consults entrepreneurs about the emerging problems of doing business by online chat or a special form “Put a question to specialist” and also by the single reference service of the support of small business in Moscow. There is also the SBI “Moscow Centre of Innovative Development” that offers all-round consulting support to the participants in the market of innovative products and services who currently work in Moscow.

Intermediary agencies. In Great Britain there is a great number of special agencies—the intermediaries between the creative entrepreneurs and local authorities—which substantially improves the connection between them and enables them to quickly respond to the needs of the industry. There are no such agencies in Moscow; partially this function is performed by the agency “Creative Industries” but only in the one-way order: authorities-business.

Skilled staff. Creative industry is a comparatively new sector of the economy, and as a result it is suffering from an acute skilled staff shortage. Today specialists in the field of creative entrepreneurship are extremely sought after in the labor market.

Legislative regulation. The important condition for the development and successful performance of creative industries is the availability of the legislative basis, legal, financial, and tax mechanisms. But more important is the solution of the problem of the nonobservance of the law, specifically related to part 4 of the Civil Code of the RF, dedicated to copyright.

Financial support. Obviously, there is the need for the state support of specialists and scholars in the field of creative industries in order to conduct topical research such as, for example, mapping.

As to the deliberately “unprofitable” types of art, for example, theatre, it is essential to elaborate protection measures; otherwise they risk dropping out of the cultural process. It is about a compulsory state support in the form of financing and substantial modifications of the laws regulating the work of the institutes of classical culture. However, this does not mean that managers of such kind of institutes of culture should not be guided in their work by the advanced principles of project management, exiting marketing strategies, and so on.

The formation of the reporting system. The countries that have followed the path of the postindustrial development already have a well-functioning system of reporting for the subsector of the creative entrepreneurial industry. Every year the governments of Great Britain, Germany, China, and other developed countries publish the reports on creative industries. Due to the exiting problems in Russia with the statistical reporting, with the determining of the industry boundaries, the number of the employed, financial volume, etc., it is difficult today to make an industrial report.

3 Conclusion

During the entire human history, the question “How does the state create wealth?” was changing depending on the type of the society. In the traditional society, the source of wealth was chiefly agriculture, in the industrial society, industrial production, and in the post-industrial society, the production of intellectual product. To produce the latter, one needs an innovative environment, i.e., the combination of the internal environment and the external conditions which is the fundamental criterion for the realization of the effective innovative activity. Such kind of combination of the internal and the external within the limits of one territory is the key condition for the implementation of the concept of “the creative town.” As we remember, “the creative town—is the combination within the limits of the town and region of the creative abilities (creativity) of individual people and communities for the formation of the economically and socially favorable urban environment” (Zelencova and Gladkih 2010). And in order to identify and develop the creative abilities of individual people and the creative undertakings of the communities, we need a developed system of creative industries. It is not only about offering a quality and affordable culture product in the form of the studios of children’s creativity or special programs of the creative development for older generation but also about the substantial modifications of the legislative base and statistical registration but, the most important thing, about the priority attitude of the authorities to the development of just this type of social activity.

Acknowledgment The publication is prepared within the research project № 16-33-00035 backed up by the RSSF.

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Methodological Approach to Development and Realization of Industrial Enterprises' Competition Strategy

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Abstract The article considers methodological aspects of the development and realization of a competition strategy of industrial enterprises. We provide the foundations of significance and necessity to develop a competition strategy at the current stage of economic development. In spite of a great number of researches in the field of competition strategies and behavior of businesses by Russian and foreign economists, those studies are gaining particular importance—under dramatically changing circumstances—which have specific instructive materials. The authors introduce a methodological approach to the development and realization of a competition strategy of industrial enterprises. This approach will allow the enterprises to generalize the experience of their strategic development and systemize the activities in competition strategic management by cultivating and implementing an efficient competition strategy.

JEL Classification Codes D20 • D23 • D24

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1 Introduction

Today, the necessity to develop a competition strategy is caused by the reason that the competitiveness of industrial enterprises does not fit with the structural changes in Russian economy related to the growth of competition and the development of new technology. Low financial soundness, liquidity and solvency, high dependence on sources of borrowing, the shortage of own funds and insufficient current assets, high capital consumption, the lack of markets, and the absence of investment security make it impossible to forecast the development of enterprise. Therefore, investigation into methodological aspects of the development and realization of a competition strategy of industrial enterprises is of paramount importance both for economic science and activity.

The problems of competition theory, strategic management, and planning have been studied by many Russian and foreign scientists and specialists, such as G. L. Azoyeva, D. Aaker, R. Ackoff, F. Analoui, I. Ansoff, C. Bowman, O. S. Vikhansky, A. L. Gaponenko, G. Johnson, A. T. Zub, R. Kaplan, B. Karloff, K. Keller, D. Collis, Ph. Kotler, G. B. Kleiner, Y. A. Malenkov, V. D. Markova, M. Mescon, H. Mintzberg, V. N. Parakhina, M. Porter, Y. B. Rubin, N. A. Savelyeva, A. Thompson, R. A. Fakhrutdinov, and others. Although the theory of forming and using a competition strategy of enterprises has been thoroughly studied, the practical aspects of the problem have been insufficiently considered. So, it is necessary to research the methodological foundations of development and realization of a competition strategy in accordance with specific functioning of enterprises in the competitive market environment (Romanovskaya 2014); (Egorova 2011); (Kuznetsov et al. 2009).

2 Materials and Methods

In the process of research, we used general scientific methods of study, such as those of induction and deduction, analysis and synthesis, classification and grouping, as well as specific methods of situational, comparative, economic, and statistical analysis and methods of expert and strategic analysis.

3 Results

In conditions of market economy, the development and realization of a competition strategy are the key to the successful functioning of Russian industrial enterprises. However, the analysis of theory and praxis of development and realization of strategic plans shows that today enterprises do not have methodological tools of the development and realization of a competition strategy.

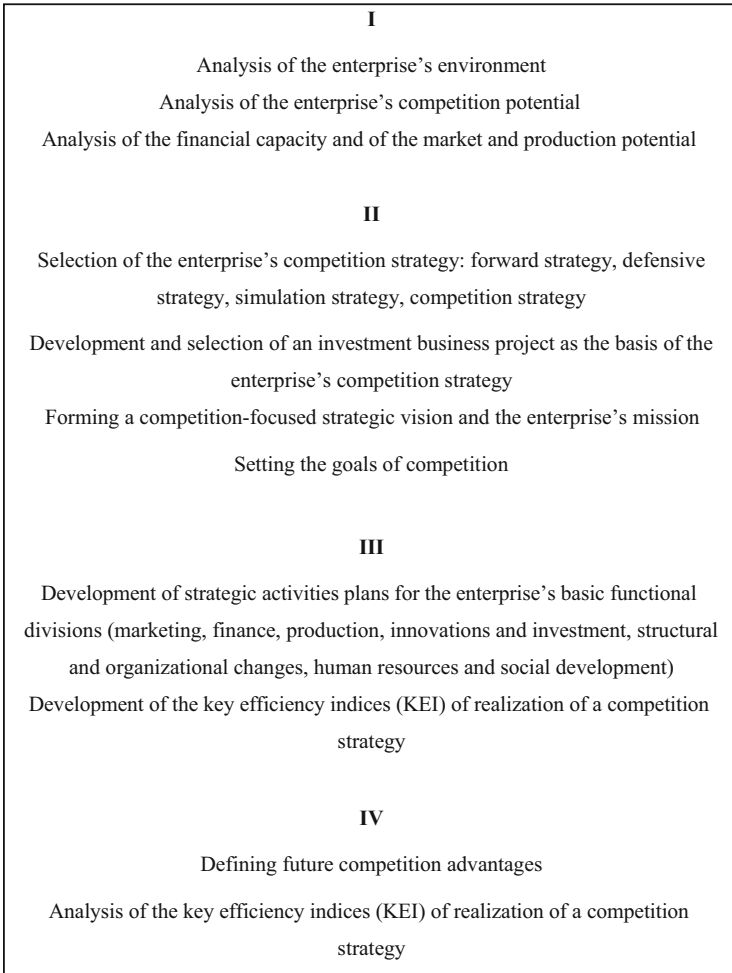


Fig. 1 Methodological approach to the development and realization of a competition strategy of mechanical engineering enterprises

In this regard, it is necessary to formalize the practice of strategic planning on the basis of corresponding methodological approach to the development and realization of the enterprise's competition strategy. The following requirements underlie the abovementioned approach (see Fig. 1):

- It should realize the principles, tools, and methods of the development and realization of the enterprise's competition strategy.
- It should reflect the model and algorithm of the development and realization of a competition strategy.

- All strategic management tools should be convenient for using by managers at the mechanical engineering enterprises.

4 Discussion

Let us consider the stages of development and realization of a competition strategy of industrial enterprises.

4.1 Preparatory (*Diagnostic*) Stage

At this stage we perform a strategic analysis of the enterprise which involves the study of external and internal environment. The external analysis evaluates the competitive macro- and microenvironment of enterprise. The internal analysis evaluates its competition potential.

4.2 Development and Implementation Stage

At this stage we select the enterprise's competition strategy, design a business project to be the foundation of competition strategy, and form the enterprise's strategic vision, mission, and strategic goals.

The selection of a competition strategy is made by the management on the basis of the performed strategic analysis.

The selection of a type of competition strategy according to our methodological approach to the development and realization of a competition strategy must meet the following criteria.

The principal criteria to choose a *forward competition strategy* are:

- A high level of competition activity resulting in introduction, development, and manufacture of new products (more than 40% within a year)
- An increase in investment and innovation projects financing (more than 40% within a year)
- High rates of fixed capital stock renovation (above 30%)
- Own RDT&E base

The key criteria to choose a *defensive competition strategy* are:

- A high level of competition activity resulting in acquisition of market, development and manufacture of new products, and improvement of existing products (more than 20% a year)

- An increase in investment and innovation projects financing (more than 25% a year)
- A continuous rise in the technological level of enterprise (more than 15% a year)
- Availability of borrowed funds (credits, loans) as a primary source of investment and innovation financing

The main criteria to choose a *simulation competition strategy* are:

- A low level of competition activity resulting in introduction, development, and manufacture of new products (less than 15% a year)
- Low production growth (below 5–10% a year)
- Low rates of fixed capital stock renovation (less than 10% a year)
- Availability of borrowed funds (credits, loans) as a primary source of investment and innovation financing
- An increase in investment and innovation project financing (above 10% a year)
- A possibility to buy licenses to produce new kinds of products developed by competitors

So, on the basis of the criteria of selection of a competition strategy which we have formulated, there will be a rather high probability of the proper choice of strategy type according to the enterprise's conditions and the market situation.

In compliance with the chosen competition strategy, we select the basic investment business project for manufacture of new, updated, or modified products.

The strategic vision, mission, and goals of competition strategy are worked out for the whole enterprise and its separate functional divisions as well (labor and wages, finance, human resources, IT, economics, sales, marketing, etc.). Their wording should reflect the frame of reference of the divisions, development direction, and contribution to the general strategic vision and mission of the enterprise.

4.3 Supporting Stage

At this stage we prepare a plan of strategic activities for the enterprise's basic functional divisions and the sources of its financing. The development of the strategic activity plan implies defining the primary strategic directions, formulating their objectives and tasks, and planning the actions on realization of each direction, terms of completion, and responsible performers. The sources of finance for the strategic activities plan may be both own funds (profit, depreciation) and borrowed funds (bank loans, commercial credits).

4.4 Checking Stage (Evaluation of Realization of the Competition Strategy)

At this stage we define the future competition advantages of enterprises, determine and analyze the key indices of the competition strategy efficiency, and make corrections in the competition strategy.

For assessment of the competition strategy realization, we offer to use the following key efficiency indices:

- Indices which characterize the financial and economic potential of enterprise (margin of profit, profitability ratio, rate of sales profitability, rate of growth (reduction) of the new products' sales profit share in the total of profits)
- Indices which characterize market and production potential of enterprise (rate of growth (reduction) of the new products' sales in the primary market, rate of growth (reduction) of the new products' sales in the secondary market, ratio of the utility of fixed industrial assets, rate of growth (reduction) of the new products' sales share in the total of sales, percentage of spoilage)
- Indices which characterize personnel and social potential of enterprise (coefficient of professional and qualification adequacy of the staff, labor productivity, coefficient of professional and qualification adequacy of management, turnover of staff ratio)

The analysis of indices of assessment of the competition strategy realization efficiency brings out the necessity of its improvement. In the process of adjustment of competition strategy, we revise and edit each of the stages of the strategy in order to reveal inadequacies of the long-term goals of the enterprise for the current state of business environment.

5 Conclusion

The suggested methodological approach to the development and realization of a competitive strategy will allow us, firstly, to make a complex evaluation of the competitive environment and the competition potential of the enterprise; secondly, to select a type of competition strategy according to the developed criteria; and, thirdly, to assess the competition strategy realization efficiency with the help of key efficiency indices.

Besides, the use of methodological approach to the development and realization of a competitive strategy will allow industrial enterprises to summarize the experience of their strategic development and systemize the activities in the field of strategic management of competition through development and realization of efficient competition strategy of enterprise.

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Econometric Analysis of Investment and Construction Complex of the Russian Federation

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Lilia Mikheykina, and Elena Tulinova

Abstract The presented econometric analysis of functioning of investment and construction complex is necessary for determining its influence on development of investment climate in the regions, formation of the main tendencies of housing sector development, and determining the level of its influence on economic growth of the country and regions. According to this research, the analysis tools are formed, based on application of the pattern method, method of grouping, and method of canonical correlations. As a result, the key factors of investment and construction complex are determined: volume of the works performed by construction organizations, number of unfinished buildings, cost of fit main funds of construction companies and organizations, and cost of main funds of construction companies and organizations.

According to this, top-priority and underdeveloped subjects are determined. It is found out that successfulness of construction activities is directly related to increase of the volume of performed works and cost of fit main funds and reversely to cost of main funds on the whole; on the other hand, construction develops if the volume of investment into main capital grows and prices in the new home market reduce. This

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_45

research shows that investment activities develop if the volume of the performed works and cost of main funds of construction companies grow; investment activity is directly related to the volume of investments into the main capital of construction organizations and prices in the new homes market.

JEL Classification Code B 23

1 Introduction

Investment and construction complex is a totality of subjects of economic activities and institutes involved into processes of investing, construction, exploitation, and consumption of real property object, which are connected by the same technological or economic risks (Alekseev 2011). Such treatment substantiates scientific and analytical point of view and allows actualizing modern normative base, concentrating on the directions of the research, and forming directions of long-term development of investment and construction complex.

Analysis of investment and construction complex in a regional aspect is especially important, as econometric evaluation of territories as to provision by investments and volumes of construction, creation of multifactor models, and trends of the level of development of investment and construction complex ensures study of topical problems of the sphere and influences on development of real sector of economy. For investment and construction complex, this statement is especially vivid: its state determines development of all key aspects of formation of national economy's competitiveness. Firstly, it creates the basis for the development of production forces and provides accommodation possibilities for migration and territorial consolidation of effective labor resources. Secondly, the level of development of investment and construction complex determines qualitative and economic parameters of territories' development and transport and engineering infrastructure (Ivanov 2013).

2 Materials and Methods

Investment climate in a region could be considered favorable or unfavorable under the influence of characteristics of development of one or several top-priority spheres, while others can present a completely different sphere for investing. Methodological aspects of ranking of regions as to the level of favorability of investment climate should consist in substantiation of such approaches that can ensure consideration of purely sectorial and territorial factors and their mutual influence. The system of characteristics of region's investment climate should

include sectorial evaluations for separate large groups of spheres and production spheres. At that, it is necessary to remember that no methodology of comparing the investment attractiveness of sphere and regions can replace the necessity for studying the potential objects of investing.

During the research, the following complex of econometric methods was used:

“Pattern” method that allows analyzing and ranking indicators of any sphere of activities, so it is possible to see complex and mutual interrelations of constant and variable factors on which the made decisions are made. This method is a combination of situation analysis and normative forecast (Simonov 2002).

Grouping method allows distinguishing from the mass of the initial statistical information the homogeneous groups with similarity in qualitative and quantitative aspect and allows distinguishing socioeconomic types and studying the structure of totality and analyzing connections between separate attributes.

Method of canonical correlations that helps to determine correlations ties between two groups of random values and is a natural generalization of determination of multiple correlation (Borzykh 2016). According to this method, the set of factors for studying interconnection between construction and investment activities is determined.

The first set includes indicators that characterize the development of construction sphere: volume of performed works by construction organizations, RUB million (x_1); number of unfinished buildings (x_2); cost of fit main funds of construction companies and organizations, RUB million (x_3); and cost of main funds of construction companies and organizations, RUB million (x_4).

The second set includes indicators that characterize the level of development of investment activities in the region: investment into main capital in construction sphere, RU million (x_5); volume of direct foreign investments, USD million (payment balance of the Russian Federation) (x_6); and average prices for new homes market, RUB (x_7).

This study analyzes the following sectors of economy: financial establishments that include institutional units that deal with financial intermediation. It covers banks, insurance companies, investment funds, and other similar units. State management sector (state establishments) is formed by mean of budget (state) institutional units; the main function of which is redistribution of income and wealth and provision of nonmarket services for the society on the whole and individuals (or population groups).

This research is performed in view of Russian regions, for investment and construction complex of Russia is presented unequally in the regions, so it has regional specifics of management and establishment of relations between the federal center and regions.

Two groups of methods with which a state regulates investment activities are distinguished: methods of direct and indirect influence. All forms of state influence on investment processes, according to the Law “On investment activities in the Russian Federation, performed in the form of capital investments,” are subdivided into three blocks: legal, administrative, and economic.

3 Results

Having analyzed the results of grouping by the “pattern” method, the following information on leading and underdeveloped subjects is received (Tables 1 and 2).

We see that the rankings of both lists are almost the same: leaders are Tyumen Oblast, Moscow, St. Petersburg, Krasnodar Krai, Republic of Tatarstan, Moscow Oblast, and Leningrad Oblast; underdeveloped regions are the Republic of Ingushetia, the Jewish Autonomous Oblast, the Republic of Tyva, the Republic of North Ossetia-Alania, and the Karachay-Cherkess Republic. Thus, it is possible to conclude that investment and construction activities are closely connected—that is, regions with larger investments develop the sphere of construction more actively.

For evaluation of interconnection between several factor and several resulting attributes, it is possible to use the method of canonical correlations.

Based on indicators of correlation between the first and the second groups (Table 3 and Fig. 1), the factors are divided into the groups so that they do not correlate. Values of correlation indicators within the groups show that indicators are high—i.e., connection within the groups is strong. Based on the above, it is possible to conclude that canonical analysis in this case is not applicable.

Table 4 shows that all canonical variables are significant—except for the last one, which should be excluded. Based on Tables 5 and 6, it is possible to conclude that the number of unfinished buildings should be excluded from the first group, and investments into construction should be excluded from the second group. After the exclusion of these factors, we receive new canonical variables. Canonical variables are significant (Tables 7 and 8).

Own values show how many canonical variables should be left—in this case, two of them should be left, as, beginning from the third, own values become too low (Tables 9, 10, 11, 12 and Fig. 2).

Canonical weights are interpreted as regression coefficients.

Interpretation:

Table 1 Leading subjects of grouping

No.	Investments	No.	Construction
1	Moscow	1	Tyumen Oblast
2	Tyumen Oblast	2	Moscow
3	St. Petersburg	3	St. Petersburg
4	Leningrad Oblast	4	Krasnodar Krai
5	Moscow Oblast	5	Republic of Tatarstan
6	Republic of Tatarstan	6	Moscow Oblast
7	Krasnodar Krai	7	Nizhny Novgorod Oblast
8	Republic of Bashkortostan	8	Leningrad Oblast
9	Amur Oblast	9	Samara Oblast
10	Perm Krai	10	Sverdlovsk Oblast

$$d_{11} = 0.520533x_1 + 0.732404x_3 - 0.243629x_4$$

$$d_{21} = 0.448935x_1 + 0.972619x_3 + 0.689920x_4$$

$$d_{12} = 0.030712x_5 + 0.092113x_6 - 0.211295x_7$$

$$d_{22} = 0.451045x_5 + 0.548598x_6 + 0.382557x_7$$

Result:

$$d_{11} = 0.520533x_1 + 0.732404x_3 - 0.243629x_4$$

$$d_{12} = 0.030712x_5 + 0.092113x_6 - 0.211295x_7$$

$$d_{21} = 0.448935x_1 + 0.972619x_3 + 0.689920x_4$$

$$d_{22} = 0.451045x_5 + 0.548598x_6 + 0.382557x_7$$

Table 2 Underdeveloped subjects of grouping

Underdeveloped subjects			
	Investments		Construction
1	Chukotka Autonomous Okrug	1	Karachay-Cherkess Republic
2	Kamchatka Krai	2	North Ossetia-Alania
3	Magadan Oblast	3	Pskov Oblast
4	Kabardino-Balkar Republic	4	Republic of Khakassia
5	Republic of Ingushetia	5	Jewish Autonomous Oblast
6	Jewish Autonomous Oblast	6	Republic of Adygea
7	Republic of Tyva	7	Republic of Tyva
8	Kurgan Oblast	8	Republic of Kalmykia
9	North Ossetia-Alania	9	Republic of Altai
10	Karachay-Cherkess Republic	10	Republic of Ingushetia

Table 3 Value of correlation indicator between two groups of indicators

Variable	Correlations, left set with right set		
	Investments into construction	Direct foreign investments	Prices in new homes market
Volume of performed works by construction organizations	0.6152241	0.7103496	0.6167586
Number of unfinished buildings	0.4651238	0.4032059	0.133377
Cost of fit main funds of construction companies and organizations	0.6057231	0.7311424	0.589593
Cost of main funds of construction companies and organizations	0.5766902	0.7466549	0.5695524

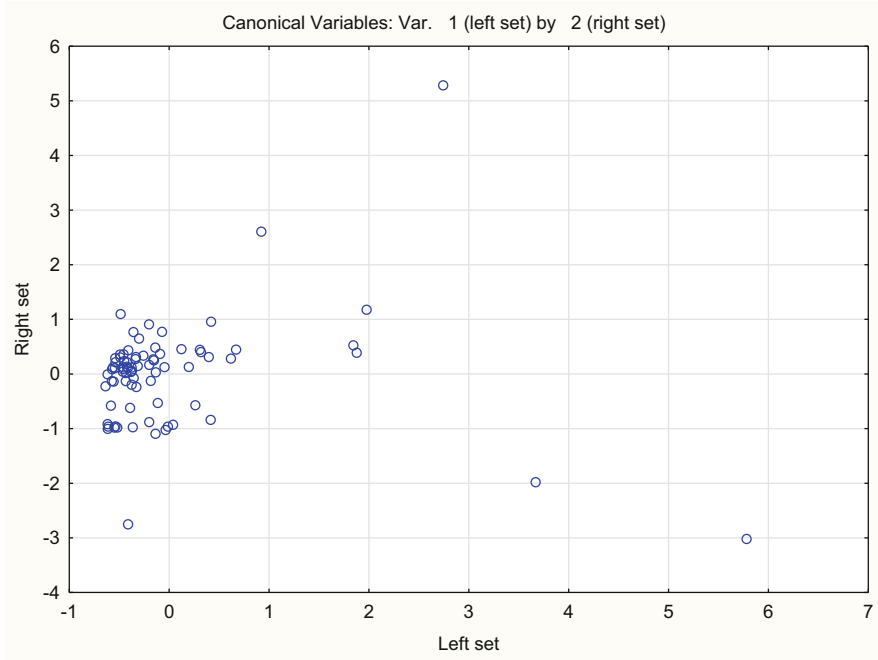


Fig. 1 Indicator of correlation between the groups

Table 4 Value of correlation indicator within the first group (left)

Variable	Correlations, left set			
	Volume of performed works by construction organizations	Number of unfinished buildings	Cost of fit main funds of construction companies and organizations	Cost of main funds of construction companies and organizations
Volume of performed works by construction organizations	1	0.5133201	0.954509	0.9516041
Number of unfinished buildings	0.5133201	1	0.5026706	0.5701163
Cost of fit main funds of construction companies and organizations	0.954509	0.5026706	1	0.9896054
Cost of main funds of construction companies and organizations	0.9516041	0.5701163	0.9896054	1

Table 5 Value of indicator of correlation within the second group (right)

Variable	Correlations, right set		
	Investments into construction	Direct foreign investments	Prices in new homes market
Investments into construction	1	0.2283434	0.3249673
Direct foreign investments	0.2283434	1	0.4660112
Prices in new homes market	0.3249673	0.4660112	1

Table 6 Indicators of significance of the received canonical variables by the chi-square test

Root removed	Chi-square tests with successive roots removed (Canonical_Lab.sta)					
	Canonical R	Canonical R^2	Chi-square	df	p	Lambda Prime
0	0.890672	0.7932967	140.9357	12	4.43110100E-24	0.1450574
1	0.4588183	0.2105143	25.85329	6	0.000237995	0.7017664
2	0.3333308	0.1111094	8.598023	2	0.01358982	0.8888906

Table 7 Indicators of significance of the received canonical variables based on the chi-square test

Root removed	Chi-square tests with successive roots removed (Canonical_Lab.sta)					
	Canonical R	Canonical R^2	Chi-square	df	p	Lambda Prime
0	0.8859035	0.7848251	122.9458	9	3.69795100E-22	0.1877334
1	0.3519688	0.1238821	10.02749	4	0.03998815	0.8724688

Table 8 Own values of canonical variables

Root	Eigenvalues (Spreadsheet1)		
	Root 1	Root 2	Root 3
Value	0.784825	0.123882	0.004165

Table 9 Table of canonical weights of the first group (left)

Variable	Canonical weights, left set (Spreadsheet1)	
	Root 1	Root 2
Volume of performed works by construction organizations	0.520533	1.84206
Cost of fit main funds of construction companies and organizations	0.732404	4.51683
Cost of main funds of construction companies and organizations	-0.243629	-6.43409

Table 10 Table of canonical weights of the second group (right)

Variable	Canonical weights, right set (Spreadsheet1)	
	Root 1	Root 2
Investments into construction	0.484779	0.448935
Direct foreign investments	0.582738	-0.972619
Prices in new homes market	0.264095	0.689920

Table 11 Table of factorial structures of the first group (left)

Variable	Factor structure, left set (Spreadsheet1)	
	Root 1	Root 2
Volume of performed works by construction organizations	0.987780	0.030712
Cost of fit main funds of construction companies and organizations	0.988160	-0.092113
Cost of main funds of construction companies and organizations	0.976503	-0.211295

Table 12 Table of factorial structures of the second group (right)

Variable	Factor structure, right set (Spreadsheet1)	
	Root 1	Root 2
Investments into construction	0.703666	0.451045
Direct foreign investments	0.816505	-0.548598
Prices in new homes market	0.693195	0.382557

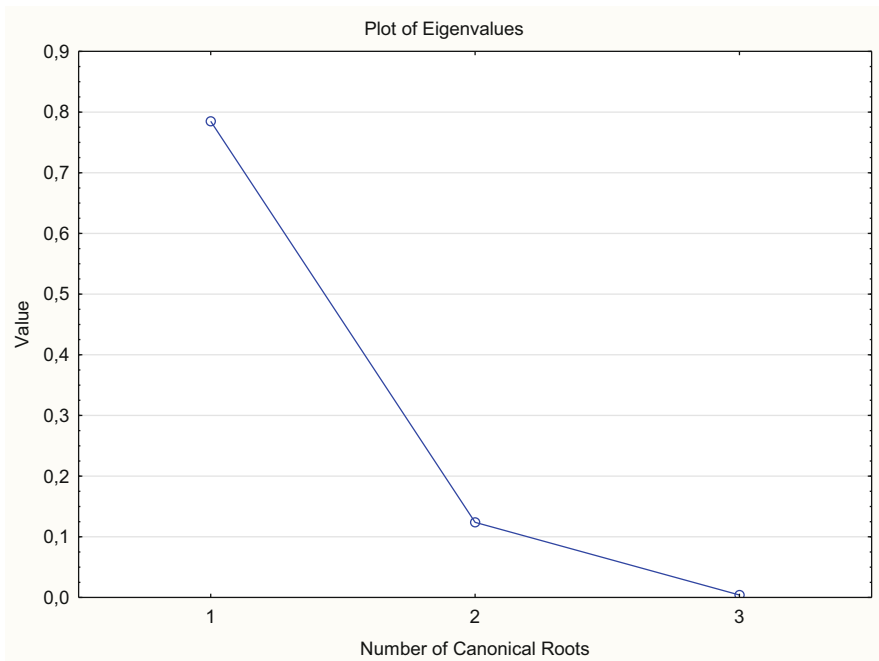


Fig. 2 Own values of canonical variables

4 Conclusions

Level of housing sector development and its influence on economic growth of the country and regions is an important factor of formation of economic and social policy of the state. Investments into residential construction and renovation of residential buildings are formed by residential investments which are a part of investments into economy. Development of housing construction increases the manufactures gross product and creates demand for products of adjacent spheres of industry and transport. Besides, development of housing sphere influences the mobility of work force and effectiveness of its use, as well as the level of human capital on the whole. Economic policy in developed countries focuses on the state of housing market and residential construction, using different types of indirect influence on its development. This attention to housing sphere is predetermined by multiplicity of empirical proofs of multiplicative influence of housing market's development on economic growth of countries and regions (Federal State Statistics Service 2016).

The received data allow for the following conclusions:

1. *Root 1—characterizes the level of development of construction:*

- Successfulness of construction activities is related to increase of the volume of performed works and cost of fit main funds; it is reversely related to cost of main funds on the whole. That is, it is necessary for the volume of fit funds to grow and for the cost of main funds to reduce, as this process decreases the share of worn main funds of construction companies and organizations (d11).
- On the other hand, construction develops if the volume of investments into main capital grows, and prices in new homes market drop (d12).

2. *Root 2—characterizes the level of development of investment activities:*

- Investment activity develops if the volume of performed works and cost of main funds grow; at that, growth of fit main funds negatively influences the inflow of investments, as usually investments are attracted into main capital, and the necessity for investments reduces with decrease of fit funds (d21).
- Investment activity is directly related to the volume of investments into main capital of construction organizations and prices in new homes market and reversely directed to payment balance of the Russian Federation for direct foreign investments (d22).

Acknowledgments The article was prepared within the framework of the Russian Humanitarian Science Foundation in 2017 (Grant No. 17-02-00216).

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Basic Elements of Statistical and Information Technology Application of Foresight Tools for Attracting Investments into the National Economy

Natalia Malykh, Elvira Yarnykh, Lyudmila Oveshnikova,
and Elena Sibirskaya

Abstract Study of the problems of investments into economy has always been in the focus of economic science—as investments influence the key aspects of economic activities, determining the process of economic growth on the whole. Taking into account serious technological underrun of the Russian economy as to most of the positions, Russia needs financial resources that can bring new technologies and modern methods of management, as well as stimulate increase of qualitative indicators of living standards.

Thus, there's a necessity for formation of a complex approach that presupposes modeling of the process of attraction of investments into national economy, which will allow—based on analysis of dynamics and planning of investment process development—selecting adequate tools for their regulation, ensuring formation of investment potential of Russian regions, and developing investment programs and projects.

JEL Classification Codes D 92

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool*

of Global Crisis Management, Contributions to Economics,

DOI 10.1007/978-3-319-60696-5_46

1 Introduction

Modeling of the process of investments attraction into national economy is a necessary condition for provision of modernization and quick technological development of national economy. Without systemic support, the probability of negative scenario of events becomes rather high—it is characterized by conservation of the current state, preservation of low level of investment effectiveness, and growth of the gap between the demand for investments from spheres of economy and their offer from investors.

Statistical tools and modeling allow gathering necessary information on investments into national economy, creating a new culture of interaction between investors and business, and determining resources necessary for achievement of the set goals. A peculiarity of this study is attraction of a wide specter of statistical tools for analysis and determination of directions of development, multiple variants of scenarios, and continuity of the process of investments attraction into national economy. During the research, apart from traditional statistical and modeling tools, the Foresight methodology is used (Foresight 2017a, b).

2 Materials and Methods

During conduct of Foresight study, various methods are used: statistical methods, information technologies, and specific methods of Foresight. Statistical methods are usually used for formalization of information and forecasting of the main tendencies. Application of information technologies simplifies collection and processing of necessary data and their presentation. Specific methods of Foresight—brainstorm, SWOT analysis, the Delphi method, method of forecasting scenarios, and road maps—are used during the research and use the result processes with other methods (Science, technology and innovation in Europe, European Communities 2008). Let us view specific methods of Foresight in detail.

To determine the level of coordination, the following methods are used:

1. Method of experts' self-evaluation:

$$K = \frac{1}{2} \times \left(\frac{\sum_{j=1}^m v_j}{\sum v_{j\max}} + \frac{\lambda}{p} \right) \quad (1)$$

v_j —weight of gradation given by the expert as to the j th criterion

m —number of competence criteria

λ —expert's self-evaluation in points

p —limit of self-evaluation scale

2. Gradation coefficient:

$$w = 12 \times \frac{\sum_{j=1}^m d_j^2}{n^2 \times (m^3 - m) - \sum_{i=1}^n T_i} \tag{2}$$

where $S_i = \sum_{j=1}^m R_{ij}$; R_{ij} is the rank of evaluation of i th element as to j th level; $\bar{S} = \frac{1}{m} \times \sum_{i=1}^m S_i$; $d_i = S_i - \bar{S}$; $T_i = \sum t^3 - t_i$; t_i is the number of equal ranks in the group; m is the number of factors; n is the number of groups of equal ranks; $w = 1$, which is the fully coordinated opinion; and $w = 0$, which is the fully uncoordinated opinion.

This model belongs to the method of cross fire influence analysis but does not use imitation modeling according to Monte Carlo method and does not require independent forecast for the key indicators. Let us view the scheme of this model (Fig. 1) (Arthur 1996).

Let us view such elements of the scheme as critical areas, probabilities, and matrix of cross fire influences.

The essay should contain the following chapters: determination of the critical sphere; why this sphere is important for forecasting the studied process; tendencies, description of previous states, and current information; expectation for the future—determination and substantiation of 2, 3, or 4 alternative states for the selected year and determination of a priori probability of appearance for each one—recommendations; building the matrix of cross fire influence for the selected spheres; names and dates of development; and editing and study of the essay.

A priori probabilities should be based on tendencies and ideas of the expert who compiled the essay by a specific factor. Probabilities should be viewed by other experts and changed according to new circumstances. Besides, probabilities could be changes for conduct of analysis of sensitivity (“what if. . .”).

The process of recalculation of a priori probabilities continues until any of the alternative states of each factor receives the probability 1.0. Formulas:

$$CV = \text{Impact} + 1 \tag{3}$$

where CV is the coefficient of influence in matrix of cross fire impact and impact ≥ 0 . $CV = 1/\text{Impact} + 1$ if impact is below 0 (Table 1).

Coefficient is used the following formula:

$$NP_i = P_i * \frac{CV}{1 - P_i} + P_i * CV, \tag{4}$$

where NP_i is the new (with correction) probability of the state of factor i , CV is the coefficient of impact, and P_i is the old (a priori) probability of the state of factor I ($I = 1, 2, 3, N$ state of factors in the matrix) (Table 2).

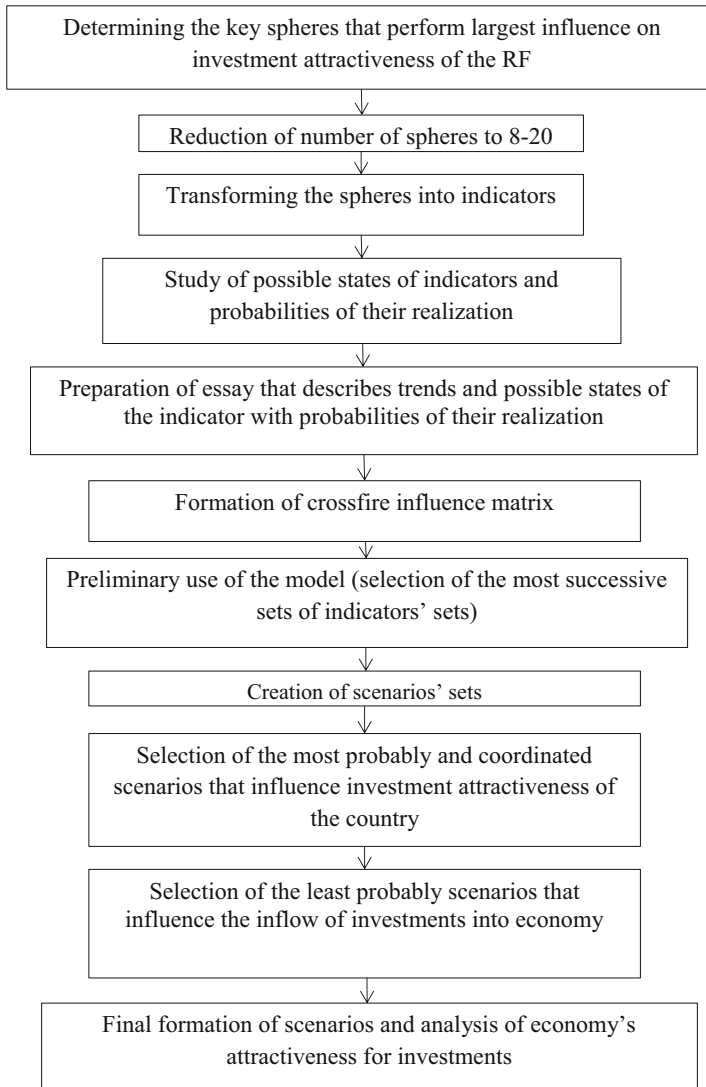


Fig. 1 Scheme of application of the IFS model for determination of scenarios of development of investment attractiveness of Russia

Software organizes the received scenarios into clusters of separate scenarios that have the same results (happening and not happening factors). The computer shows frequency of each scenario. Frequency in per cent of all separate scenarios is a posteriori probability of appearance in the future. An advantage of the IFS model consists in receipt of internally coordinated scenarios that is achieved due to refusal from the use of the Monte Carlo method.

Table 1 Value of cross fire influence in matrix and corresponding coefficients of influence (CV)

-3	1/4
-2	1/3
-1	1/2
0	1
1	2
2	3
3	4

Table 2 Correspondence of a new (with correction) probability to the impact coefficient

Impact (influence)	CV	$NP_i =$	NP_i if $P_i = 0.5$
-3	1/4	$P/4 - 3P$	0.20
-2	1/3	$P/3 - 2P$	0.25
-1	1/2	$P/2 - P$	0.33
0	1	P	0.50
1	2	$2P/1 + P$	0.67
2	3	$3P/1 + 2P$	0.75
3	4	$4P/1 + 3P$	0.80

A drawback consists in the fact that the computer program generates the states of indicators based on a simplified idea that they will be realized in the end of the forecast period. Models and scenarios could be interpreted with three methods: (1) as a forecast model with hierarchy of scenarios that forecasts which scenarios are more probable than others (taking into account certain preconditions and initial data in the model), (2) as a normative model with the “most desired” scenario that will probably happen or not and shows what is necessary for the desired result, and (3) which actions lead to certain results.

The procedure of forecasting scenario creation could be given in the form of a scheme (Fig. 2).

This figure describes stages of creation of the forecast scenario of development of Russia’s investment attractiveness with the use of the IFS model. As a result of the use of this scheme, several possible scenarios of developed are built, which are visualized with the help of road maps.

Road maps are creation of visual form of a plan scenario of development which establishes possible plots and point of critical decisions. A road map allows preparing for changes and getting advantages from new possibilities. Road maps ensure two main advantages: the process of their preparation that allows, firstly, evaluating the threats and possibilities and determining priorities and, secondly, integrating the most important factors into consistent plan. The resulting map stimulates determination of narrow spots that have to be “expanded” and specification of priorities in the sphere of investments, studies, developments, and selection of personnel.

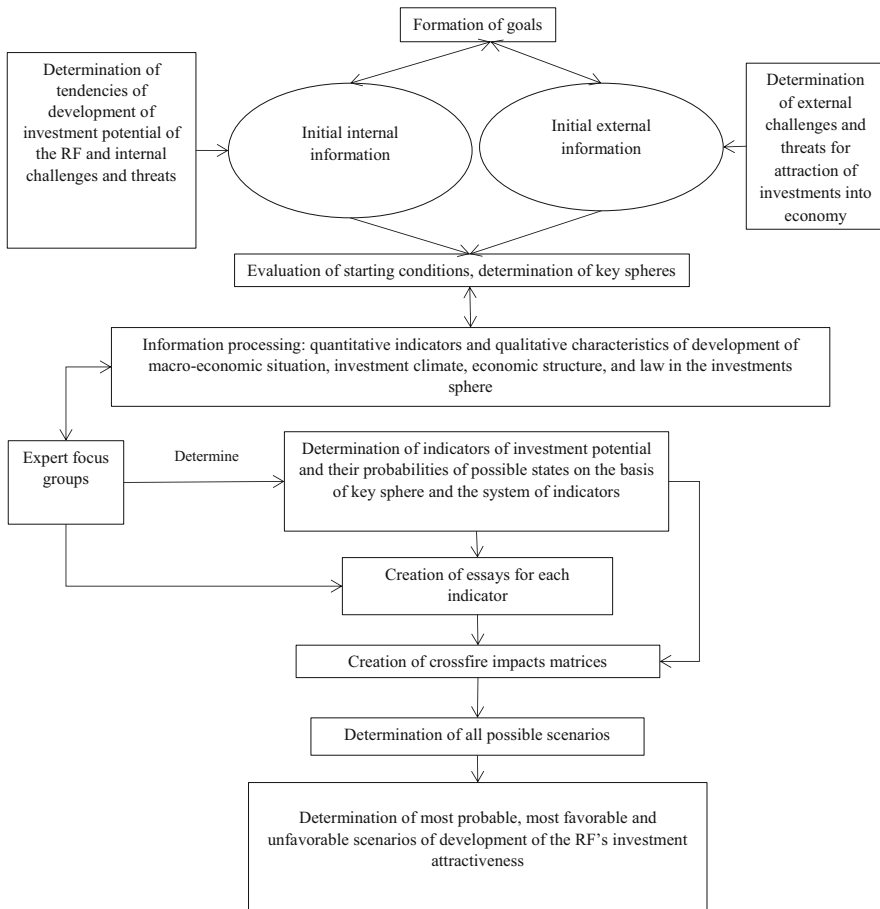


Fig. 2 Scheme of creation of forecast scenario for determination of scenarios of investment attractiveness of the RF

3 Results

Evaluation of effectiveness of application of Foresight study for attraction of investments into Russia’s economy is performed in several stages—the algorithm of evaluation is given in Fig. 3.

This figure allows determining sequence of actions during evaluation of effectiveness of Foresight project and in case of receipt of incorrect results of evaluation—determining which mistakes at which stages were made and correcting them. Mathematical model of Foresight evaluation will have the following form:

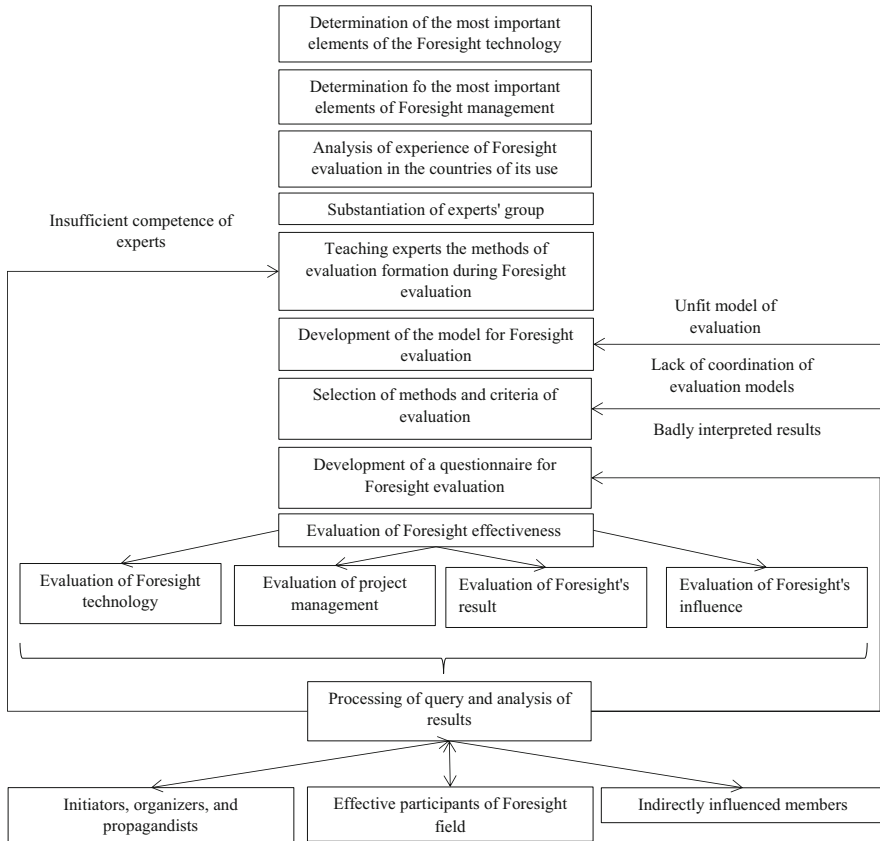


Fig. 3 Algorithm of evaluation of Foresight project effectiveness for attracting investments into economy of the RF

$$E_{for} = f(t1, t2, t3, t4, t5, t6, t7, m1, m2, m3, m4, m5, p1, p2, p3, p4, p5, I1, I2, I3, I4) \tag{5}$$

where E_f is the effectiveness of Foresight. It consists of four main factors that influence the effectiveness of the project: technologies used during conduct of the Foresight, project management, results, and influence of the Foresight. Each element of evaluation includes several variables—they are described in detail in Table 3.

Evaluation is performed with the help of the expert evaluation method with attraction of a range of other methods (SMART, BSC). For the evaluation of these elements of Foresight, a questionnaire in which each question is aimed for evaluation of the selected elements of the Foresight project was developed (Verkhoturova 2017).

Table 3 Interpretation of variables of the model of Foresight evaluation

<i>Evaluation of Foresight technology</i>	
Evaluation of stakeholders' participation	
<i>t1</i>	Attraction of participants from key organizations
<i>t2</i>	Presence of representatives of key stakeholders
Evaluation of the applied methodology	
<i>t3</i>	Used methods of forecasting (Delphi, scenarios, road mapping)
<i>t4</i>	Used methods of analysis— <i>SWOT</i> , <i>STEPV</i> , etc.
<i>t5</i>	Used creative methods (brainstorm, mind maps, etc.)
<i>t6</i>	Used expert panels, symposiums, futures seminars
<i>t7</i>	Used argumentative methods (analysis of crossfire impacts)
<i>Evaluation of management of Foresight project</i>	
<i>m1</i>	Quality of goals management (rationality, accessibility, noncontradiction, clarity of goals)
<i>m2</i>	Management of communications for interaction between the project and customer and project team and experts (conflicts and their solution)
<i>m3</i>	Project team (competence of team members, interaction between members of the team, conflicts, and contradictions)
<i>m4</i>	Resources management (attraction of resources, sufficiency of resources, effectiveness of resources use)
<i>Evaluation of results of Foresight (product)</i>	
<i>p1</i>	Report
<i>p2</i>	Scenarios of development
<i>p3</i>	Road map of region's development
<i>p4</i>	Creation of expert data base
<i>p5</i>	Creation of technology data base
<i>Evaluation of Foresight influence</i>	
<i>I1</i>	Use of Foresight results in strategies
<i>I2</i>	New investment projects
<i>I3</i>	Increase of country's investment attractiveness for internal investors
<i>I4</i>	Increase of country's investment attractiveness for external investors

The issues are to determine expert opinion for each element of the Foresight project for groups of indicators.

The following scale is used for evaluation: 1 (bad), 2 (good), and 3 (perfect). The final evaluation is calculated as follows:

$$E = \sum_1^n \frac{x_{ij}}{n}; n = 1, 2 \dots \quad (6)$$

where E is the average evaluation of the project for the analyzed indicators, i is the no. of indicators, and j is the indicator's group. If $I \geq 2$, the project is satisfactory; if $I < 2$, the project is not satisfactory.

Conduct of a Foresight project could be expressed in the form of the algorithm (Fig. 4).

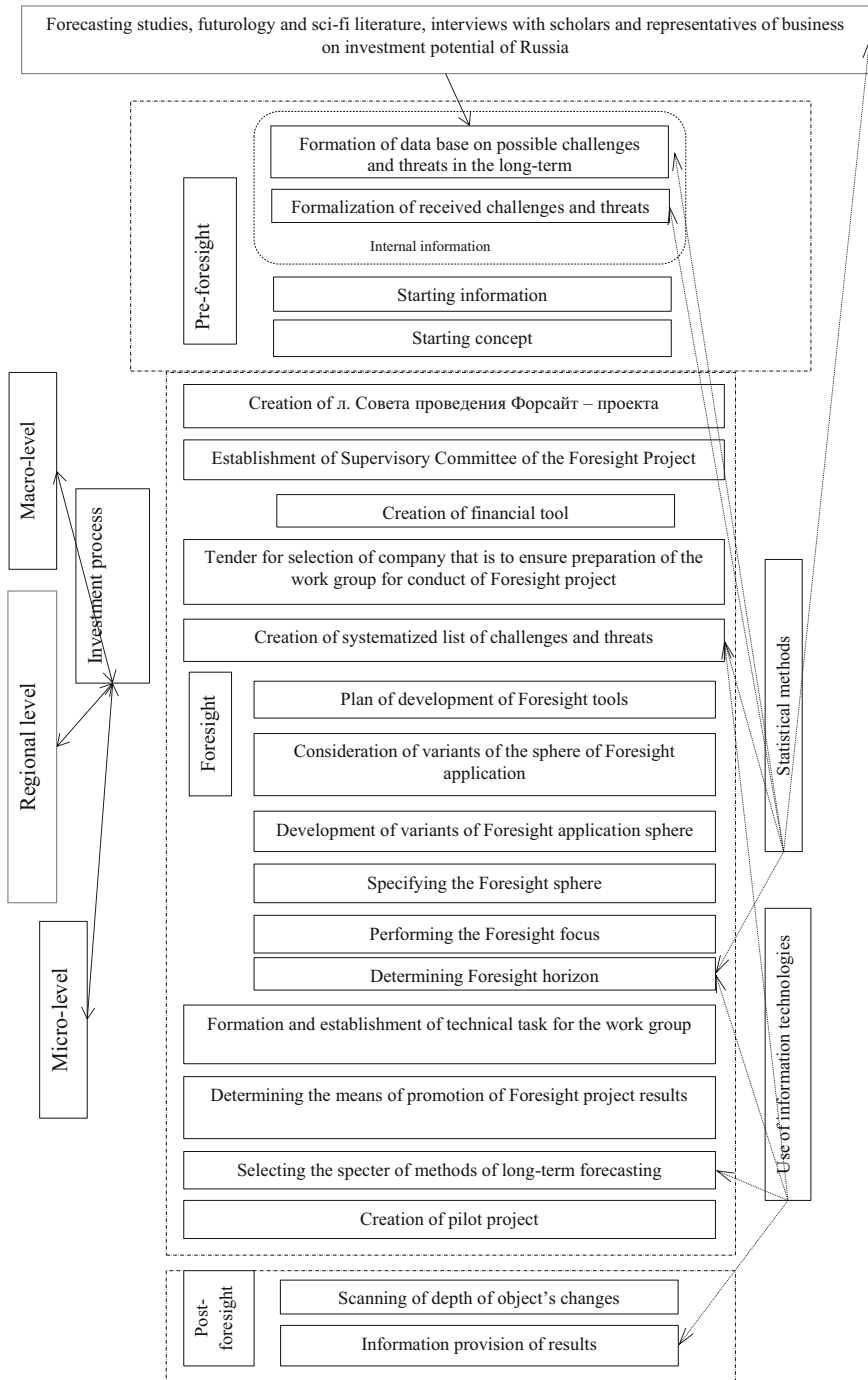


Fig. 4 Algorithm of conduct of Foresight research for attraction of investments into the Russian economy

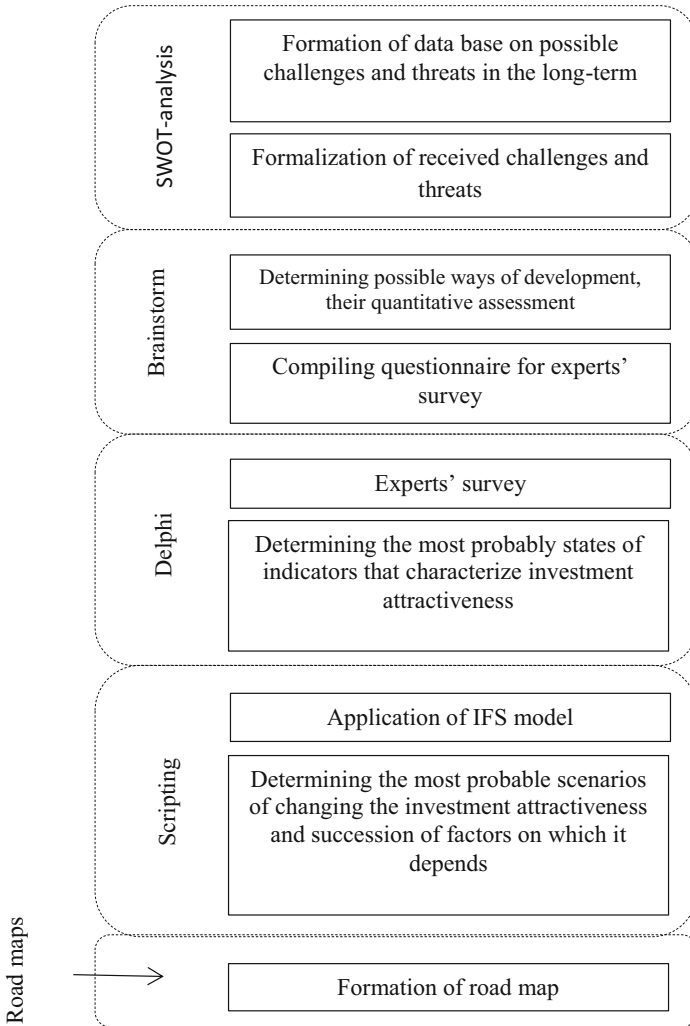


Fig. 5 Scheme of stage-by-stage application of specific tools of Foresight

Certain elements of the algorithm require deciphering. Figure 5 shows the scheme that describes application of specific tools of Foresight at certain stages of its conduct.

Assessment of the results of conduct of Foresight study, aimed at attraction of investments into Russian economy, is performed with the use of various methods. These methods could be presented in the form of the scheme in which, apart from the evaluation methods, the previously applied tools are stated.

4 Conclusion

In the process of Foresight research, statistical and specific methods are used, as well as information technologies. Information technologies and statistical methods are used at the stages of collection, qualitative presentation, and processing of information, and specific methods are used during conduct of Foresight.

At the stage of pre-Foresight, it is expedient to use SWOT analysis for determining main challenges and threats and their formalization. For the determination of possible ways of development of investment activities in Russia, determination of main indicators for its study, and compilation of the experts' questionnaire, the brainstorm method is used. The survey, analysis of its results, and determination of the most probably states of the indicators characterizing investment attractiveness are performed with the help of the Delphi method. Then, with the help of scripting method with the use of the IFS model, probable scenarios of development of investment activities are determined. The result of the Foresight is compilation of the road map.

Acknowledgments The article was prepared with financial support from G.V. Plekhanov Russian University of Economics.

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Problems of Implementing Strategic Managerial Accounting in Nonprofit Organizations

Larisa V. Egorova and Roman A. Khalturin

Abstract The article substantiates the necessity for implementing into the practice of nonprofit organizations the strategic managerial accounting for the purpose of improvement of results of their activities. Nonprofit nature of organizations of the third sector of economy, to which nonprofit organizations belong, cannot be an obstacle for implementing the management strategies. On the contrary, in the conditions of limited financing, search for sources of financing, consequences of economic crisis, and sanction policy, there arises a necessity for building the goals and tasks of nonprofit organizations and development of a wise strategy of management, its realization and correction in case of necessity. As strategic management has to expand the horizons of forecasting and create a possibility for timely reaction of organization to changes that take place in its external environment, it has to be implemented into the practice of work of nonprofit organizations (hereinafter, NPO)—especially actively for achievement of the set socially important goals. Besides, the article reflects the author’s stage-by-stage model of NPO economy and the concept of strategic managerial accounting for them.

1 Introduction

This necessity appeared in 1990s in the course of political and economic transformations, the result of which was transition from planned economy with centralized strategic management of the whole spheres of production to market economy in which economic subjects received full independence. This necessity became stronger with financial crisis of 2009, its second wave of 2014, and economic sanctions against Russia in 2015—which requires reconsideration of the process of management by various resources of economic subjects.

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Strategic management should expand horizons of forecasting and create a possibility of organization's timely reaction to changes that take place in its external environment. However, it should be noted that while as to strategic management and accompanying strategic managerial accounting, commercial enterprises have foreign and domestic developments; it is a whole new direction for NPO. The study showed that domestic economists do not pay enough attention to the issues of potential possibility and necessity for creation of the concept of strategic managerial accounting for NPO. Only B. Ryan wrote about benefit of such accounting for organizations that do not seek the aim of getting profit (Zabelin and Moiseeva 2010). Thus, the authors performed the work on development of concepts of strategic managerial accounting for Russian NPO, which are often called the third sector of Russian economy.

2 Materials and Methods

The article is based on normative and legal acts that regulate activities of NPO in Russia and organization of financial accounting in them. Besides, the works of Russian and foreign authors were used during preparation of the article.

Going from particulars to generals and vice versa (methods of induction and deduction), the authors determined general and specific features of economy and strategic management in NPO. Economic and mathematical model of institutional and cost-related parameters of assets and special-purpose capital of NPO at each moment of astronomic time or for each interval of this time allowed building their functional dependence. The used materials, means, and methods allowed making the results of the research authentic.

3 Results

The results of the performed research included main principles of strategic management formulated for NPO, developed stage model of economy for the third sector of economy, and the offered concept of strategic accounting for them.

The authors' developments will allow making socially important activities of NPO more effective and transparent—which is very important in the conditions of limited financing. Implementing strategic management will allow managers of NPO making wise and effective decisions, and application of strategic managerial accounting will allow reacting to changes of volumes and terms of financing, determining “narrow spots” during realization of programs, and using various resources effectively.

4 Discussion

4.1 Definition of Strategic Management

According to V.E. Kerimov—which is fully supported by the authors—to refuse from strategic management is to put the very existence of organization at risk, take the possibility to forecast and build plans from it, and doom for short-term or belated decisions (Korotkov 2013). Information basis of strategic management is strategic accounting which registers, generalizes, and provides data necessary for making strategic managerial decisions by managers of economic subjects. As is known, management, depending on the goal sought, is subdivided into operative, tactical, and strategic. The approach to the science of management consists in making the used definitions more constructive—for them to become a tool that will allow solving the tasks of real management of various NPO.

According to the authors, strategy of NPO should include (1) mission, (2) long-term goals that determine its activities (strategic goals), (3) resources that will be used for completion of the mission and achievement of strategic goals; and (4) system of management that ensures completion of the mission and achievement of strategic goals, including people (volunteers and employees) as main components of the system of management.

Specialists in the sphere of management do not always define the main stages of the technology of preparation, making, and realization of strategic decisions equally. Thus, P.V. Zabelin and N.K. Moiseeva give the main stages of managerial cycle (which is good for NPO) in the following succession (Fig. 1) (Kerimov 2011).

The authors prefer the E.M. Korotkov’s position, as it covers the cycle of realization of NPO program more fully. However, this scheme should include another element “correction” that will allow taking into account specifics of their activities in the conditions of limited financing and various resources, as well as constant changes in this sphere.

In his turn, E.M. Korotkov gives the main stages of the process of strategic management in the following succession—which could be also used in nonprofit organizations (Fig. 2).

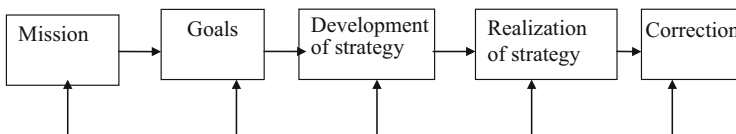


Fig. 1 Main stages of managerial cycle



Fig. 2 Main stages of the process of strategic management

4.2 Principles of Strategic Management

Any strategic idea that comes from a manager should be professionally processed and transformed into strategic decision—and then become a guide to action of its realization by managers and staff of the organization. Thus, attention should be paid to main principles of strategic management formulated for nonprofit organizations by L.V. Egorova:

- (1) Principle of analytical forecasting and development of strategy
- (2) Principle of accounting and coordination of external and internal factors of development
- (3) Principle of correspondence of the strategy and tactics of organization's management
- (4) Principle of priority of human factor
- (5) Principle of organization's strategy's correspondence to existing resources
- (6) Principle of certainty of strategy and organization's strategic accounting and control

Strategic accounting of targeted financing in NPO is a necessary element of strategic management. Importance of full and authentic accounting of targeted revenues and expenses of organization cannot be overestimated, as it is on the basis of these data that the organization's management makes strategically important managerial decisions (Egorova 2008).

4.3 Offered Phase Model of Economy for NPO

Based on the above principles (Sect. 4.2)—in particular, on the sixth—we offer a phase model of economy for NPO and the concept of strategic accounting for them, developed by Egorova (2008).

Obviously, managing such economy could be brought down to mutual merging of these forms. The model shows the forms that are an object of strategic management of NPO and, accordingly, the object of strategic accounting (Fig. 3).

The first part of the model reflects financial complex of organization: assets (A), targeted capital (TC), targeted revenues (TR) and targeted expenditures (TE), and their difference—"profit" (P). In this context, the notion of "profit" is put in quotations, as periodical excess of targeted revenues over expenditures is not profit according to chapter "Institutional Ambiguity of Regulation of Possessory Relations in Modern Russia" of the Tax Code of the RF. Such difference has timely character due to specifics of performed programs and their long-term nature, i.e., excess of revenues over expenditures in one studied period could be followed by the reverse ratio in another studied period. If NPO conducts entrepreneurial activities, in this case the notion "profit" will have traditional character—but it will be directed in full for financing of statutory (nonprofit) activities.

Phase	Contents of phase
I	$[A = "P" + TC]$ $\{ "P" = TR - TE$
	$[\Delta t \rightarrow 0; \Delta t = \text{const}]$
II	
III	$PWP:1 \rightarrow PWP:2 \rightarrow \dots \rightarrow PWP:k \rightarrow \dots \rightarrow PWP:n \quad \Pi\Phi O$ $EWP:1 \rightarrow EWP:2 \rightarrow \dots \rightarrow EWP:k \rightarrow \dots \rightarrow EWP:n \quad EPO$
IV	$Y_{a,s} \rightarrow C$, development of NPO is conducted under management of relative dynamic and statistical laws of development through information of accounting system of NPO
The symbols in the table are explained below	

Fig. 3 Phase model of economy of nonprofit organization

Institutional and cost parameters of assets, on the one hand, and targeted capital and liabilities of organization, on the other hand, are calculated for each moment of astronomic time ($\Delta t \rightarrow 0$) or for each interval of this time ($\Delta t = \text{const}$). Thus, there is a balance between them. Revenues, expenditures, and “profit” of nonprofit organization are a result of its functioning in each specific interval ($\Delta t = \text{const}$), i.e.,

$$\begin{aligned} \text{TR} &= f(A, t), \\ \text{TE} &= f("P", t) + f(\text{TC}, t), \end{aligned}$$

where f —function calculated with econometric method and reflecting dependence of the volume of “profit” and targeted capital from time interval (studied period).

These equations are given for each specific moment of time ($\Delta t \rightarrow 0$).

The second part of the model is the model of environment of phase processes that shows that this environment has a complex character—i.e., there are two types of environment of phase processes of nonprofit organization: program phase environment (separate for each specific program) and exploitation phase environment. Processes of phase environment of the first type are related to provision of services and performance of works of nonprofit organization. The processes of second type are related to exploitation of organization’s economy.

Symbols and letters of the model of program phase processes (PPP) stand for the following:

PVV—phase volume of values, i.e., resource volume, attracted by organization for supporting the process of each phase of the conducted program. This volume is created by capital phase volume of values (CPVV), program phase volume of values (PPVV), and labor phase resource volume (LPV).

PSW—phase service, work performed for consumer.

TR—volume of targeted financial assets received by NPO for completion of a specific program or received from realization of phase services or works (if there are entrepreneurial activities).

PCSW—phase cost of phase services and works of NPO.

PPOD—phase potential of organization’s development is the volume of money equal to profit received by organization from realization of phase services and works (PSW) with entrepreneurial activities or volume of financial assets received for conduct of a specific phase of the targeted program without entrepreneurial activities with NPO.

PFOOD—phase funds of organization’s development are formed by means of assets of phase potential of organization’s development (PPOD) and include funds of tax payment, formed fund of values (FFV), reserve funds, etc.

The given model shows that the program phase process has a cyclic character. Symbols and letters of the model of exploitation phase processes (EPP) stand for the following:

FD—fund of development of NPO.

PRV—phase resource volume of material values, i.e., resource volume attracted by nonprofit organization for the purposes of supporting the process of each phase of its exploitation of environment. This volume is created by exploitation phase resource volume (ER), operative resource volume (OR), and phase volume of work of personnel, public, and volunteers of the organization (TP)

PC—organizational and technical process of creation of exploitation phase object of NPO.

EPO—ready exploitation phase object of NPO.

PF—phase functioning of exploitation of NPO's phase object that includes putting into operation or mobilization this object, its exploitation (*E*), i.e., use for supporting the processes of phase of program phase environment of organization, shutdown, or demobilization (*D*).

APF—process of formation of amortization phase fund of NPO.

EPF—exploitation phase fund of NPO that is created as a result of realization of each phase service and work as a sum of corresponding parts of phase potential of organization (PPO) that emerges in each program phase of the whole phase environment of such phases. This fund is used for formation of phase fund (PF) of exploitation phase that follows this one, in all sequence of such phases of exploitation of organization's phase environment. This model shows cyclic character of phase process exploitation.

Phase processes of the second types are related to phase construction of each capital object of organization.

4.4 *Systems of NPO Economy*

In the most abstract form, NPO economy could be presented as a system of simple operations—i.e., as a system of the simplest actions, each of which seeks a certain goal. In this case, each operation requires a certain set of material and labor resources with the help of which it is realized. At that, labor resources are peculiar for certain legal relations, i.e., relations of rights and liabilities, accepted for each employee, public person, and volunteer of organization—all of these make NPO economy a system—the elements of which are work places. Economic (social) operations of organization take place at the elements of this system. Thus, NPO economy is a system of workplaces at each of which one simple operation takes place that is necessary for supporting each phase of organization of the whole environment of such phases. The whole system of economy of nonprofit organization is created by two systems of work places:

- (1) System of program jobs that are effective in each program phase of organization and are related to provision of services and performance of organization's works.

- (2) System of exploitation jobs that are effective in each exploitation phase of organization and are related to provision of organization’s functioning. Jobs of each system create chains of jobs, specialized and successive functioning of which ensures a possibility of achievement of these systems’ goals.

In the viewed group, model of PPO reflects the general model of program contour of organization (PWP_т—program workplaces of the system of organization’s economy); EPO reflects the general model of exploitation of organization’s contour (EWP_т—exploitation workplaces of the system of exploitation economy of organization); arrows of the formulae reflect the direction of deployment of sequences of program or exploitation operations of organization for workplaces of the corresponding contour. This sequence determines in the system of economy of nonprofit organization its program contour for each operative or capital phase. Its general model has the following form:

$$PWP: 1 \rightarrow PWP: 2 \rightarrow \dots \rightarrow PWP: k \rightarrow \dots \rightarrow PWP: n.$$

The model of contour’s exploitation has the following form:

$$EWP: 1 \rightarrow EWP: 2 \rightarrow \dots \rightarrow EWP: r \rightarrow \dots \rightarrow EWP: m.$$

In the given model, the symbol $M_{a,s}$ reflects the fact that development of nonprofit organization is done under the relatively dynamic and statistical laws of its development; AS—this management is realized through information of accounting system of nonprofit organization.

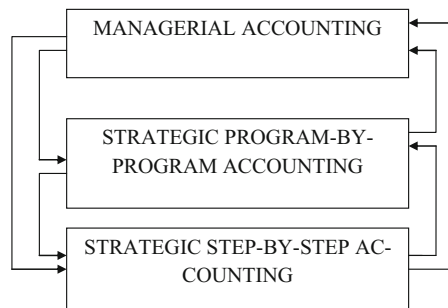
Based on the given model and using the principle of dynamic balance of NPO, let us build the concept of strategic accounting (Fig. 4).

According to the phase model of NPO, its strategic accounting is a part of managerial accounting and is subdivided into two subsystems: system of strategic program-by-program accounting and system of strategic stage-by-stage accounting.

It should be concluded that the whole system of program-by-program strategic accounting of NPO is created by the complex that consists of two accounting subsystems:

- (1) Accounting subsystem that forms data on program phase environment of organization
- (2) Accounting subsystem that forms data on “capital” phase environment and each its phase

Fig. 4 Model of the concept of NPO strategic accounting



Accounting subsystem of the first type could be called the system of strategic program-by-program accounting of statutory activities of organization and the system of the second type—the system of strategic program-by-program accounting of organization's development. Operations fulfilled within each phase are reflected by corresponding accounting entries.

5 Conclusions

It should be noted that development within strategic managerial accounting of each phase of separate realized program of NPO is a rather time-consuming process. In view of the factor of a large number of socially important programs that are realized by NPO, it is possible to suggest that conduct of strategic managerial accounting will require additional employee.

However, labor intensity in development and implementation of strategic managerial accounting in NPO will be leveled out by information provided to managers for management and by the possibility of more rational use of various resources that will finally lead to increase of social effectiveness and significance of the third sector of economy.

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Ways of Increasing Innovative Activity in the Agrarian Sphere as a Basis of Food Security

Larisa V. Popova, Natalya N. Balashova, Tatiana A. Dugina,
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Abstract The purpose of the article is the substantiation of the approach to provision of the national food security, which supposes considering its basis as innovational activity in the agrarian sphere by the example of modern Russia. In order to study the connection between innovative activity in the agrarian sphere and the national food security of Russia, the work uses the method of regression and correlation analysis, with the help of which, the dependence of the Global Food Security Index on the offered indicator of innovative activity in the agrarian sphere is found. During determination of the key factors of innovative activity in the agrarian sphere, the authors use the method of factor analysis, for which the proprietary economic and mathematical model is used. The authors determine the presence, character, and strength of connection of the national food security and innovational activity in the agrarian sphere, determine its key factors, and develop a complex of measures for management of economic security of agro-industrial complex in the interests of provision of the national food security of Russia.

JEL Codes G31 • F52 • Q18

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1 Introduction

Topicality of the study of the problem of national food security consists in the fact that the food sphere is a basis for functioning of any economy, as it satisfies basic needs of population—without which a state cannot exist. In modern Russia, the state, in the process of provision of the national food security, found its strategy on limiting the import of food products, paying little attention to the issues of regulation of the agrarian sphere of the national economy.

Taking into account that the level of food security of the Russian economy has been gradually reducing, achieving the critically low level (the internal demand for food products is satisfied by domestic manufacturers by less than half), this work offers a hypothesis that the approach to provision of food security that is applied in Russia is ineffective. The purpose of the article is to verify this hypothesis and to substantiate the new approach that supposes consideration of the innovative activity in the agrarian sphere as a basis of the national food security by the example of modern Russia.

2 Materials and Method

Innovative activity in the agrarian sphere is its capability to develop human resources (Reznichenko et al. 2016) and to modernize production technologies and equipment (Gridchina et al. 2016) for highly effective satisfaction of internal demand for food products (Popova et al. 2015a, b), as well as to compete internationally and to develop in the long-term (Popova et al. 2015a, b, 2016a, b).

The national food security is the economic system's independence from external factors of development of the agrarian sphere, which include factors of food production (Kuzmin 2016) and ready food products (Mutenje et al. 2016). In other words, food security of the country supposes its capability to independent satisfaction of the internal demand of domestic manufacturers for food (Popkova et al. 2015a) and food companies—for everything that is necessary for their functioning and development (Popkova et al. 2015b; Schroeder and Meyers 2016).

To study the connection between innovative activity in the agrarian sphere and the national food security of Russia, this work uses the method of regression and correlation analysis, with the help of which, the dependence of the Global Food Security Index (GFSI)— y —on the indicator of innovative activity in the agrarian sphere ($IA_{AIS} - x$) is found.

During determination of the key factors of innovative activity in the agrarian sphere, the authors of this article use the method of factor analysis. For this, the proprietary economic and mathematical model is used, which has the following formula form:

Table 1 Statistical and estimate data that reflect the dynamics of innovative activity in the agrarian sphere and economic security of Russia in 2009–2014

Indicators	Values of indicators according to years								
	2012	2013	Δ	2014	Δ	2015	Δ	2016	Δ
IA _{AIS}	–	–	1.81	–	0.84	–	0.97	–	1.01
ΔGS _{AIS}	4.3	4.4	1.02	4.3	0.98	4.21	0.98	4.26	1.01
ΔVE _{AIS}	16,908.0	29,974.3	1.77	25,864.4	0.86	25,687.1	0.99	25,758.3	1.00
GFSI	66.7	65.6	–	62.8	–	61.5	–	62.3	–

Source: Rosstat (2017), The Global Food Security Index (2017)

$$IA_{AIS(t)} = \left| \frac{\Delta GS_{AIS(t)}}{\Delta GS_{AIS(t-1)}} \right|^* \left| \frac{\Delta VE_{AIS(t)}}{\Delta VE_{AIS(t-1)}} \right| \tag{1}$$

where IA_{AIS} is the indicator of innovative activity in the agrarian sphere; ΔGS_{AIS} is the growth of share of the agrarian sphere’s companies that perform innovational activity, as compared to the previous year; ΔVE_{AIS} is the growth of the volume of expenses of the agrarian sphere’s companies for innovations, as compared to the previous year; and *t* is the time period.

The initial data for analysis are shown in Table 1.

3 Results

Based on the data of Table 1, we received the following model of paired linear regression: $y = 3.67 + 5.87x$. It shows that with increase of the value of the indicator of innovative activity in the agrarian sphere by 0.01, the value of the Global Food Security Index grows by 5.87 points. The correlation coefficient equals 82.71%. This proves the existence of a strong and direct dependence between the studied indicators.

The results of factor analysis showed that the share of enterprises of the agrarian sphere that conduct innovational activity (organizational and managerial indicator) and the volume of expenses of the agrarian sphere’s companies for innovations (financial indicator) are the key factors of innovative activity in the agrarian sphere, and their negative dynamics in the recent years leads to reduction of this activity.

The causes of low share of the agrarian sphere’s companies that perform innovational activity and of the volume of expenses of the agrarian sphere’s companies for innovations are the following—in the organizational and managerial sphere:

- Weak influence of market stimuli due to long-term realization of the protectionism policy predetermines lack of objective necessity for implementation of innovations in the agrarian sphere

- Impossibility for own innovational research and difficult access to the results of the leading scientific research due to weak connections with the scientific sphere

In the financial sphere:

- Small volume of business of the main market players predetermines their limited financial resources.
- Small return of investments (small value of the ROI indicator—return on investment) predetermines low investment attractiveness of innovative and investment projects in the agrarian sphere.

The perspective measures for managing the innovative activity in the agrarian sphere in the interests of provision of the national food security of Russia are the following. Firstly, it is necessary to gradually reduce the share of state regulation in the agrarian sphere for planned creation of a healthy competitive environment. This will start full-scale market mechanism which will naturally stimulate innovational activity of the agrarian sphere's companies.

Secondly, state support for creation of economic clusters in the agrarian sphere is expedient. On the one hand, it will allow establishing closer connection between the agrarian sphere's companies and R&D organizations within a cluster. On the other hand, this will expand own capabilities of the agrarian sphere's companies. Due to the unification of efforts and resources, they will be able to conduct their own scientific research and development and will possess the required financial assets.

Thirdly, for increase of investment attractiveness of innovational projects in the agrarian sphere, it is necessary to give private investors additional advantages, apart from investments return. Such advantages may include tax preferences, as well as support for strengthening of the corporate brand through inclusion of such investors into the state lists of corporate responsible business, etc.

The offered complex of measures on management of innovative activity in the agrarian sphere in the interests of provision of the national food security of Russia is presented graphically in Fig. 1.

4 Conclusion

Thus, the results of the performed research provided strong scientific proofs of the offered hypothesis in favor of the fact that the Russian approach to provision of food security, which supposes state paternalism of the agrarian sphere, is ineffective and there's a need for a new approach based on action of the market mechanism that stimulates increase of its innovative activity.

The conceptual value of the obtained results is explained by their contribution into development of the fundamental provisions of modern theory of the national food security, theory of innovations, and theory of state regulation of economy. Practical significance of the work consists in the applied character of the offered authors' recommendations and their readiness for application in the state policy of



Fig. 1 A complex of measures for management of innovative activity in the agrarian sphere in the interests of provision of the national food security of Russia

modern Russia in the sphere of managing the innovative activity in the agrarian sphere in the interests of provision of the national food security.

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Bank Deposits from the Position of Attractiveness for Investments by Individuals

Sergey V. Rykov

Abstract Recently, the banks have been performing manipulations with increase or decrease of deposit interest rates, thus trying to maneuver risks in the sphere of the monetary policy. Deposit products of financial and credit organizations are rather popular among the population—especially among those who want to preserve and increase their savings. Still, due to interest rates' decrease, individuals are faced with a difficult task to select a bank that offers the best terms for deposits. Each bank offers its own special terms for deposits; some offer new types of deposits with special bonuses for such operation. In case of excess of liabilities, banks try to avoid risks or bring them down to the minimum by reducing deposit interest rates—for demand for credits from potential borrowers decreases.

The article views and studies financial and credit organizations and their deposit offers, with terms of opening and closing accounts that they offer for individuals. Attractiveness of deposits from the position of investing assets by potential customers is evaluated according to the criteria of interest rates, terms, minimal deposits, insurance, bonus systems, etc.

JEL Codes G20 • G21 • E40

1 Introduction

In the market of deposit products and services, a lot of banks try to attract money assets with the help of application of a flexible and expanded system of interest rates and others by means of more profitable conditions of deposits, orienting at the state of affairs in the credit system, in which the main role belongs to the Central Bank, which operate the key interest rate. At the end of 2016, some financial and credit institutes began reducing deposit interest rates, thus decreasing the interest of their customers. The reason for this decision consisted in the fact that there are a lot of

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_49

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money assets in the banking system, and credit resources are not that popular—thus, the liabilities are larger than the assets. Also, there was a gradual transition from deficit of liquidity to structural profit—i.e., credit organizations have a lot of free money assets that are not used. Buying expensive liabilities from individuals under such conditions is to increase own banking risks.

Due to the structural crisis, the number of potential consumers of borrowed assets reduced, and financial and credit institutes cannot cover expenses for such liabilities, as there is no demand for credit resources.

2 Materials and Methods

2.1 Methodology of the Research

In order to evaluate attractiveness of deposits for population, let us use the methods of statistical comparison and analytical approach. The largest banks that offer a lot of deposits with individual terms and special offers are selected. Each of them presents a certain set of deposit services—let us view every one of them from the position of purchasing ability.

In December 2016, Sberbank PJSC reduced interest rates for deposits. It should be noted that interest rates had been also reduced in 2015. The data on the deposits with interest capitalization are presented in Table 1.

The deposit “preserve” is a deposit of reliable preservation of population’s money and receipt of guaranteed stable income. The deposit term is 1 month–3 years, with no replenishment and no partial withdrawal. This deposit differs from other deposits offered by Sberbank PJSC and other financial and credit organizations by its opening starting from RUB 1000 and its short-time character; this deposit is very convenient if it is necessary to preserve and increase savings over a shorter period of time. The interest rate is lower than that of the deposits of other viewed banks, constituting 4.6%. Still, the larger the deposit, the larger the interest rate. The most attractive terms are offered with the deposit for 6–12 months in an amount above RUB 1,000,000, with the interest rate of 6.13–6.49%.

The deposit “replenish” is for individuals who prefer to accumulate their assets in a reliable bank. The deposit term is 3 months–3 years, with replenishment, but without partial withdrawal. The initial amount of the deposit constitutes RUB 1000 рублей, which is rather attractive for wide groups of population with low-income level. The interest rate is rather low, from –5.22 to –5.96%. In our opinion, the optimal condition for investments is opening a deposit for 1–2 years, in an amount from RUB 100,000, with the interest rate of 5.64% (Matovnikov 2014).

The deposit “manage” is peculiar for the customers who strive for preservation of their savings and the possibility to withdraw a part of their assets without losing the interest before the end of the deposit. This type of the deposit is available for individuals for the term 3 months–3 years, with partial withdrawal and

Table 1 Interest rates for term deposits in RUB in Sberbank PJSC, as of December 2016 (%)

<i>Deposit preserve</i>							
Term and amount of deposit	1–2 months	2–3 months	3–6 months	6–12 months	1–2 years	2–3 years	3 years
1000–100,000	4.60	5.01	5.47	5.97	5.90	5.86	5.85
100,000–400,000	4.75	5.16	5.63	6.13	6.06	6.02	6.02
400,000–700,000	4.90	5.31	5.78	6.28	6.22	6.19	6.20
700,000–2,000,000	5.10	5.51	5.98	6.49	6.43	6.41	6.44
From 2,000,000	5.10	5.51	5.98	6.49	6.43	6.41	6.44
<i>Deposit replenish</i>							
Term and amount of deposit	3–6 months	6–12 months	1–2 years	2–3 years	3 years		
From 1000	5.22	5.72	5.48	5.51	5.38		
From 100,000	5.37	5.87	5.64	5.58	5.56		
From 400,000	5.53	6.02	5.80	5.74	5.73		
From 700,000	5.73	6.23	6.01	5.97	5.96		
From 2,000,000	5.73	6.23	6.01	5.97	5.96		
<i>Deposit manage</i>							
Term and amount of deposit	3–6 months	6–12 months	1–2 years	2–3 years	3 years		
From 30,000	4.87	5.26	4.70	4.54	4.35		
From 100,000	5.02	5.41	4.85	4.70	4.52		
From 400,000	5.17	5.56	5.01	4.86	4.69		
From 700,000	5.37	5.77	5.22	5.08	4.92		
From 2,000,000	5.37	5.77	5.22	5.08	4.92		

replenishment. The minimal amount constitutes RUB 30,000. The money can be withdrawn monthly or trimonthly. The interest rate varies from 4.87 to 4.92%, which is lower than that with the viewed deposits of this bank. The most profitable terms of the deposit is the one in the amount above RUB 400,000 for 6–12 months, with the interest rate of 5.56% per annum.

All the above deposits are insured, as Sberbank PJSC is a participant of the system of mandatory insurance of deposits, register No. 417. There are online services for deposits, with interest rates higher by 0.50%. It could be noted that Sberbank PJSC has bonuses for the retired—maximal interest rate regardless of the deposit amount.

2.2 Comparative Analysis

After studying various deposits of Sberbank PJSC with their pros and cons, the next stage is evaluation and comparison to other deposits of the credit organizations VTB 24 PJSC and BINBANK PJSC and selection of the most optimal variants from the position of investing assets by individuals.

Table 2 Interest rates on term deposits in RUB in VTB 24 PJSC as of December 2016 (%)

<i>Deposit profitable</i>						
Term and amount of deposit	From 91 days	From 181 days	From 395 days	From 546 days	From 732 days	From 1102 days
From 200,000	7.09	6.90	6.66	6.04	5.91	0.01
From 700,000	7.34	7.15	6.93	6.42	6.30	0.01
From 1,500,000	7.75	7.57	7.73	7.25	7.09	0.01
<i>Deposit cumulative</i>						
Term and amount of deposit	From 91 days	From 181 days	From 395 days	From 546 days	From 732 days	From 1102 days
From 200,000	5.88	6.18	5.97	5.40	5.25	0.01
From 700,000	6.38	6.69	6.34	5.72	5.52	0.01
From 1,500,000	7.09	7.31	6.66	5.88	5.75	0.01
<i>Deposit comfortable</i>						
Term and amount of deposit	From 181 days	From 395 days	From 546 days	From 732 days	From 1102 days	
From 200,000	4.39	4.39	4.38	4.37	0.01	
From 700,000	5.56	5.02	4.65	4.59	0.01	
From 1,500,000	5.67	5.55	5.23	5.03	0.01	

VTB 24 PJSC offers its own list of deposits, orienting the needs of individuals, depending on the category of population and their interests. Let us view the forms of deposits offered to the population, in view of interest capitalization, as of December 2016 (Table 2).

Deposit “profitable” is convenient for the individuals who want to save their assets in a reliable credit organization and receive income after the end of the deposit agreement. This type of deposit is characterized by high interest rates, –7.09 to 7.73% per annum, as compared to the deposits of VTB 24 PJSC. The initial sum of the deposit constitutes RUB 200,000, with the duration of 91 days, with no replenishment and withdrawal. It could be prolonged automatically with the current interest rates. The prolongation rates—of the moment of prolongation is after September 24, 2016—constitutes RUB 100,000 and more with the interest rate of 0.10% per annum regardless of the number of days. The interest could be added to the deposit or transferred to another account, in which case the income for the deposit will be slightly lower. We think that the best terms are those of the deposit of RUB 700,000 for more than 181 days (Parfenov 2008).

Deposit “cumulative” has interest rates of 5.88–7.31% per annum. The terms start from 91 days, with the minimal deposit of RUB 200,000.

This is a deposit similar to the deposit “replenish” in Sberbank PJSC. Its advantage is higher interest rate, but its disadvantage is the volume of the minimal sum of the deposit, which is rather high for people with low income. A peculiarity of the studied type is a possibility of replenishment from RUB 30,000, with the interest rate growing with replenishment of the deposit. Automatic prolongation of the deposit is possible—but only twice. The deposit does not suppose debit operations, and with a pre-schedule closure of the deposit, the interest is paid according

to the demand rate of 0.01% per annum. As with the deposit “profitable,” the interest could be added to the deposit or transferred to the account. We think that the best option is to invest the assets above RUB 700,000 for more than 181 days with the interest rate of 6.69% per annum.

Deposit “comfortable” has interest rates that are low—from 4.39 to 5.67% per annum, 181 days minimum, with the minimal amount of the deposit of RUB 200,000. There’s a possibility to replenish the deposit with at least RUB 30,000; unlike the deposits “profitable” and “cumulative,” the deposit “comfortable” gives the customer access to assets on the deposit at any time, and withdrawals are possible with a minimum of RUB 15,000. Automatic prolongation of the deposit is possible twice a year, with pre-schedule closure featuring the interest rate on demand. The most attractive condition is investing the assets above RUB 700,000 for more than 181 days, with the interest rate of 5.56% per annum. As compared to the deposits “manage” of Sberbank PJSC, this type of deposit is inferior as to the amount of the initial sum of the deposit, the term, and the interest rates. The advantage is access to assets at any time.

All deposits in VTB 24 PJSC are insured according to the Federal Law “On insurance of deposits of individuals in the banks of the Russian Federation” No. 177-FZ dated December 23, 2003, with the register No. 680. All offered deposits could be opened through VTB24-Online, with the interest rates that are higher by 0.50%. There is a chance to become a participant of the “collection” program which offers additional bonuses with prolongation of the deposit or its decline (Tarasov 2011).

BINBANK PJSC allows individuals managing their savings—it provides a large specter of deposit services, including deposits with perspective terms of investing money, as well as the possibility to perform operations with customers’ accounts with maximal convenience. Let us analyze the types of deposits and their terms as of December 2016. The types and terms of the deposits, in view of interest capitalization, are given in Table 3.

Table 3 Interest rates for term deposits in RUB in BINBANK PJSC, as of December 2016 (%)

<i>Deposit monthly income</i>				
Term and amount of deposit	91 days	181 days	367 days	730 days
From 10,000 to 299,999	8.10	7.90	7.45	6.40
From 300,000 to 699,999	8.20	8	7.55	6.50
From 700,000 to 1,499,999	8.30	8.10	7.65	6.60
From 1,500,000	8.40	8.20	7.75	6.70
<i>Deposit magnificent seven</i>				
Term and amount of deposit	367 days			
From 10,000	6.70			
<i>Deposit maximum interest</i>				
Term and amount of deposit	91 days	181 days	367 days	730 days
From 10,000,000	9	9.25	9.50	8.70

Deposit “monthly income” is offered to individuals who want to preserve and increase their savings with a possibility of regular replenishment of the account. The viewed deposit can be opened with at least RUB 10,000, for 91 days and more and with the interest rates of up to 8.40% per annum. There’s a possibility to replenish the deposit with any amount. Unlike VTB24 PJSC, there’s a monthly capitalization of the interest or transfer to the customer’s account, with the amount being stable. There’s a possibility to automatically prolong the deposit, and with the pre-schedule closure, the interests are paid with the interest rate on demand of 0.001% per annum. There are certain bonuses—with the opening of the deposit online (additional 0.50% of interest in RUB) and of the customer is the retired (additional 0.15% per annum). Partial withdrawal of the deposit is not envisaged. In our opinion, the most profitable investment in this case is the amount of 10,000 for more than 181 days, with the interest rate of 7.90% per annum. As compared to the similar deposits of the previously analyzed banks, it is very attractive for individuals based on the volume of interest rates and low sum of deposit opening, which is accessible for many people (Uteshov 2006).

The deposit “magnificent seven” could be opened for more than a year (367 days), with the fixed interest rate of 6.70% per annum and with the minimal sum of the deposit of RUB 10,000. Its peculiarity is that capitalization of the interest and periodicity of payment of the interest are performed daily, with deposit payment at the end of the term, cash and noncash. As with the previous form, there’s an automatic prolongation (with the same term and conditions for the deposit), terms for pre-schedule closure, and the bonus system. No partial withdrawal.

The deposit “maximal interest” is peculiar for high initial amount of the deposit of RUB 10,000,000, the term of 91 days at least, and high interest rates of 9% per annum. This deposit is not accessible for many people due to high initial sum, but the advantage is high interest rate. The conditions are similar to the above deposits of BINBANK PJSC—there’s a system of bonuses, interest withdrawal in cash and noncash form, automatic prolongation, and no partial withdrawal. There is no replenishment, and the payment of interest is only at the end of the term of the deposit.

The viewed deposits of BINBNK PJSC are insured, as the bank is a participant of the mandatory insurance system, No. 17 in the register.

3 Results

Having studied deposits for individuals offered by the banks, we received the following results. Sberbank PJSC offers a wide specter of deposit products, so all categories of population can find the option that is best for them. In our opinion, the most attractive deposit is “preserve”—it is opened for at least 1 month, with the initial sum of RUB 1000. This type of deposit is peculiar for higher interest rates than with other types, -4.60 to 6.44% . The interest rates for deposits with this bank

are lower than with VTB24 PJSC—except for the similar deposit “manage” with BINBANK PJSC.

Having viewed the deposits of VTB24 PJSC, it is possible to conclude that the most attractive is the deposit “profitable”—due to high interest rates, as compared to other deposits of this bank and to the deposit services of Sberbank PJSC. The terms are similar to Sberbank PJSC, but it is necessary to note that VTB24 has a program of bonuses for customers for replenishment and prolongation of deposits. In this bank, the deposit “profitable” is very interesting, as it has optimal values of interest rates. A disadvantage is the initial amount of deposit of RUB 200,000, which can be inaccessible for certain categories of citizens with low income.

A for the deposits of BINBANK PJSC, their advantages are high interest rates and good terms of replenishment and withdrawal of interest, which makes this credit institute more attractive for savings and investing deposits—but during selection of the optimal option of investing assets, there may emerge a problem, for each of the offered types is rather narrow as to the conditions of deposits opening. In case with the deposit “magnificent seven,” the customer can be limited in the choice of the duration of the deposit, and in case with “maximum interest,” there is difficulty in the selection of the amount of the deposit that starts with RUB 10,000,000, which is a limitation for most people. In our opinion, the more acceptable deposit is “monthly income,” characterized by high interest rates, as well as flexibility and accessibility of selection of the initial amount and duration of the agreement.

4 Discussion

A matter of discussion is the tendency for reduction of interest rates for deposits; after Sberbank PJSC, these measures could be taken by other financial and credit organizations, for the purpose of reduction of risks of absence of demand for assets by banks—for credit resources have been unpopular among economic subjects and the population. If this tendency is preserved, the probability of growth of interest rates for deposits will be brought down to the minimum in 2017. In its turn, this provides new preconditions for study of further development of the Russian deposit market in crisis and post-crisis periods. Based on our research, attention should be paid to the fact that from the position of deposits’ attractiveness of investing assets by individuals, bank deposit services are rather perspective. Each of the presented credit organizations provides its own conditions for deposits. There are a lot of financial and credit organizations in the market of deposit products and services, and some of them conduct the policy of attraction of additional money assets—this means that these services will be further developed.

5 Conclusions

Under the difficult conditions of functioning, banks try to reduce the liabilities base on decreasing the interest rates for deposits—thus, they might cause indifference from the population, as many people open deposits in order to increase their savings, selecting a financial or credit institute that is a reliable place for preservation and increase of money. Having performed analysis and evaluation of deposit services and products, we think that each individual has the option to find a place where they could invest their assets, a place that is the best and the most profitable for them. That's why from the position of deposits' attractiveness for individuals, it is possible to conclude that all the viewed credit organizations have rather interesting, convenient, and accessible conditions for deposits.

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Modern Aspects of Evaluation of Russia's Food Security

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Abstract Food security is one of the most important directions of provision of the national food security of a state. Financial instability and deepening of the systemic economic crisis actualized the necessity for monitoring of the state of food security as an objective condition for Russia's economic sovereignty. The article views modern approached to determining the indicators of food security, based on the methodology of the Doctrine of food security of the RF and modern scientific concepts. Calculation and analysis of the indicators of food security and level of dependence on external supplies for 2000–2015 are presented. The indicators of achievement of rational norms of food products consumption and energy value of Russia's population's ration are presented. It is established that qualitative characteristics of food ration are closely connected to economic accessibility of food.

JEL Codes Q18 • Q17 • Q13

1 Introduction

Intensification of the process of strengthening of Russia's national sovereignty actualized the problems of provision of food security of the state. A lot of problems are brought down to the absence of the unified categorial framework of food security within state management and within the sphere of applied scientific research. Starting from 1996, there have been efforts to pass the federal law “on food security,” but the proposed projects were declined due to the lack of the financial conclusion of the government. The Decree of the President of the RF dated January 30, 2010, No. 120 established the Doctrine of food security which fixed the definition and indicators of food security of Russia (Doctrine of food security of the Russian Federation 2010). Despite the fact that the Doctrine regulates 14 indicators of evaluation of the food security state in view of the spheres of

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_50

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consumption, production, national competitiveness, and organization of management, only one indicator includes criterial values: share of domestic agricultural products in the total volume of commodity resources. This led to the fact that most measures of state support both at federal and regional levels are brought down to solving the issues of food self-provision, while food security integrates economic and social aspects of population's life and requires inclusion of a wider specter of indicators.

2 Materials and Methods

This research is performed on the basis of materials of the Federal State Statistics Service of the RF with the methods of complex economic analysis. The methodological basis of the research includes indicators of the level of food independence applied by the Russian authorities according to the Doctrine of food security, the concept and indicators of determining this indicator, and the system of economic security of the agro-industrial complex on the whole.

The level of food independence was determined by the following formula:

$$I_{fi} = (S_b + Q - S_e) / C_p \quad (1)$$

where I_{fi} is the level of food independence, S_b is the reserves at the beginning of the year, S_e is the reserves at the end of the year, Q is the volume of production, and C_p is the volume of private and production consumption within the country.

Indicator of external supplies' dependence is calculated by the following formula:

$$I_{fd} = Im / (Q - Ex) \quad (2)$$

where I_{fd} is the level of dependence of external supplies, Im is the volume of import, and Ex is the volume of export.

The main source of information for calculating these indicators is the balance of resources and the use of agricultural resources and food (Mazeina 2011; Shagayda and Uzun 2015).

3 Results

3.1 *International Approaches to Evaluation of Food Security*

Studying the evolution of approaches to determining food security, it should be noted that the list of indicators that characterize it had grown substantially (Saravia-Matus et al. 2012). The 1974 Universal Declaration on the Eradication of Hunger

and Malnutrition determines food security as a guarantee of provision of all people to food at any time and in the volume necessary for active and healthy life; the 1996 Rome Declaration on World Food Security distinguished five key principles of sustainable food security (The Rome Declaration on World Food Security 1997).

At the modern stage, formation of food security of most countries is based on the concept of food security of the Food and Agriculture Organization of the UN, the main of which are the following:

- Food security does not mean self-provision with food.
- A country has to strive to production of necessary volume of food products for its needs, if there are comparative advantages.
- A country has to be able to import the necessary volume of food products and satisfy needs for food of its citizens.
- Governments should satisfy physical and economic accessibility of safe food (Beckford et al. 2011).

Using the mathematical tools, experts of the FAO evaluate food security according to a range of indicators in view of four directions: availability of products, accessibility of food, stability of food provision, and food consumption.

The most complete complex of indicators of food security's state is presented by the studies performed by the Economist Intelligence Unit with support from the American transnational company DuPont. Starting from 2012, the company has been determining the global index of food security by analyzing the three main groups of indicators: level of sufficiency and consumption of food products, availability and sufficiency of food products, and level of quality and security of food products. Based on this research, the ranking of 109 countries of the world on the level of food security is prepared. In 2013–2014, Russia was ranked 40th, and in 2015 43rd, being behind the USA and countries of the EU—which shows serious problems in this sector of the national security (Table 1).

3.2 Food Security

The national approach to evaluation of food security is focused on the problem of food independence, which—under the conditions of Russia's membership in the WTO and orientation at import substitution—is a priority. Food security is determined by the level of self-satisfaction of population's needs for food products by means of own production of the main types of agricultural products, raw materials, and food (Romanenko 2014).

Let us perform analysis of the level of food independence of Russia with the help of the methods given in the Doctrine. The results of the calculations are given in Table 2. In 2000–2015, food security was fully achieved for grain, potato, and fish products. For meat and meat products, the indicator of food independence was below the threshold value (85%).

Table 1 Index of the global food security of the countries of the world in view of the key criteria in 2015, according to the Economist Intelligence Unit

Country	Index of the global food security		Economic accessibility		Physical accessibility		Quality and security	
	Rank	Points	Rank	Points	Rank	Points	Rank	Points
USA	1	89.0	2	92.1	1	87.0	3	86.4
France	10	83.8	19	84.2	9	81.7	2	88.5
Spain	20	78.9	22	82.1	18	73.4	5	86.0
Saudi Arabia	30	72.8	25	80.6	33	67.7	43	67.3
Panama	40	65.4	41	65.9	37	66.2	49	62.0
Russia	43	63.8	33	71.7	39	52.6	28	74.9
Bulgaria	50	61.0	38	68.7	62	54.9	56	58.6
Ecuador	60	56.0	59	55.6	62	54.9	52	59.7
Guatemala	70	49.7	70	47.5	77	50.0	62	54.1
Benin	80	41.7	80	36.4	7	48.8	94	35.7
Yemen	90	37.3	76	37.7	102	38.7	99	32.4
Niger	100	33.6	97	24.9	100	39.4	89	39.7
Burundi	109	25.1	107	19.4	109	25.6	91	38.1

Table 2 Indicators of food independence of Russia for main food products, %

Food products	Normative	2000	2005	2010	2015	Forecast for 2020
Grain	>95	95.9	117.5	122.4	177.0	192.3
Potato	>95	101.2	102.0	101.0	105.4	104.4
Meat and meat products	>85	69.1	62.0	72.4	88.9	90.8
Milk and dairy products	>90	91.3	82.3	80.6	81.0	66.8
Fish products	>80	–	–	117.5	114.4	113.0

For milk and dairy products, the level of food independence was reached in 2000, but it reduced then and constituted 81% in 2015, which is by 4% lower than the threshold value. As of 2020, the reduction of this indicator is forecasted, which requires urgent measures for supporting the sphere of dairy cattle breeding.

An important direction of the research is determining the food market's dependence on external supplies (Table 3). Such types of food as grain, eggs, and egg products are least dependent on import. Despite the high level of dependence on external supplies of vegetables and meat products, this indicator does not exceed the threshold value of 30%, while in 2010–2015 the level of dependence on import of milk and dairy products is close to critical value, constituting 26.2%.

In order to help the dairy cattle breeding overcome the crisis situation, it is necessary to pay more attention in this sphere. The following measures are required:

- Creation of the mechanism of economic interest of agricultural companies in increase of milk production

Table 3 Indicators of food dependence on external supplies in Russia in 2000–2015

Food products	2000	2005	2010	2015
<i>Production (million tons)</i>				
Grain	65.4	77.8	61.0	104.8
Potato	29.5	28.1	21.1	33.6
Vegetables and gourds	11.4	12.1	13.3	17.7
Meat and meat products	4.4	5.0	7.2	9.6
Milk and dairy products	32.3	30.8	31.8	30.8
Eggs and egg products (millions)	34,085	37,091	40,600	42,570
<i>Export (million tons)</i>				
Grain	1.3	12.2	13.9	30.7
Potato	0.03	0.03	0.09	0.21
Vegetables and gourds	0.2	0.9	0.5	1.1
Meat and meat products	0.04	0.07	0.1	0.1
Milk and dairy products	0.5	0.5	0.5	0.6
Eggs and egg products (millions)	326	197	244	354
<i>Import (million tons)</i>				
Grain	4.7	1.5	0.4	0.8
Potato	0.6	0.5	1.1	0.9
Vegetables and gourds	2.2	3.5	3.2	2.6
Meat and meat products	2.1	3.1	2.9	1.4
Milk and dairy products	4.7	7.1	8.2	7.9
Eggs and egg products (millions)	1168	882	901	1236
<i>Dependence on external supplies (%)</i>				
Grain	7.3	2.3	0.8	1.1
Potato	2.0	1.8	5.2	2.7
Vegetables and gourds	19.6	31.3	25.0	15.7
Meat and meat products	48.2	62.9	40.8	14.7
Milk and dairy products	14.8	23.4	26.2	26.2
Eggs and egg products (millions)	3.5	2.4	2.2	2.9

- Formation of full food supply
- Increase of cows' productivity by means of improving their breeding abilities

A large importance for effective organization of milk production belongs to the rational use of state regulation of formation of food markets and infrastructure of milk cattle breeding (Mazeina 2011).

3.3 Physical Accessibility of Food

One of the main targeted indicators of food security is the level of achievement of rational norms of food products consumption per capita. Ratio of factual volumes of consumption of food products to rational norms set by the Ministry of Healthcare of

Table 4 Factual and rational consumption of main food products in Russia in 2000–2015, kg per annum per capita

Food products	Rational norm	Factual consumption				2015 in % to the rational norm
		2000	2005	2010	2015	
Bread products	100	117	121	120	118	118.0
Potato	98	109	109	104	112	114.3
Vegetables and gourds	130	79	87	101	111	85.4
Fruit and berries	95	32	46	58	61	64.2
Meat and meat products	73	45	55	69	73	100.0
Milk and dairy products	330	215	234	247	239	72.4
Eggs	260	229	250	269	269	103.5
Fish and fish products	20	14	17	21	23	115.0
Sugar	26	35	38	39	39	150.0
Vegetable oil	11	10	12	13	14	127.3

Table 5 Food and energy value of food products of households in Russia, daily average per capita of household

Indicator	Normative	2000	2005	2010	2015
<i>Food value (g per day)</i>					
Protein	82	62	71	77	77
Fats	95	82	96	105	105
Carbs	417	351	368	348	330
Energy value (kcal per day)	2850	2394	2630	2652	2527

the RF shows physical accessibility of food. The calculations showed that in 2015 the factual level of consumption of 7 out of 10 main groups of food products exceeds rational norms (Table 4).

Analysis of quantitative indicators of the consumption volumes of food products should be supplemented by qualitative characteristics of the ration, which include food and energy values of the products consumed by the population. Ratio of factual indicators with norms of physiological needs for energy and food products set by the Russian Federal Consumer Rights Protection and Human Health Control Service showed that despite the increase of consumption of protein and fats in 2000–2015, the energy value of nutrition does not conform to the recommended norms (Table 5) (Shagayda and Uzun 2015). In 2015, energy value of the ration constituted 88.7% of the recommended normative of average daily consumption of 2850 kcal. Russia is behind the developed countries, where average daily consumption of kcal per capita varies from 3300 (Italy) to 3500 (Great Britain, Germany, and France) and reaches 3700 in the USA (Aghanbegyan and Porfiriev 2015).

4 Discussion

Concluding the above analysis, it is possible to state the following:

1. Food security is one of the most important directions of the national state security of a state. Financial instability and deepening of systemic economic crisis actualized the necessity for monitoring the state of food security as an objective condition for economic sovereignty of Russia.
2. The existing approach to evaluation of food security, fixed within the Doctrine of food security of the RF, requires serious correction in part of the methodology of calculation of certain indicators and their criterial values and specification of information base for conduct of analysis.
3. Analysis of the state of food independence in view of the volume of export and import of resources showed that threshold values are exceeded only for milk and dairy products, which is caused by systemic problems in the sphere of dairy cattle breeding;
4. Physical accessibility of food is achieved for seven main groups of food products. Consumption beneath the rational norm is noted for milk and dairy products, vegetables, and fruit. Energy and food security of the ration are not well balanced, which is manifested in excessive consumption of fats with insufficient level of protein and carbs.

5 Conclusions

Reliable provision of Russia's food security in the context of its membership in the WTO and the Customs Union is a necessary condition for preservation of integrity and strengthening of Russia's sovereignty. In these conditions, the issue of operative monitoring of the state of food security became very actual and requires a complex approach.

The existing methodologies of determination of food security of the state are brought down to analysis of separate indicators in view of three key directions: food independence and physical and economic accessibility of food—which are closely connected to each other. That's why the problem of provision of food security of the country is systemic and is related to sustainable macroeconomic development of the state and its possibilities of conduct of effective economic, agrarian, and social policies.

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Mechanisms of Regulation of Economic Processes in a Region

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Abstract This chapter views the systemic and dynamic model as one of the main mechanisms of regulating the innovational processes in a region. Application of the offered model will allow determining the level of influence of investments at each stage of the innovational process on growth of GRP and increase of the number of the employed in these process and to forecast regional economic indicators in the mid term and the long term.

JEL Codes Q18 • Q17 • Q13

1 Introduction

As the main economies of the world develop slowly due to the economic crisis, Russia found itself in a difficult and challenging situation. On the one hand, the Russian economy grows rather quickly—especially, against the background of the global economy; on the other hand, there are limits of growth that could be overcome only on the basis of the innovational path of development.

At present, the main endogenous factor of production growth of the national economy is technical progress, manifested in development of high technologies, implementation of the results of R&D, and realization of innovations into practical activity of modern companies. Progress influences competitiveness of companies, market structure, and sectorial system of the national economy, as well as international competitiveness of economy in the conditions of globalization.

Innovational development of the region could be determined as development that leads to changes in proportions between spheres, within spheres, and between separate productions and that is conducted on the basis of using the results of

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_51

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scientific and technical progress in the form of manufacture of new products, use of new technologies, knowledge, etc. (Aksenova and Emelyanova 2012).

The correctly selected mechanisms of management of innovative activity stimulate development of territories.

The system of mechanisms of innovations management within the innovational process could be presented by the following functional groups:

- Mechanism of organizations' innovative activity
- Mechanism of development and implementation of innovations
- Mechanism of financing of innovative activity
- Motivating and stimulating innovational mechanisms
- Mechanisms of technological transfer
- Mechanisms of intellectual property
- Mechanisms of planning of innovational measures and control
- Mechanisms of interaction of participants of the innovational process

The next component of the innovational mechanism is development and implementation of innovations. This group includes search for innovational solutions and development and implementation of innovations (Platonova and Gorkovenko 2010).

Starting the mechanisms of development and implementation of innovations requires the corresponding concentration of intellectual, material, and financial resources, their effective combination in time and space.

At present, the problem of development of tools for assessing the influence of managerial solutions at the level of the regional economy is not yet solved. In view of the fact that campaigns of the regional policy are usually long term, the tools for assessing the influence of innovative activity on development of the region's economy were developed for the mid term and long term. A regional imitational model is offered for such a tool—it allows evaluating the effectiveness of innovative activity of various managerial solutions for the region and selecting the optimal variant by the example of the regional industrial policy, on the basis of the scenario approach.

2 Materials and Method

The offered model includes several blocks with corresponding interconnections of innovational process's subjects.

At the initial stage, it is necessary to view interdependence of participants of the region's innovative activity. These subjects are enterprises and organizations that are creators of various innovations and companies that consume these innovations (Sirazetdinov et al. 2005). From the point of view of participation in the innovational process, these companies could be divided into five blocks:

- (1) Organizations performing R&D activities and fundamental and applied research
- (2) Enterprises that participate in manufacture of production means (MPM)
- (3) Enterprises that participate in manufacture of items of consumption which are production funds and turnover funds (PTF)
- (4) Enterprises that participate in manufacture of final products of consumption (FPC)
- (5) Organizations that perform the function of an intermediary during transfer of goods or provision of services and that participate only in formation of added value (AV)
- (6) Organizations that reproduce labor resources (RLR)

Within realization of the stages of the innovational process at the regional level, innovations are created in organizations that conduct fundamental, applied, and R&D works, while the results of these organizations are used by manufacturers of goods or services.

Enterprises that participate in manufacture of main production funds use the results of scientific and applied research and apply them in production of innovational machines and equipment that stimulate reduction of cost and increase of competitiveness of future products of the companies that create work objects.

Production turnover funds are created at industrial enterprises and participate in the production process only once, transferring their cost to the cost of the final product. Innovational approach of these companies could be viewed in the use of technological innovations within application of resources and raw materials that allow for improvement of qualities of the final product with possible reduction of the cost.

In economy, the final product is the product that is not further processed or sold. The following scheme of movement of innovational products shows enterprises that produce such goods that are sold directly to consumers and consumed by the manufacturing company, excluding their further use.

Innovational approach of these companies could be used within application of technological, economic, and ecological innovations that allow for creation of ecologically clean products with lower cost and increased functionality of use.

In the regional scheme, an important role belongs to organizations that are intermediaries during promotion of products or financial resources and provision of services.

Reproduction and high-quality preparation of personnel that is capable of out-of-the-box thinking play an important role in manufacture of innovational products at all stages of the innovational process. In this, the main role belongs to the sphere of professional education.

Let us view the movement of innovational and other type of products in the region's economic system (Fig. 1).

Organizations that participate in fundamental and applied research create innovational product in the quantity X_N per unit of time, which could be consumed by the organizations $X_N^{(1)}$; enterprises of the regional economic system X_N^P that

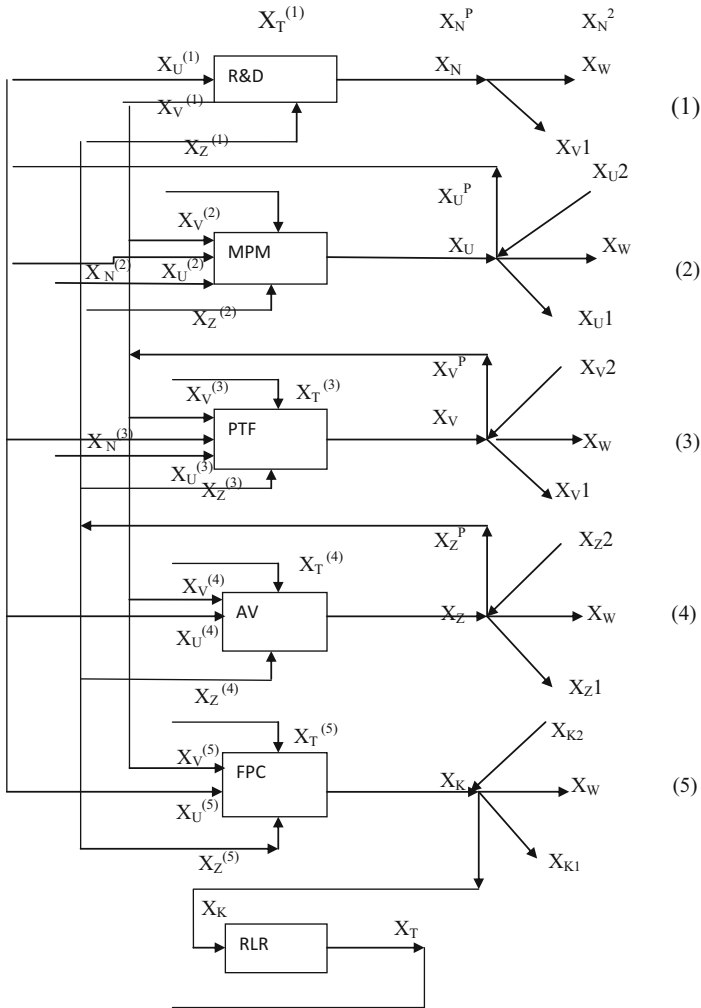


Fig. 1 Scheme of movement of innovational products in the regional economic system

manufacture production means, labor objects, and products of final consumption perform the role of intermediaries, sell innovational products to other regions X_{N1} , and be consumers of scientific research from other regions due to their absence on the territory of this economic system X_{N2} .

Thus, quantity of innovational products used or consumed by the regional economic system per time unit is calculated in the following way:

$$X_N^P = X_N - X_{N1} + X_{N2} \tag{1}$$

The values X_N^P , X_N , X_{N1} , and X_{N2} have the same steadiness but different internal structures, as they cannot replace each other during consumption or usage. This is the main reason for consumption of innovational products of this type beyond the viewed regional economic system.

Therefore, there is the following balance ratio:

$$X_N^P = X_N^{(1)} + X_N^{(2)} + X_N^{(3)} \quad (2)$$

For the manufactured quantity of innovational products X_N with application of formulae (1) and (2), we have the following:

$$X_N = X_N^P + X_{N1} - X_{N2} = X_N^{(1)} + X_N^{(2)} + X_N^{(3)} + X_{N1} - X_{N2} \quad (3)$$

Enterprises that manufacture the main production funds (block MPF) also produce the main funds in the quantity X_U per time unit that could be used by the companies $X_U^{(1)}$; companies of the regional economic system X_U^P that manufacture labor objects, products of final consumption and that are intermediaries, and sold to other regions X_{U1} , as well as be consumers of the main production funds from other regions due to lack of their production on the territory of the economic system X_{U2} .

Thus, the quantity of innovational main production funds that is used by the regional economic system per time unit is calculated by the following expression:

$$X_U^P = X_U - X_{U1} + X_{U2} \quad (4)$$

The values X_U^P , X_U , X_{U1} , and X_{U2} have the same steadiness but different internal structures, as they cannot replace each other during consumption or usage. This is the main reason for consumption of the main production funds beyond the viewed regional economic system.

Therefore, we have the following balance ratio:

$$X_U^P = X_U^{(1)} + X_U^{(2)} + X_U^{(3)} + X_U^{(4)} + X_U^{(5)} \quad (5)$$

Then, the manufactured quantity of the main production funds X_U in view of application of formulae (1) and (2) is calculated in the following way:

$$\begin{aligned} X_U &= X_U^P + X_{U1} - X_{U2} \\ &= X_U^{(1)} + X_U^{(2)} + X_U^{(3)} + X_U^{(4)} + X_U^{(5)} + X_{U1} - X_{U2} \end{aligned} \quad (6)$$

Enterprises that issue operating funds manufacture labor objects in the quantity X_V per time unit. Thus, the quantity of operating funds X_V^P consumed by this economic system per time unit is calculated by the following equality:

$$X_V^P = X_V - X_{V1} + X_{V2} \quad (7)$$

At that, the required quantity of operating funds of the viewed economic system X_V^P is distributed in the following way: one part goes to the organizations involved in R&D $X_N^{(1)}$, to the companies manufacturing the main production funds $X_V^{(1)}$, a part goes to the enterprises that manufacture operating funds $X_V^{(2)}$, while the main consumers are organizations-intermediaries $X_V^{(3)}$ and enterprises that manufacture the products of final consumption $X_V^{(4)}$. The viewed distribution of turnover funds is presented in the following equation:

$$X_V^P = X_V^{(1)} + X_V^{(2)} + X_V^{(3)} + X_V^{(4)} \quad (8)$$

Formulae (4) and (5) lead to the following:

$$X_V = X_V^{(1)} + X_V^{(2)} + X_V^{(3)} + X_V^{(4)} + X_{V1} - X_{V2} \quad (9)$$

Organizations-intermediaries (block AV) do not manufacture any products but participate in the formation of added value of products that are the objects of buy and sell X_Z ; the viewed organizations sell the products to all participants of the regional economic system, according to the emerging needs $X_Z^{(1)}, X_Z^{(2)}, X_Z^{(3)}, X_Z^{(4)}$. Also, these organizations can consume the products of other regions, selling them in the economic system X_{Z2} and sell the excess to X_{Z1} . The required quantity of products, sold by organizations-intermediaries X_Z^P , is calculated by the following equation:

$$X_Z^P = X_Z - X_{Z1} + X_{Z2} \quad (10)$$

Each component of products has its own structure of final consumption, but it is not taken into account in this task setting.

Let us view the equation of products purchased and sold by organizations-intermediaries for provision of activities of this economic system:

$$X_Z^P = X_Z^{(1)} + X_Z^{(2)} + X_Z^{(3)} + X_Z^{(4)} \quad (11)$$

Formulae (10) and (11):

$$X_Z = X_Z^{(1)} + X_Z^{(2)} + X_Z^{(3)} + X_Z^{(4)} + X_{Z1} - X_{Z2} \quad (12)$$

Enterprises that manufacture the products of final consumption (block FPC), product them in the quantity X_K per time unit. An enterprise can sell the excess of products elsewhere in the quantity X_{K1} , and the products could be bought elsewhere in order to satisfy the needs of employees of companies X_{K2} . The required quantity of the final products for provision of activity of the viewed economic system X_K^P per time unit is calculated by the following formula:

$$X_K^P = X_K - X_{K1} + X_{K2} \quad (13)$$

These products are peculiar for the fact that they are aimed for private consumption of people who live on the territory of this economic system and beyond it, i.e.:

$$X_K^P = X_K^{(4)}, \quad (14)$$

Formulae (13) and (14) lead to the following:

$$X_K = X_K^{(4)} + X_{K1} - X_{K2}, \quad (15)$$

The people that are a part of the economic system X_T work at the production of main production funds $X_T^{(1)}$, operating funds $X_T^{(2)}$, and intermediary organizations $X_T^{(3)}$ and enterprises that create final consumption products $X_T^{(4)}$. Thus, we have the following:

$$X_T = X_T^{(1)} + X_T^{(2)} + X_T^{(3)} + X_T^{(4)}, \quad (16)$$

Very often, parameters $X_U^{(i)}$, $X_V^{(i)}$, $X_Z^{(i)}$, $X_T^{(i)}$, ($i = 1,2,3,4$) are set in shares of the values X_U^P , X_V^P , X_Z^P , X_K^P , accordingly.

Therefore, for the purpose of functioning of companies and organizations of the economic system, the flows of the main production funds X_U^P are distributed in the following way:

$$\begin{aligned} X_U^{(1)} &= a_u X_U^P, \\ X_U^{(2)} &= b_u X_U^P, \\ X_U^{(3)} &= c_u X_U^P, \\ X_U^{(4)} &= d_u X_U^P. \end{aligned} \quad (17)$$

Increase of production capabilities of the society is related to the initial financial investments into production means, manufacture of which stimulates the increase of consumption items, creation of additional jobs, and growth of living standards of people and the region's economy.

The process of crisis overcoming is related to innovational activity, which stimulates development of completely new methods of economic development of an economic system, by means of creation and implementation of new technologies and organizations production. Development of innovative activity in a region is a rather complex process that requires stable resource provision of production, development of new sales markets, constant increase of products' competitiveness, sustainable financial functioning, state support, etc.

At present, innovations turned from sporadic phenomenon into a flow that influences the whole socio-economic life of the society. Growth of innovations leads to uncertainty of the future and, as a consequence, to reduction of its predictability and decrease of the horizon of planning of various socio-economic

events. Long-term forecasts are always incorrect and lose their sense. At present, the past strategic values are reconsidered, but there's no consistent theory of strategic planning.

Impossibility for realization of the long-term projects is connected to the phenomenon of innovation that leads to emergence of new possibilities for development. Each innovation means bifurcation of the trajectory of the system's movement. At that, each alternative of development bifurcates and creates new branches, which is called "felled fid tree" in the literature (Bezruchko et al. 2005).

A region's economic growth could be measures by the growth of gross regional product (GRP). The analysis showed that dynamics of the resulting indicator of region's activity (GRP) shows exponential growth in time, which is peculiar for behavior of systems with the cycle of positive feedback.

In order to explain the mechanism of functioning of the regional innovational system and evaluate the influence of the innovational system's characteristics on the regional development, a systemic and dynamic model was created, the conceptual scheme of which is given in Fig. 2.

Here we use the following data (in the terms of Rosstat): internal expenses for scientific R&D, expenses for technological innovations, number of personnel involved in scientific R&D, number of applications for patents (inventions and models), number of created leading production technologies, number of the used leading production technologies, average annual number of the employed in economy, and gross regional product.

GRP is formed by the spheres involved in production of market goods and services and the spheres that produce non-market services and participate in R&D activity. The cycle of the offered model starts from financing of the innovative activity, namely—expenses for R&D. Expenses for R&D include payment to the employed in the sphere of R&D. Expenses for R&D works in the previous period $Er&d_{t-1}$ are summed to growth of expenses for R&D works $\Delta Er&d_t$ —as a result, we receive the total sum of expenses for R&D works in the current period $3r&d_t$. Total expenses TE_t are formed by other expenses E_{PR} . Thus, the model includes calculation of the number of the employed NE_t in the sphere of R&D as a function of expenses for R&D. The result of research and development is new knowledge which is assessed according to the number of created technologies and issued patents P_t .

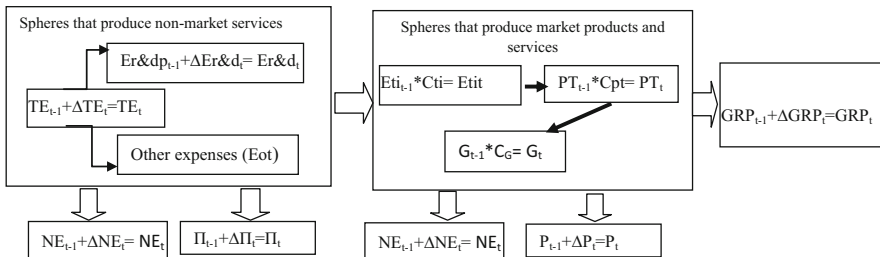


Fig. 2 Systemic and dynamic model of influence of factors on gross regional product

The final result depends on a lot of factors. Let us dwell on three main aspects. For modeling the volume of produced knowledge, some authors (Audretsch and Feldman 2003) use the Cobb–Douglas production function—at that, the possibility of using this function is empirically confirmed for aggregated levels of consideration—sphere or country. Based on the logic of such function, the main factors of production are labor and capital. In our case, labor is the number of the employed in R&D, and capital is assessed through expenses for R&D. Besides, we consider that the additional factor that determines production of new knowledge is the volume of existing knowledge. That is, the categories of flow (employment and expenses for R&D) are supplemented by the category of stock (volume of accumulated knowledge).

In the sphere where market goods and services are produced, financing of technological innovations E_{ti} is performed, which results in technological innovations. Firstly, using new technologies is determined by availability of these technologies. Secondly, implementation of new technologies supposes expenses for purchase of new technological equipment that stimulates growth of labor efficiency L_{Et} and the volume of manufactured products G_t in a region. The volume of goods and services in the region G_t in the current period is calculated in view of the coefficient of increase of goods and services in the region K_G .

Labor efficiency and the number of the employed in the region's economy determine the dynamics of GRP. Economy should be ready to receive technologies—for that, there should exist certain absorbing capabilities which could be measured by the number of the employed in R&D. This is a ratio of endogenous estimated value of the employed in R&D to exogenous variable of employment in the region's economy.

The model's cycle is finished with a certain share of GRP—through tax revenues into the budget—being used for financing of R&D and TI. Apart from that, R&D and TI are financed from external sources—primarily, the assets of the federal budget, the exogenous variable model. As for expenses for R&D, circa $\frac{1}{2}$ – $\frac{2}{3}$ of (in various periods) of these expenses are financed by means of the federal budget's assets.

3 Results

Let us view the offered model by the example of Kirov Oblast, which is ranked 41st in the RF as to the level of innovational activity. The region is prevailed by technological innovations in the industrial production. The dominating part of innovational products was exported, and 97.6% of the export was shipped to the non-CIS countries (Table 1).

Model of exponential growth is the simplest model of examples of systemic and dynamic models. The model is described by the following differential equation:

Table 1 Indicators of innovational activity of the region

Indicators	2010	2011	2012	2013	2014	Change 2010 to 2014 (%)
Volume of performed scientific and technical works (RUB million)	889.6	1019.8	1249.6	1284.0	1524.9	171.41
Issued patents for inventions	74	49	55	75	76	102.70
Number of personnel involved in R&D (as of year-end) (people)	1615	1707	1795	1683	1804	111.70
Internal expenses for R&D (RUB million)	849.7	901.0	1095.9	1077.6	1362.4	160.34
<i>Including for sources of financing</i>						
Own assets	148.8	194.0	256.4	173.5	281.1	188.91
Assets of budgets of all levels	308.4	278.6	416.6	492.4	596.3	193.35
Assets of organizations of entrepreneurial sector	389.2	422.2	392.8	378.3	460.6	118.35
Expenses of organizations for technological innovations (RUB million)	877.5	1983.0	3090.5	3107.7	2777.5	316.52
<i>Including</i>						
Federal	308.3	278.3	412.3	490.7	593.5	192.51
Subject of the RF and local budgets	0.1	0.3	4.3	1.7	2.9	2900.00
Supplied innovational goods, works, and services	6965.5	9360.7	9962.5	9593.3	11,238	161.34
GRP (RUB million)	172,352	195,269	208,505	224,726	225,600	130.89

$$\frac{dy}{dt} = k \cdot y \quad (18)$$

If the coefficient $K > 0$, the equation described “positive feedback”, and the function presenting the solution to the equation grows exponentially in time with the indicator k .

The exponential *model* is used for approximation of the data according to the least squares method according to the following equation:

$$y = ce^{bx} \quad (19)$$

where c and b —constants, e —basis of the natural logarithm.

The value R -square is determined according to the following formula

$$R^2 = 1 - \frac{SSE}{SST} \tag{20}$$

where,

$$SSE = \sum (Y_j - \hat{Y}_j) \text{ and } SST = \left(\sum Y_j^2 \right) - \frac{(\sum Y_j)^2}{n} \tag{21}$$

The coefficient of determination of internal expenses for R&D constituted $R^2 = 0.9122$, which is a good proximity level to GRP. The smallest coefficient of determination $R = 0.4996$ consists of organizations’ expenses for technological innovations, which is a low proximity level to GRP—at that, growth of the indicator constituted 316% for the past 5 years. We face the task of determining the influence of this type of expenses for growth of GRP (Fig. 3).

Calculation of the projected indicators allows for the conclusion that the policy of regional authorities will be aimed at investing into technological innovations, and they will be increased in the next 10 years; however, there is no substantial growth of GRP. This fact shows that expenses for technological innovations perform smaller influence on formation of GRP.

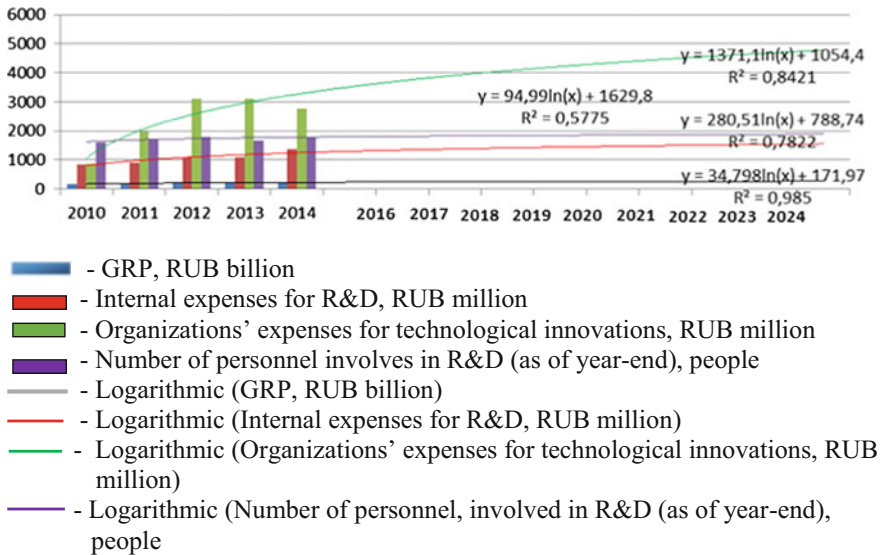


Fig. 3 Forecast of investing into development of innovations in the region. *Blue bars* GRP, RUB billion; *red bars* internal expenses for R&D, RUB million; *green bars* organizations’ expenses for technological innovations, RUB million; *violet bars* number of personnel involves in R&D (as of year-end), people; *grey lines* logarithmic (GRP, RUB billion); *red lines* logarithmic (internal expenses for R&D, RUB million); *green lines* logarithmic (organizations’ expenses for technological innovations, RUB million); *violet lines* logarithmic (number of personnel, involved in R&D (as of year-end), people)

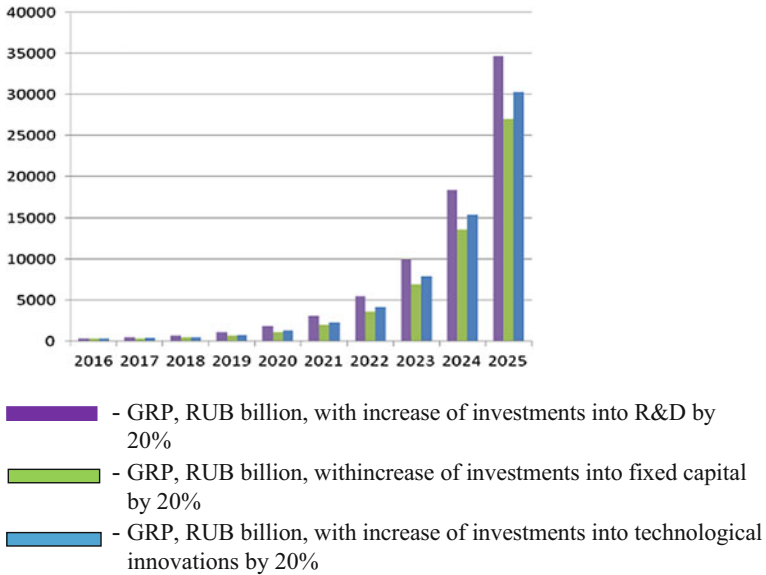


Fig. 4 Influence of investments on GRP. *Violet bars* GRP, RUB billion, with increase of investments into R&D by 20%; *green bars* GRP, RUB billion, with increase of investments into fixed capital by 20%; *light blue bars* GRP, RUB billion, with increase of investments into technological innovations by 20%

The offered model allows determining the influence of investments into the factors of innovational activity (Fig. 4). Obviously, increase of investments into R&D, fixed capital and technological innovations influence GRP differently. In our case, investments into R&D have the largest influence.

4 Discussion

Various foreign and Russian authors have described peculiar features and qualities of management models. The foreign authors who contributed a lot into development of this problem include R. Owen, F. Taylor, M. Weber, A. Fayole, G. Emerson, E. Mayo, D. McGregor, A. Maslow, R. Likert, R. Blake, J. Mouton, W. Ouchi, L. Erhard, K. Myrdal, and K. Eklund; the Russian authors include I.T. Pososhkov, A.N. Radishchev, M.M. Speransky, N.S. Mordvinov, P.A. Stolypin, A.A. Bogdanov, A. Chayanov, A.K. Gastev, S.G. Strumilin, M.V. Grachev, V.V. Goncharov, and O.A. Platonov.

The models' classes are determined by the logic of model creation and the used methods of formalization and modeling. Based on that, it is possible to distinguish four classes of models:

1. Models of balance of economy (model of inter-sectorial balances, CGE models, demand-offer models)

2. Probabilistic and statistical (econometric, models on the basis of production functions)
3. Imitation models (recurrent, models of systemic dynamics)
4. Models on the basis of intellectual technologies (neural network models, expert systems)

All the above models could be applied for any economic system and traditional development. But the economy oriented at innovational development has a range of peculiarities.

Modeling of innovational processes at the regional level is a new direction which is still insufficiently studied.

5 Conclusions

Analyzing the system of management of Kirov Oblast, it should be noted that there is no integration in the innovational process—as the subjects of economic activity make individual non-systemic decisions on implementation and development of innovations, which does not bring the positive dynamics neither into development of innovational activity of the region nor into development of the economy on the whole.

The offered methodology and studied experience of using the main tools of investment provision of innovational processes in the regions of the RF, as well as leading practices of supporting innovative activity at the global level and recommendations for improvement of the mechanisms of investment provision of innovational processes at the regional level, allowed for determination of the perspective directions of innovational development of Kirov Oblast.

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Role of State Regulation in Development of Socio-labor Relations in the Context of the Russian National Model of Socio-economic Activity

Valentina I. Rodionova, Lyudmila A. Shvachkina, Konstantin V. Vodenko, and Petr A. Ponomaryov

Abstract This chapter analyzes development of socio-labor relation within formation of the national model of socio-economic activity. The role of state management in this process is analyzed. A conclusion is made on the necessity for social partnership relations that include employee, employer, and state.

1 Introduction

At present, Russia faces the task of formation of the effective system of socio-labor relations that conforms to the realization of the modern stage of public development. That's why it's necessary to acknowledge that successful modernization of society depends also on the model of socio-labor relations in a country. Over the recent years, the system of production relation in Russia transformed as a result of implementation of new socio-economic and political institutes peculiar for capitalism, which regulate the system of production, services, and labor resources. At that, despite significant changes in the system of interactions of subjects of labor activity, Russia is still behind developed countries of the West in creation of modern institutes and principles of organization of labor.

Viewing specifics of socio-labor relations, it is necessary to pay attention to the fact that the system of professional training in the Russian society has undergone substantial changes. There's an effect of "folding" of the traditional professional education, oriented at training of personnel for the production sphere. The factor of corporatization of professional education and training of personnel according to the

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order on a specific profile becomes very popular. In view of this, it is possible to say that socio-labor relations are peculiar for the situation of asymmetry, characterized by the fact that employer has increased requirements to qualification of employee, with the narrowed corridor of the possibility of increase of the professional and highly qualified potential.

Analyzing perspectives of development of socio-labor relations, as relations of “triangle” (employee-employer-state), it is possible to state that the state, as a participant of the process, has already left this sphere. At that, there’s a tendency for transfer of responsibility for professional training of the employee and stimulation of its readiness to invest into increase of professional and highly qualified potential within capitalization of personal resources.

An important aspect is the fact that socio-labor relations cease to be the object of legal regulation only, and their contractual character is determined by the influence of informal social capital. In this context, the object of the research is socio-labor relations as forms of interaction between employee and employer within labor division. Specifying this notion, it is possible to state that the object of the research is development of socio-labor relations in the conditions of transformation of the system of formation of professional and highly qualified potential.

2 Materials and Methods

During study of the national model of regulation of socio-economic activity, a significant aspect of the research is centered around the specifics of cultural and ideological foundations of state management. Thus, infrastructure of the research strives to clarify interaction of a range of social sub-systems that cover policy, economics, morality, etc. That’s why analysis of dynamics of development of the Russian society supposes clarifying the essential connections between foundations of public being and spheres of socio-economic and scientific and innovational production.

The combination of paradigms of studies of Weber and Marx, as well as structural functionalism (T. Parsons and N. Luhmann) and neo-constitutionalism (S.G. Kirdina), allows for formulation of the theoretical construct of feedback between the institute of cultures that are basic for the Russian society and modernizing practices of the innovational economy (Vodenko et al. 2016a, b). Synthesis of the above approaches allows freeing the heuristic potential of the theory aimed at explication of interaction between the dominating moral attitudes and socio-economic activity, for the purpose of building the national model of management and coordination of the viewed social sub-systems.

Observing a lot of developments in this sphere, it is possible to say that during the study of this problem, the institutional (D. North) and neo-institutional (R.M. Nureev, A.N. Oleynik, V.V. Radaev, V.T. Ryazanov, A.E. Shastitko, etc.) approaches dominate, in which, under certain interest to organizational and normative aspects of development of professional and highly qualified potential of an

employee, the subjectivization of professional settings, and readiness to growth of professional and highly qualified potential are still “in the shadow” (North 2010).

Socio-labor relations cease to be relations of the conflict or coincidence of interests between employee and employer and become a sphere of transfer of professional and highly qualified potential, its objectivization in totality of personal resources of employee, and subjectivization in the context of existing group dispositions (Dolzhenko 2014).

This research situation allows for application of the subject approach oriented at determining the readiness of employee to increase professional and highly qualified potential and determining the role of employer and state in this process. The subjective approach corresponds to the process of establishment of social partnership in the sphere of socio-labor relations. Stating this condition, it is possible to observe a paradox of formation of professional and highly qualified potential, characterized by the fact that employee has to use individualized strategies for acquisition and growth of professional and highly qualified potential and act as collective subject, related to practices of partnership within labor agreements.

3 Results

Russian economy is still peculiar for underestimation of human capital—despite recognition of importance of development of human resources in the conditions of replacement of the resource-based economy, the system of guarantees of social protection, and representation of employees is underdeveloped. According to the results of sociological studies, reduction of employment in state sector, with all advantages of this process, also has some disadvantages from the point of view of realization of tasks of transition to the market economy (Russian society and challenges of time 2015).

Despite expectations of growth of employees’ income at private companies, as compared to the state sector, these hopes were only partially true. At that, the indicator of professionals is only 20% at private companies (Russian society and challenges of time 2015). Difference in the level of qualification shows that demand for professionalism is still low for most employers. In other words, there’s an impression that employers want to deal with unqualified employees who can be fired without any damage to doing business.

At the same time, in view of loads on modernization of economic activity and the fact that only the employers who invest into their future and the future of their business have perspectives, it is possible to expect that socio-labor relations include transition to the formula of social partnership. One should not mix this process with cultivation of solidarity of employees and entrepreneurs, which is seen at the level of informal economy as mutual realization of violation of employees’ rights or their refusal from their rights on the basis of the fact that business lives through difficult times.

One of the aspects of social partnership is development of professional and highly qualified potential employees. It is possible to state that under current conditions, partnership relations are determined by employees and employers' readiness for joint practices. This means that employer is interested in employees being motivated by the state of the business and division of responsibility between employers and employees, as well as employees facing no risks within development of business.

Considering the fact that in the Russian economy the real labor loads on employees are very high and less than a third part of all employees who work full time (Russian society and challenges of time 2015), it is possible to say that social partnership faces the barriers of over-employment of employees and the corresponding effect of "quiet opposition."

This is expressed in the fact that positions of employees in the interaction with employer in evaluating the perspectives of social partnership are ambiguous. On the one hand, employees count on improvement of social protection, acknowledging the role of employer as a guarantor of their rights. On the other hand, there are worries regarding the fact that the formula of social partnership implies the policy of reduction or non-performance of liabilities as to employees. Besides, under the conditions of weak activities of union structures, as traditional structures of representatives of employees' interests, most of employers are not interested in strong unions and do not want to have organized employees in the sphere of their rights protection.

In this sense, social partnership can have a positive role, if it includes the possibility of transferring the socio-labor relations into the civilized legal regime and uses the mechanism of stimulating the social and economic activity of employees who are oriented at capitalization of the professional resource. Up until now, the Russian employees have been working according to the scheme of accumulation of employed service, while the real success in the sphere of professional activity has been a significant indicator starting from 1970s. American sociologists wrote that new generations prefer merits and achievements.

This tendency is expressed in the Russian society in the fact that at the level of socio-labor relations, professional maturity becomes a factor of start of socio-labor relations; however, it should be noted that the practice of ageism has negative influence, as it states that professional retraining and requalification are possible only at the young age.

4 Discussion

Within the studied problem, it is obvious that development of social partnership, as a principle of regulating the interaction between subjects of socio-labor relations and the system of formation of professional and highly qualified potential, is difficult without influence of the state—for the state, as a political and legal institute, provides the legal basis of socio-labor relations, on the one hand, and

stimulates investments into the process of professional education within the educational policy, on the other hand (Vaskov and Serdyuchenko 2015).

This is confirmed by foreign experience (Germany, Austrian, and Sweden) of the states in which professional education is of top-priority, and formation of professionally qualified potential is viewed as advantage of the modern system of education and market economy. It is possible to state that reality of the concept of interaction of society, state, and business is manifested in this sphere.

According to the German author P. Kozłowski, individualistic societies, in which constituent foundation is market (capitalism) and discourse (democracy), face a dilemma that allows viewing the division of state and society in a new light (Kozłowski 1998). In the modern society, state acts on the basis of democratic decisions, made during the process of coordination of opinions. In the context of the above, the system of professional education is in the sphere of influence of state within determination of long-term perspectives.

It is important for the Russian society that acknowledgment of lack of options for accumulation of human capital and its actualization as a moving force of modern economic development would lead to reformatting of the system of socio-labor relations for three directions. Firstly, coordination of goals of social participation and market. Secondly, professional education's becoming a part of business activity. Thirdly, determining the quality of state regulation as the one built on the principles of mutual responsibility.

This means that state regulation is related to strengthening of the basis of professional education which stimulates business initiative and increases employees' accessibility to resources of professional education and creation of conditions in which both employer and employee would be interested in investing their resources into increase of professional and highly qualified potential. Thus, interaction of the system of education and subjects of socio-labor relations becomes regular, acquiring the character of educational practices.

According to the Russian specialists D.L. Konstantinovskiy, E.D. Voznesenskaya, and G.A. Cherednichenko, a certain set of knowledge, skills, capabilities, and motivations that is formed by a human as a result of investments of accumulation stimulates growth of his efficiency and income and forms the capabilities of participation in the process of production (Konstantinovskiy et al. 2014). In other words, including the formation of professional and highly qualified potential in socio-labor relations that contains substantiation of the principles of mutual participation and responsibility of employer and employee with active participation of state as a guarantor.

State regulation is determined by the balance of formal and informal norms and by bonuses to those employers and employees for whom professional and educational trajectories are closely connected. Acknowledging that the purpose of state regulation is socio-economic development of society, it is necessary to understand that state, through the system of regulation, initiates the transfer of the subjects of socio-labor relations to the system of professional education.

Thus, state regulation develops forms and rules according to which the subjects of socio-legal relations are in "equal categories regardless of scales and profitability

of business.” An important aspect is that development of small and medium business in Russia supposes transition to the innovational economy and refusal from intermediary activity. Such possibilities are determined by creating the professional potential in the structure of small and medium business that allows developing and implementing high-tech innovations. In the context of socio-labor relations, the consequences include reduction of influence of the “shadow area” and compensation capability of the state regarding expenses of small and medium business for professional education.

5 Conclusion

Development of socio-labor relations that include interaction between employer, employee, and state influences the system of formation of professional and highly qualified potential through the mechanisms of demand and investing into this sphere. It is possible to state that during inclusion of professional and highly qualified potential into socio-labor relations, their new level emerges, related to acknowledgment of the criterion of professionalism as evaluation and professional qualities of employee and business and organizing culture of employer, as well as perspective of the specific business project on the whole.

Acknowledgment This chapter was prepared within the grant of the President of the Russian Federation for state support for young Russian scholars—doctors of science—on the topic “Cultural and ideological foundations for formation of the national model of regulation of socio-economic and scientific and innovational activities” (MD-651.2017.6).

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Perspectives of Development of the Russian National Socioeconomic and Political Model

Konstantin V. Vodenko, Valentina I. Rodionova,
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Abstract The article is devoted to studying the development of the national socioeconomic and political model in view of constant interaction with the Russian cultural and historical tradition, which influences managerial decisions. The perspectives of cultural and ideological changes of the leading basic institutes of the Russian society are viewed, including the ideological concepts for the purpose of intensification of innovational development. It is noted that the main trends of the culture policy are still connected to development of institutes of civil society and formation of full middle class.

1 Introduction

At present, the interest to cultural and ideological peculiarities of the Russian socioeconomic and political model of development growth, which is largely predetermined by the research interest of a complex character, aimed at studying the problems of transformation and functioning of institutional matrices. In our opinion, analysis of interaction between the economic and political spheres of the Russian society is very interesting, as it might stimulate both activation and slowdown of the rates of the country's innovational development. We think that interaction of economic and political spheres of public life has indirect character, where culture, treated as a complex of spiritual and ideological attitudes, as an intermediary link (integrator), in which political decisions aimed at reformation and stabilization of socioeconomic system on the whole are legitimized.

Thus, cultural and ideological foundations of the Russian spiritual tradition should be viewed as determinants of the national path of scientific and innovational and socioeconomic development that possess ambivalent character—i.e., capable

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_53

of slowing down the modernization processes, being the source of inertia, and are a trigger of innovational growth in a range of public subsystems, in case of optimal creation of a managerial model.

The viewed perspectives of development of the national socioeconomic and political model in the context of cultural peculiarities of the Russian society are analyzed on the basis of the works of S.G. Kirdina, M.K. Gorshkov, F.E. Sheregi, A.S. Panarin, A.S. Akhiezer, A.Y. Gurevich, K.V. Vodenko, etc.

The theoretical basis includes theoretical settings of the understanding (*Verstehen*) sociology of M. Weber, which is predetermined by culturological aspects of the research idea. The authors also use the concepts of structural functionalism (T. Parsons and N. Luhmann) and neo-institutionalism (D. North), which allow formatting the theoretical construct of feedback between the institute of culture that are basic for the Russian society and modernizing practices of the innovational economy (Weber 2014).

2 Materials and Methods

The specifics of the national socioeconomic and political model were fully viewed in the neo-institutional theory, within which institutional matrices were defined as complex sociocultural systems related to climate and space. That's why for the Russian institutionalists T.I. Zaslavskaya, O.E. Bessonova, S.G. Kirdina, R.M. Nureev, Y.V. Latov, O.I. Ananyina, et al. (Kirdina 2014), who work in a wide interdisciplinary specter of sciences at the edge of sociology, social philosophy, history, economics, and theory of culture, the most actual is systemic analysis of basic institutes that have existed over a long period and determined various spheres of life of the modern Russian society.

Methodological achievements of the above authors interact with classic and modern works of the Western scholars: K. Marx, F. Engels. M. Weber, E. Durkheim, D. Zilberman, D North, K. Polanyi, etc. Thus, for example, the basic institutes, viewed within the “ X, Y —theory” by S.G. Kirdina, possess:

- (1) Mutual complementarity, which supposes presence of two (X, Y) matrices in each system, presented in the configuration “dominancy—complementarity”
- (2) Camouflage capabilities, which result in basic institutional matrices’ preserving their qualities, changing names, and adapting them to various stages
- (3) Patterns of “superformations” (X, Y), description of which is not limited by frameworks of the Marxist formation approach but rather supplements it (Kirdina 2014)

Thus, our research views ideological foundations of creation of the Russian capitalism that followed the downfall the Soviet communist project, which, finding itself in a time lag of delayed development, continues to be behind the leading countries of the West.

Viewing the potential of the modern Russian society in view of symbolic and cultural capital inherited from the former states, of which the Russian Federation is a successor, it is possible to see that foreground is occupied by the problem of combination of traditional cultural resources of the USSR and the Russian empire, as well as the problem of objective contradictions between the previous “formations.” That’s why we deem it efficient to instrumentalize the Hegel notion “taking off” (*Aufheben*) as applied to the modern Russian society, which reproduces in a “taken off” form certain structural aspects of sociocultural structure peculiar for the USSR and the prerevolutionary Russian Empire. Thus, for example, the Soviet heritage led to the modern Russia’s scientific and technical and military potential, as well as the experience of the largest scientific and innovational breakthrough, which was however performed under the conditions of a repressive and authoritarian regime for the price of slow development of civil institutes.

At that, due to impossibility for exploiting the former communist ideology as a system of morality, there have been conservative studies trying to revive and implement the “traditional,” mainly religious, values of the recognized confessions (Orthodox, Islam, Buddhism). In its turn, it leads to opposition from secular and atheistic forces which see the authorities’ implementing morality as a threat to development of a civil society. Besides, while analyzing the spiritual and moral values of the Russian society, it is necessary to take into account multiple influences of several traditional confessions, not limiting to the influence of only one of them.

3 Results

It was the privatization of 1990s, performed on the basis of authority of postcommunist elites, which led to the situation at which the institutes of business, power, and management are not yet divided and still function according to the principle of syncretic structures—as compared to the theory and practice of the Western capitalism. “Power-ownership” is viewed in Russia as a sub-institute of a hybrid type, in which the “leading role belongs to the officials who exploit the resources of state capital and to the businessmen who possess private capital” (Chernykh and Iskenderova 2015). At that, the existing system still has some problems of legitimacy in the sphere of distribution of private property in the country, which cannot but reflect on the population’s treatment of the authority institutes.

A special role of the state in the Russian society, close attention or totalitarian control, which could be viewed in the Marxist terms of “Asian dominance” led to such Russian terms as “gosudarstvennik” (an advocate of a strong state). “The dominating role of the state in distributive relations is proved by the fact that out of 143.3 million population of the RF only 52.9% are economically active, and 17.8% are involved in the sphere of material production. If the latter indicator is approximated to 20%, a direct or indirect source of consumption for at least 80% of the Russian population is the state budget” (Sheregi 2015). Negative features of state’s

domination, analyzed by F. Sheregi, prove that this system forms very parasitical settings with the youth and hinders the development of economic consciousness necessary for working in the competitive global environment.

Such state of affairs shows incomplete transition to the civil (bourgeois) society, in which a full-scale middle class can form. At that, most of Russian citizens still consider themselves subjects to the public authorities. “Tough character and rigidity of the management system and its incapability to react to current changes due to domination of “top-down” impulses with weakness of “bottom-up” feedback” (Kirdina 2014). A large part of the country’s citizens still sees the state as a source for solving any socioeconomic problems, neglecting their own political subjectivity.

Obviously, specifics of state management in the sphere of economy are influenced by the “contradiction between the liberal theory and the national practices of idiocratic dominance.” Thus, archaic forms of power are reproduced, which contradict the declared principles of development of the civil society. Thus, modern researchers note the inclination of the whole social system to “transform any social project into constitutive components of the ideology, coming to “Moscow—a third Rome”, which influences the specifics of the modern thought on the society determined by typological characteristics of authority discourse” (Kazakova 2013). As a result, the system is peculiar for increased ideologization of decisions in the sphere of culture management which is dependent on regulation of the level of anti-West rhetoric.

It’s quite possible that the current authorities, which are a successor of the consolidated international movement that destroyed the USSR, do not have strength to answer the question—what is to be done with so-called “Western” theoretical standards and practical recipes of development of socioeconomic and political character?

4 Discussion

Perspectives of social and technological modernization of the Russian society lie in the sphere of realization of the ordoliberal project which supposes the vector of innovational development at which public authorities provide more freedom for individuals and private business, thus ensuring higher control over the sector of high technologies related to the national security. At that, the ordoliberal project, as a dictate of law with provision of a wide specter of guarantees of civil rights, should be implemented without damaging the cultural originality of peoples of Russia—for culture is an important conductor of managerial decisions in the sphere of economy. It is necessary to switch cultural and ideological potential of the basic institutes of the Russian society for the purpose of intensification of the Russian science’s development.

Thus, for example, diversity of cultural and ideological patterns of Russia is in the focus of Russian social philosophers—both “Slavophiles” and “Westerners.”

There have always been a certain openness of Russian spiritual culture and representatives of intelligence to diverse and Western influences of positivist and conservative and romantic character (Weber 2014). Thus, it is necessary to take into account the succession of certain ideological attitudes which are peculiar for public consciousness of most Russians and are preserved in the Soviet and post-Soviet periods of sociopolitical development of the country.

That's why it is possible to expect the growth of influence of institutes of civil society, which will work in the sphere in economy and legal culture. A large role in transformation of the ideological patterns of the Russian economic and political culture belongs to self-sufficiency of citizens. Thus, Russian researchers state that "self-sufficient" Russians are not a social periphery or marginal group but "a large and growing group that expresses a trend for formation of independent and active determinant in society" (Gorshkov and Sedova 2015). The above tendency could be viewed as a significant precondition of transformation of the ideological patterns of Russian economic and political culture in favor of increase of settings for private initiative and large political subjectivity—especially, among the youth.

5 Conclusions

Ideological foundations of functioning of the Russian society and basic institutes of culture interact with the leading economic practices. That's why formation of the national socioeconomic and political model depends on cultural and ideological patterns rooted in consciousness of most citizens. The system still lacks legitimacy in the sphere of distribution of private property, as most population still deem the results of privatization as unfair. The state still has a dominating role in economy and politics, which hinders development of the institutes of the civil society and complicates the process of organization of the civil control. At that, the researchers note that there has been qualitative growth of "self-sufficient" Russians who do not rely on the state in solving their own socioeconomic проблем. Despite the trends for conservatism of the political discourse of "traditional" values, the Russian society, as a system, is very open to the Western intellectual and technological influences.

Thus, perspectives of development of the national socioeconomic and political model lie in the sphere of harmonization of the basic institutional practices on the basis of creating optimal conditions for technological modernization of Russia which suppose expansion of the sphere of action of the institutes of civil society.

Acknowledgment This chapter was prepared within the grant of the President of the Russian Federation for state support for young Russian scholars—doctors of science—on the topic "Cultural and ideological foundations for formation of the national model of regulation of socioeconomic and scientific and innovational activities" (MD-651.2017.6).

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Approaches of Russian Companies in the Textile Industry to Production Organization: Features and Opportunities for Innovative Development

Marianna Santalova, Irina Fatyanova, Ksenia Sadykova, Ekaterina Makhnovskaya, and Evgeny Rodionov

Abstract The article examines the model of organization of the textile business in Russia and identifies their characteristics and factors that determine its development and strength and weaknesses of the models of organization and management of the activities of Russian textile enterprises.

1 Introduction

In accordance with the “Strategy of development of light industry of Russia until 2020” in the second phase of development, which began in 2013, the textile industry had to start in the stabilization phase, characterized by steady growth and technical reequipping and modernization of enterprises (Order of Industry and Trade 2009).

However, the implementation of selected activities impedes factors immanent in the industry:

- High commodity dependence of enterprises due to the climatic conditions of the country that are not suitable for growing most crops used as raw material in the industry and multiple cuts (in some cases, termination) of the supply of raw materials (primarily for the cotton industry) from the countries of the USSR.
- Low competitiveness of Russian companies, determined by their dependence on expensive imported raw materials supplies and aggressive competition policy of foreign companies operating in the Russian market. Streams of cheap foreign

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goods and counterfeit products reduce the effectiveness of price competition and force of the Russian companies to work with minimum profitability, or, more often, at a loss.

- Features of the Russian market of textile products: small volume segments of the market with effective demand, a narrow range of the same type of product in the majority of producers who are forced for that reason to work on a limited number of market segments, and relatively low popularity of Russian companies, a small number of popular brands. As a result, foreign companies dominate the market. In 2015, the share of imports in the sector reaches 75–90% (Statistical Yearbook 2015).
- High depreciation of fixed assets and the acute shortage of working capital. The abovementioned factors negate the investment attractiveness of the industry.
- Low productivity and traditionally low level of innovation activity in the industry. As noted in Filimonova et al. (2015), “. . .innovation in the textile industry, even with a high degree of the changes are generally not based on fundamental scientific knowledge. Much of this innovation lies in the field of product policy and is determined by the methodology of demand creation and sales promotion” (FoSTIS).

The Russian market is still on the range of 5–8% of the total world market (Statistical Yearbook 2015). The limited market space is forcing companies to implement the strategy of “price competition,” minimizing the cost of production and reducing its quality. At the same time, the capacity of most companies’ prolongation of this policy is almost exhausted. In the absence of practice of the development of effective business processes, competent marketing and sales strategy in the conditions of uncoordinated activity occurs overstock of manufacturers market the same type of products, accompanied by a fall in profits and an increase in stocks of finished goods in warehouses.

2 Materials and Methods

- Analysis of the Russian textile industry revealed its following features:
- High concentration of players in the market segments. The cotton subsector in the ten largest companies account for 33.7% of the volume of production, in the wool subsector eight enterprises; 55.6%, in linen subsector by five enterprises; 57%, in the silk subsector of four businesses; and 57% of gross output (Union of Entrepreneurs of Textile and Light Industry 2017).
- Strengthening the vertical and horizontal integration. In the market for a long time, there is a tendency to create large integrated corporate structures, forming a complete production cycle from the cultivation and processing of raw materials to finished products, sewing in order to save on transit costs, increase range, and provide a high rate of acceptance of the order to the receipt of goods at retail.

These processes are accompanied by the development of the tolling schemes and outsourcing (Rada et al. 2014).

- High share of shadow business. Industry is characterized by a high share of shadow business, represented mainly by small companies. The main segment of the shadow business—the production of ready-made garments (Filimonova et al. 2014).
- Minor technical modernization. Big companies spend a small technical modernization of production facilities. The main share of the purchased equipment—used imported machinery.
- Create and promote own brands. Market leaders are investing in the promotion of its own brands. However, under these marks, as noted above, the same type sold products presented a limited number of market segments.
- Active price competition and dumping. The dominant competitive strategy of Russian textile enterprises is a pricing strategy. Dumping has become a traditional phenomenon in the market, almost the only sales model in the arsenal of many Russian enterprises.
- Low profitability or negative performance of enterprises. Russian companies mostly operate at the limit of their financial capabilities. Some of them cost a ruble sales exceed 1 ruble. Some businesses sell their products at dumping prices below cost in an effort to stay on the market.

Currently, the textile industry in Russia operates about 14,500 companies and about 20,000 entrepreneurs (Statistical Yearbook 2015).

Analysis of the major players in the textile industry revealed several basic models of production and business:

The model of a full cycle—presupposes that the textile industry full production cycle: spinning—weaving—finishing—sewing of finished products, performed mainly on its own production and processing base.

This model is a traditional in the Russian textile industry market. The main factors of the high costs of the industry should be noted:

- Specialization of enterprises (holdings). Most of the enterprises focused its activities in one segment of the cotton industry—household fabric (printed calico and chintz, toweling group, flannel, etc.), which is characterized by a high degree of saturation of the market demand, fierce competition, and an active dumping on the part of the majority of manufacturers.
- High energy costs [the highest energy costs fall on the stage of spinning (the share of electricity in the cost structure 22–28%), weaving (12%), the lowest power consumption exists in the finishing industry (6%)].
- High transportation costs of raw materials and semifinished products to enterprises involved in different stages of the production process.
- Significant costs for the modernization of the extremely outdated industrial and technological base.
- Expansion of geography of activity of the enterprises.

In order to minimize transit costs and reduce dependence on suppliers of raw materials and the main categories of businesses semis strive to create a full production cycle.

In this case, they integrate the assets, or on the basis of the steps of the production cycle (one entity performs the steps of spinning and weaving; the other, finishing; and third, sewing), or on the principle of complementarity of production stages. In the latter case, the entities of the holding company independently perform the entire process of production or its main stages (such as spinning, weaving, finishing). Thus, outsourcing may be used.

- The application of this model allows textile businesses:
 - To minimize the production costs of the organization
 - To cover an increasing number of market segments, designed for the mass market, by ensuring the quality of products and price competition
 - To ensure that demand for traditional products (bed linen, tablecloths, towels, and cloth for their production) mainly in the low-cost end of the market

The key success factors of the complete cycle of the model are:

- Free access to sources of raw materials
- The presence of the required amount of professional staff
- The ability to compete or through high-quality products, either due to low prices

Typical examples of companies (holding companies), implementing a model of a full cycle: KBC “Shuiskys chintz,” “Tryokhgornaya manufactory”

Model combining is based on the combination, combining the independent production and using their own equipment in the individual stages of the production cycle with the breeding of a number of processes to other companies.

This model is characterized by, as a rule, smaller-sized companies (holding companies) that do not have the resources and capacity to build and maintain a model of a full cycle of textile production. A distinctive feature of this model is the diversification of enterprise activity, avoiding the rigid specialization.

The application of this model for the organization and conduct of operations enables enterprise (holdings) sector to:

- Minimize the cost of creating and maintaining a full-cycle production and capital and to focus efforts on priority areas.
- Strengthen its presence in certain market segments by increasing the production volumes of the same type of products a large number of industries.
- Quickly develop new markets through the issuance of new products, including the contractor companies with the necessary capacity.
- Meet the demand for traditional products (bed linen, tablecloths, towels, and cloth for their production), while forging new kinds of products without significant costs to run and maintain the relevant capacity.

The key success factors combine models are:

- Free access to raw materials
- Loyalty and strength of relationships with suppliers of raw materials and semi-finished products used in production processes
- Loyalty of the enterprises-contractors

Typical examples of companies that implement the alignment model: Alliance “Russian Textile” TX “Yakovlevsky,” “Guta-textiles,” “Gorodishchenskaya finishing factory,” “Big Ivanovo Manufacture,” “Furmanovsky PTF number 2,” and “Corporation Cheboksary KBC.”

Mediation model is based on the development of mediation predominantly textile industry.

A distinctive feature of this model lies in the fact that the company focuses on the implementation and not have their own production base.

- The application of this business model allows enterprises (holdings) to:
 - Refuse the creation and maintenance of resource-industrial complex, thus minimizing the costs of fixed and working capital.
 - Respond quickly to changes in market demand, placing orders for the release of certain finished goods on conformity of production.
 - Be more mobile and flexible on the market compared with other companies in the absence of the need to contain the production facilities, the characteristics of which may restrict the release of new products.
 - Develop partnerships with foreign producers of raw materials or finished products.

Key success factors of the mediation model:

- Well-developed sales network and broad geography of activity
- An excellent knowledge of market needs
- Organized system of relations with contractors

Typical examples of companies with this model of organization and conduct of activities: the company “Krayteks.”

Each of the models has advantages and disadvantages, the main of which are shown in Table 1.

As shown above, the Russian textile enterprises implement mainly alignment model. Marked enterprises, regardless of the model type, are large, mostly vertically integrated holding companies that combine enterprise specializing in the production of various types of products. Most of them work in one of the subsectors of the textile industry—cotton. Exclusively different company “Yakovlevsky Flax” until recently, specializing in the production of linen products.

However, since 2001, included in the union, the company “Yakovlevskaya Manufacture” began to produce cotton cloth. The enterprises present in several subsectors of industry, a little bit. These include, first and foremost, the company “Guta Textile” (linen, cotton, and wool products) and the company “Alliance” Russian Textile “(cotton production and the production of silk products).

Table 1 Strengths and weaknesses of the models of organization and management of the activities of Russian textile enterprises

Character traits	The model of a full cycle	Model combining	Mediation model
Strengths	<ul style="list-style-type: none"> – The efficiency of enterprises through the coordination of activities of all departments – A high level of control – Reduction of transit and production costs – Low dependence on foreign performers and suppliers 	<ul style="list-style-type: none"> – Minimize the costs of building and maintaining a complete production cycle – The rejection of rigid specialization and a more rapid response to changing market needs – The effectiveness of activities of the holding by synchronizing the work of its constituent enterprises – Additional benefits from economies of scale and diversification of activities – Increased companies mobility – The possibility to specialize in the most advanced technological processes with high added value 	<ul style="list-style-type: none"> – Responsiveness to changing consumer preferences – Flexibility, mobility of the company in the market – Minimize the costs of fixed and working capital – The absence of a significant investment for the modernization – A simple situation with the selection of personnel for which there is no such tough qualification requirements
Weak sides	<ul style="list-style-type: none"> – The high cost of maintenance of staff and the production base of enterprises – Downtime with overcapacity problems – The need for the content of all of the technological chain of production in the conditions of growth of specialization in one stage of the production cycle – Specialization of activities and inflexible in responding to changing market needs 	<ul style="list-style-type: none"> – A lesser degree of control over the activities not included in the production company – Reliance on suppliers of raw materials and components suppliers 	<ul style="list-style-type: none"> – High dependence on the activities of contractors – Complexity while minimizing costs and establishing a competitive price due to high transit costs – The inability to control the quality of products purchased – Inability to influence decisions strategic and tactical decisions of enterprise counterparty

Presented enterprises (holdings) occupy leading positions in a number of market segments. Of these, there are three large companies: Alliance “Russian Textile,” TX “Yakovlevsky,” and “Shuiskys chintz” are represented in the largest number of markets niches.

3 Results

The research of activity of the largest Russian textile companies showed that at the moment when there are real benefits management algorithms, the existing models of organization and management of enterprises are not entirely effective and still retain a tendency to nonuniformity of the conditions of competition of domestic and foreign goods (Santalova et al. 2013).

The plans of the largest companies (holding companies) of the textile sector include the concentration of resources in a more high-tech stages of the production cycle, finishing and sewing of finished goods, and giving the greatest increase in value-added and the development of the sales network.

In this situation, it is becoming urgent task of searching for relevant technologies. According to statistics, the number of established technologies in the industry is 1.1% of the total number of new technologies in the manufacturing sector, while none of these technologies is not among the fundamentally new development (Statistical Yearbook 2015). Manufacturing is developing on the basis of development of the past decades and borrowed technologies; the main potential is already exhausted.

In conditions of chronic underfunding of the industry and its low investment attractiveness, the innovative activity of Russian companies is extremely limited.

Considered domestic problems, cheap import, aggression of foreign competitors, and the informal sector reduce the commercial efficiency and make the enterprises, on the one hand, to unite (the development of integration processes in the industry) and, on the other, to search for new business models in the current environment (Santalova et al. 2014).

Modernization of business models should take place within the framework of the strategic program of development of the industry. Note that the strategy involves the industry's transition to the innovative type of development (Order of Industry and Trade 2009).

In these circumstances, it seems appropriate to retain the orientation of the Russian textile enterprises on the model, which implies a combination of its own production on the individual process stages from the breeding of a number of processes to other companies (combining model).

4 Discussion

The study was conducted within the framework of the development of the textile industry in Russia and was discussed with the leaders of the industry, on the scientific and practical conferences on the country.

Acknowledgment Modernization and implementation of organizational and managerial innovation and adaptation of existing models under real competitive situation may allow Russian

companies to become involved in the technological modernization of the economy of the textile and light industry.

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System of State Order for Agricultural Products in Russia and Foreign Countries

Irina P. Chupina

Abstract This chapter views foreign experience of state order for agricultural products. Under the conditions of Russia's joining the WTO, it is necessary to develop relations with foreign partners, based on the experience of foreign countries.

In terms of solution of state order for agricultural products, Russia should pay attention to experience of the countries in which agriculture is under the protection of the state. These countries include Canada, Australia, and New Zealand.

Using the competition methods of state purchases on the electronic basis and performing strict financial control, regulated by the corresponding law, with close cooperation at the level of inter-governmental agreements, these countries take up leading positions in the world in large-scale closed tenders. State purchases of products are performed on the basis of their own E-system.

Though these countries have general state recommendations for competition trade and contracts, each state has its normative documents for regulating state purchases. State purchasing organizations have to stick to generally accepted principles (openness and effectiveness of competition, careful accounting, and achievement of high competition level of the manufactured products).

Dependence of Australia and New Zealand's economies from transnational monopolies does not allow for realization of the mechanism of state purchases, apart from agricultural products. Still, agrarian sector also has to fight the dumping from foreign suppliers—especially, when functioning in the WTO. Such cases are tracked by the government agencies that perform control over the local suppliers' getting fair possibilities for participation in the competition. This requirement especially concerns the states that are less developed than other territories.

The procedure of obtaining the status of the authorized supplier is somewhat difficult. This requires passing three departments: management of tenders and contracts of the Ministry of Finance and administration of the association. Evaluation of suppliers is performed according to the following criteria: favorable

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reviews from clients; correspondence of goods and services to the coordinated standards; criteria of sectorial development (for information technologies and equipment); financial sustainability; correspondence to requirements of state policy; observation of the rules of the authorized supplier status.

Only after these so-called tests, the supplier acquires a right for conclusion of a contract with the state buyer—under the conditions of his sustainable financial state. At that, he is evaluated by financial analysts of the government on the basis of Australian law.

It should be noted that the given procedure of selection of authorized suppliers from agricultural corporations could be used in Russia as well. This requires observation of a special condition—suppliers should be selected from agricultural cooperatives of civilized type which protects the agrarians' interest.

In Australia and New Zealand, large attention is paid to development of the system of economic security, which includes the following elements of planning: determination of specific goals of environment protection; list of ecological issues and influences related to execution of contracted works; documents on the measures taken subject to approval by corresponding department and conforming to the requirements of tender documents; precise specification of responsibility of contractor and sub-contractors in the sphere of environment protection.

Purchase of products for state needs is performed under the conditions of maximal openness—in particular, by invitation to participate in tenders via e-mail. The grain market of Australia has a transparent system of relations between manufacturers and consumers that is based on rather stable conditions of their economic interaction: grain brokers get only \$10 from 1 t of grain, transportation of grain costs \$20, and storage costs about \$30–40/t. Farmers get about \$300/t. Australian grain market has active associations of grain manufacturers and their associations. The management has its own grain storages and grain terminals in ports; it buys wheat from farmers for the guaranteed price and sells in the foreign market. Accumulations that appear during good situation in the market are spent for covering the losses during reduction of prices in the global market, as compared to guaranteed price. The recent government of Australia made a decision to expand the market and improve the competitive environment. At present, the internal Australian market is dominated by three large grain operators—Grain Corp, Viterra, and CBH Group. They possess a larger part of 20 grain export ports and grain elevators (Miloserdov and Miloserdov 2012).

At present, due to frequent natural cataclysms, economic crisis, and growth of population, most countries face the important problem of increase of state stock of grain, including its insurance fund—which has been practiced in some foreign countries. For example, in the EU and China they reach 20%, in Canada—more than 40%, and in the USA the volume of the reserve grain fund is set by the state in the amount of 12–15% of gross crop of forage grain and 18–20% of wheat grain.

The following should be noted from the American experience. The USA has centralized system of purchases. The purchases are made by the General Services Administration. Based on the application from the ministries, the Administration organizes wholesale purchases, using competition procedures, especially tenders.

The goods are preserved at Administration storages and then sold to customers for wholesale price with a small profit spent for sustaining the work of the Administration. The state offers a choice of more than four million items, which are purchased by the Administration on a centralized basis under the condition of reduction of expenses for conduct of purchase procedures. On average, the Administration's expenses for conduct of purchases constitute 2% of general expenses for their execution.

An important role belongs to monitoring of federal purchases, execution of functions of which is possible by management of the federal purchase policy. At that, coordination in the sphere of policy is conducted by the Council for regulation of federal purchases. A legislative basis for the system of state purchases in the USA is rules of purchases (Minaeva and Sidorov 2007).

The main principles of managing the system of state purchases in the USA are the following: achievement of justice (equal participation of contractors in competition for state order); observation of fairness and fighting corruption with state purchases; economy and effectiveness (provision of goods quality during their purchase, low prices, and minimal expenses).

The USA also uses E-technologies for provision of business activities, including e-mail, which allow disregarding the paper document turnover. This reduces expenses for execution of purchase procedures and reduces the terms of operations. Online auctions are used for the contracts up to \$100,000. At that, information resources provide realization of the above principles, showing the publicity of the purchases of products for state needs with observation of equality and openness of access to information for the concluded contracts (Novikov 2005).

The main advantages of American information system include the following: provision of quickness and precision of data given to the Congress, President, federal departments, and private sector on the state of affairs in contractual system for purchase of products for state needs; obtaining data for federal purchases and needs in resources. Drawbacks of the system: incomplete provision of data by certain federal departments; insufficient activity of use of information resources by authorities and population; insufficient information compatibility between the system's links.

Based on the EU experience, peculiarities of organization of state purchases consist in the following:

- (1) Placement of state orders is regulated depending on volumes for three levels of law—international, EU, and national;
- (2) During conclusion of contracts for supply of products for state and public needs, social goals are taken into account realized in social programs (proper selection of suppliers, requirements for conditions of work, exclusion of suppliers that do not correspond to the law, and use of totality of social criteria, including ecological)
- (3) Mandatory observation of goals of legislative character.

Experience of foreign countries shows that it is necessary to include all requirements:

- (1) Optimization of purchases for state needs with minimal expenses for this process.
- (2) Provision of equal terms of competition with conclusion of contract
- (3) Observation of publicity requirements
- (4) Execution of requirements of just and open business
- (5) Provision of help to small and medium enterprises in obtaining government orders
- (6) Implementing the double system of control over the actions of organizations that plan state purchases of agricultural products with different schemes of realization of contracts, which allows fighting the corruption from agricultural manufacturers and their cooperatives, as well as civil councils of rural communities, with the help of the department of agrarian policy in the Russian State Duma.

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Problems of Realization of Public–Private Partnership with Participation of Corporate Holding Structures

Yulia V. Veis

Abstract Realization of perspective direction of investment activities under the conditions of crisis economy is a possibility for increase of budget revenues and improvement of socioeconomic situation of the country. A significant role in this process belongs to corporate holding structures which possess a potential of development and possibility for accumulation of investment resources. The article views peculiarities of participation of these structures in realization of the program of public–private partnership. The analysis of main problems that emerge during realization of public–private and private-public partnership with participation of corporate holding structures is performed.

1 Problem Setting

Development of corporate holding structures requires constant improvement of the management mechanism and increase of transparency of investment and financial and economic activities for provision of owners and potential investors with maximal information.

Modern theory of management of Russia is aimed at activation of formation of public–private partnership. Primarily, development of public–private partnership was performed within the development of the investment fund and projects financed by it. However, there were problems—insufficient flexibility and attractiveness for private investors under the conditions of crisis economy. Lack of clear treatment of public–private partnership and legal base allow its wide interpretation. Lack of clarity of determination of the role of state and of the mechanism of stimulation of private investors can level out positive effect for participants.

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2 Analysis of Recent Achievements and Publications

Problems and treatments of public–private partnership were studied by Amunts (2005), Feoktistov (2011), and Trachuk (2009). Drawbacks include width and range of the offered treatments. On the other hand, Filchenkov (2005) brings public–private partnership down to the level of public–private partnership. Lack of comprehensive treatment and definition—according to Spiridonov (2010) and Siburina (2011)—are obstacles for its development and creation of universal mechanism of participants' cooperation. The problems of realization of institutional approach to public–private partnership were studied by Varnavsky (2012), Deryabina (2012), and Maximov (2012).

Another problem which reduces effect for partnership participants is imperfection of the legal base. According to N.Y. Psareva, practical realization of activities of holding structures within realization of public–private partnership is complicated by imperfection of the federal laws (Psareva 2003).

3 The Purpose of the Research

The purpose of the research is to analyze main problems which emerge during realization of public–private partnership with corporate holding structures and form the model of synergetic effect which appears during realization of partnership relations by the example of experience of Samara Oblast.

4 Main Results of the Research

Foreign practice of realization of public–private partnership has two forms: contract form of partnership, based on conclusion of contracts within realization of a project, and “political” form with prevailing consultative role of the state.

There is no such division in Russia. The main principle of relations, formed during realization of public–private partnership, is co-financing during realization of investment projects. Most often, the state takes up a role of guarantor of financial and material provision in these relations.

As a rule, public–private partnership has a contest mechanism of participants' selection. A stimulus for formation of partnership relations should be the mechanism of formation of fair contracts and terms of division of risks and expenses. Modern scientists distinguish public–private partnership, the leading role in which belongs to the state which takes up the main financial load for realization of a project, and private-public partnership in which the state takes up the function of organizer with support for projects by corresponding state programs and concessional lending. Unstable state of the economy and dependence on prices for raw

materials under the conditions of budget deficit lead to necessity for accumulation of private investment resources for realization of top-priority and socially important investment projects. Small and medium business cannot become an active participant of this process. Corporate holding structures may become a main supplier.

The mechanism of formation of growth of investment resources of holding structure is related to centralization of their distribution, allowing viewing and selecting optimal variants of investing on the basis of interests of not separate departments but the whole holding as a single system. This allows maximizing net cost from investment projects and minimizing expenses. Besides, corporate holding structures have mechanisms of optimization of resource flows and minimization of taxation.

As for practical experience of realization of development of public–private partnership in Samara Oblast, research was started in the late 1990s. By 2006, a strategy of development of Samara Oblast until 2020 was passed, which included the elements of this approach. Still, this approach was realized in practice. Perspectives of development of this process became clearer with passing of the law of Samara Oblast No. 72-GD “Regarding participation of Samara Oblast in public–private partnership” dated July 2, 2010, with changes dated January 13, 2014—active practical realization began. The center of development of public–private partnership was created in the region. At present, Samara Oblast is ranked 25th of 83 positions, according to the ranking “PPP-Start” (Ranking of Russian regions “PPP-START” 2013). This ranking evaluates readiness of various subjects of the RF for participation in projects for development of the objects of public infrastructure with attraction of private investors on the basis of principles of public–private partnership. The region has enough potential for development of partnership relations (Ranking of Russian regions “PPP-START” 2013).

The main principles of participation of Samara Oblast in the projects of public–private partnership are (Decree of the Government of Samara Oblast dated June 24, 2009, No. 291):

- Contract basis of agreement parties relations
- Direction at increase of quality of state services and quality of life of population of Samara Oblast
- Effective use of assets of regional budget; possession, use, and management of property owned by the Oblast
- Equality and observation of rights and interests of the parties
- Strict execution liabilities taken by the parties
- Conscientious and mutually profitable cooperation of the parties
- Accessibility of informational resource on the projects of public–private partnership for economic subjects of any organizational and legal forms and forms of ownership
- Distribution of risks as a guarantee of execution of liabilities taken by the parties of the agreements on public–private partnership

The Ranking's methodology is based on the model of "ideal public partner" (Shevelkina 2017), which possesses a certain set of characteristics—factors, namely:

1. Formation of optimal organizational structure of public–private partnership
2. Creation of legal base for supporting the development of public–private partnership at the regional level
3. Accumulation of practical experience of realization of projects within cooperation of the state with private investors
4. Increase of investment activities of the region for the purpose of attraction of institutional investors

The main members of partnership relations in Samara Oblast are the following corporate holding structures:

1. AvtoVAZ OJSC
2. FSK EES OJSC—main power transmission lines of Volga
3. Rosneft OJSC—structural division Syzran NPZ OJSC
4. Kuybyshev Azot OJSC
5. Plastik OJSC
6. ALKOA
7. Corporate structure "Brewing company Baltika department 'Baltika Samara'"

Within the realization of public–private partnership in the Oblast, there has been realized reconstruction of switching station Levoberezhnaya in Tolyatti (2009–2011, within cooperation with the department of FSK EES OJSC—main power transmission lines of Volga). At present, there is a project of construction and exploitation of air terminal complex of Kurumoch International Airport: it is realized by the Aeroporty Regionov holding (a part of Renova). The contractor is Kompakt CJSC (St. Petersburg). According to evaluations, total volume of investments into development of Kurumoch infrastructure will constitute more than RUB 12 billion (Markin 2013).

At present, within realization of public–private partnership, it is planned to utilize solid waste (negotiations with National Ecological Operator OJSC—specialized subsidiary of state corporation Rostekh) ("National ecological operator" to utilize... 2014) and construct a cardiac surgery center (the company "Modern Medical Technologies" prepared preliminary draft of the building; construction of the center in Samara will be conducted by the company "Modern Medical Technologies") (Samara starts construction of the Center... 2016); also, April 2014 saw the contest for right of conclusion of concessional agreement in the healthcare sphere within the project for construction and exploitation of separate building of the Center of extracorporeal haemocorrection and clinical transfusiology in Samara (winner—FARM SKD LLC) (Nominations and winners... 2015).

For corporate structures, participation in partnership relations means access to previously inaccessible spheres with minimal risks. Analysis of experience of

participation of companies is that partnership relations showed many problems of both organizational and systemic characters:

1. Formation of a single center for development of public–private partnership does not fully cover the process of realization of projects, complicates coordination, and increases risks related to realization of projects
2. Insufficient elaboration of legal base at the federal and regional levels (contradiction of legal acts, weak elaboration of stages, and methodological imperfection of legal base)
3. Corruption in access to objects
4. Long terms of competitions, coordination of investors' announcements, and coordination of project documentation (experience of Samara Oblast showed that the stage of pre-project preparation constitutes 2–3 years)
5. Risk of state's participation as a partner (non-execution by state of liabilities, sequestering of projects' budgets in the share of state financing, extension of realization terms, impossibility for bringing to responsibility for the taken liabilities)
6. Closeness of informational field of public–private partnership (insufficient process of informing the potential investors on advantages of participation in partnership relations and provided guarantees)
7. Difficulties with the determination of ownership rights for objects of state and municipal property (the Western experience showed effectiveness of realization of partnership relations in the sphere of housing and communal infrastructure, but this direction is not developed in Samara Oblast)

These problems bring ambiguity into the declared positive effect of participation in public–private partnership. On the one hand, the state realizes significant and top-priority projects, saving 10–30% of budget assets by means of attraction of private investors (Petrenko 2016). On the other hand, under the conditions of crisis, use of investment resources of industrial holdings can slow down their development and reduce profitability of activities, decreasing investment attractiveness and financial sustainability. Solving these problems will allow activating the processes of realization of partnership relations, increase investment attractiveness of projects for large corporate structures, and will allow realization of top-priority directions of development of Russia on the whole and Samara Oblast in particular.

5 Conclusions

1. Modern conditions of economic development make the state to activate partnership relations with private business for realization of top-priority and socially important projects.
2. Development of private–public partnership under the conditions of budget deficit will allow attracting investment resources of private business. The main

suppliers of these resources are corporate holding structures. The state takes up functions of organizer and guarantor of investment project.

3. Analysis of practical experience of realization of public–private partnership with participation of corporate holding structures in Samara Oblast determined a large number of problems of systemic and organizational character which can reduce the effect from partnership relations both for the state and for private structures which are project members.
4. Solving these problems will allow increasing investment attractiveness of state projects and attract large private investor into the spheres of top-priority development of the country’s economy.

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Innovations as a Basis for Marketing Strategies of Russian Oil Companies in the Conditions of Oil Prices Reduction

Elena G. Popkova, Lilia Poluyufta, Yulia Beshanova, Larisa V. Popova, and Elena Kolesnikova

Abstract The purpose of the article is to verify this hypothesis and study innovational components of marketing strategies of Russian oil companies in the conditions of oil prices reduction. Methodological basis of this work includes general scientific methods of research. In particular, the authors use the method of regression and correlation analysis, adapted method of evaluation of effectiveness, method of analysis of causal connections, and method of problem and systemic analysis, synthesis, induction, deduction, and formalization. The authors perform the analysis of influence of the level of global oil prices on innovational activity of Russian oil companies, evaluate effectiveness of current marketing strategies of Russian oil companies in the conditions of world oil prices reduction, and develop framework perspective innovations-oriented marketing strategy for Russian oil companies in the conditions of oil prices reduction.

JEL Codes M31 • O32

1 Introduction

Modern Russia is presented in the world market as an exporter of resources, based on products of the oil industry. In addition to that, the oil industry plays an important role in the formation of Russian GDP and revenues into state budget.

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_57

That's why successfulness of foreign economic activities of Russian oil companies determines the Russian economy's capability for growth and development, as well as its position in the global economic system.

This article offers a hypothesis that the applied marketing strategies of Russian oil companies suppose their low innovational activity, which is a reason for their low effectiveness in the conditions of world reduction of oil prices. The purpose of the paper is to verify this hypothesis and to study innovational components of marketing strategies of Russian oil companies in the conditions of oil prices reduction.

2 Materials and Method

The problem of the research is well-studied in modern scientific literature. Marketing aspects of strategies of functioning and development of oil companies are fully studied from theoretical and practical points of view in multiple works of such authors as Shvarts et al. (2016), Luyombya and Bukirwa (2014), Dzhandzhugazova et al. (2015), Kravets et al. (2014), Donghong et al. (2008), etc.

Innovational component of oil companies' companies is studied in works by Nikabadi et al. (2014), Popkova et al. (2013), Skiter et al. (2015), Xuguang et al. (2011), etc. However, the performed literature review on the topic of the research showed that despite the detailed study of separate components of the set problem, it is not yet sufficiently studied.

Methodological framework of this research consists of general scientific methods of the research. In particular, during the study of influence of the level of world oil prices on Russian oil companies' innovational activity, the method of regression and correlation analysis is used.

The authors determine dependence between the share of Russian oil companies that conduct innovations (y_1), expenditures of Russian oil companies on technological innovations (y_2), volume of innovational products, manufactured by Russian oil companies (y_3), and price for Urals oil Urals (x) in 2011–2016.

With the help of automatized calculations in Microsoft Excel, the authors calculated the models of paired linear regression of the type $y = a + bx$, where the value of coefficient b reflects the dependence of y on x , and coefficient of correlation which characterizes closeness of connection and significance of the received regression models. For evaluation of effectiveness of marketing strategies of Russian oil companies, their net profit is compared to expenses on marketing—i.e., the following formula is used:

$$\text{Ems(oc)}_i = \text{NP(oc)}_i / \text{EM(oc)}_i \quad (1)$$

where Ems(oc) —effectiveness of oil company's marketing strategy
 NP(oc) —volume of net profit of oil company

EM(oc)—expenses for marketing activities of oil company

I—the studied year

This methodology is traditional for evaluation of effectiveness; at that, it is adapted by authors of this research for evaluation of effectiveness of Russian oil companies' marketing strategies. As the object for calculations, the largest Russian company, Lukoil PJSC, was selected, and materials of its official accounting reports for 2011–2016 were used.

3 Results

The data for complex analysis of influence of the level of world oil prices on innovational activity of Russian oil companies is given in Table 1.

Based on the data in Table 1, the following regression models are received:

- $y_1 = 4.62 + 2.57x$. This shows that with reduction of the level of Urals oil price by \$1 per barrel, the share of Russian oil companies, which conduct innovations, decreases by 2.57%. Correlation coefficient constitutes 98.64%. Therefore, connection between the studied indicators is strong and direct, and the obtained regression model is statistically significant;
- $y_2 = 6.53 - 9.06x$. This shows that with reduction of the level of Urals oil price by \$1 per barrel, expenses of Russian oil companies for technological innovations grow by RUB 9.06 million. Correlation coefficient constitutes 99.12%. Therefore, connection between the studied indicators is strong and reverse, and the obtained regression model is statistically significant;
- $y_3 = 5.89 - 1.48x$. This shows that with reduction of the level of Urals oil price by \$1 per barrel, the volume of innovational products manufactured by Russian oil companies grows by RUB 1.48 million. Correlation coefficient constitutes

Table 1 Initial data for regression and correlation analysis

Indicators	Time period (year)					
	2011	2012	2013	2014	2015	2016
Price for Urals oil, \$ per barrel (<i>x</i>)	117.7	116.68	114.38	103.88	47.95	47.34
Share of Russian oil companies conducting innovations, % (<i>y</i> ₁)	31.7	31.7	29	28.5	28.1	27.6
Expenses of Russian oil companies for technological innovations, RUB million (<i>y</i> ₂)	85,891.6	103,052	193,705	309,928	557,871	616,447
Volume of innovational products, manufactured by Russian oil companies, RUB million (<i>y</i> ₃)	93,082.1	431,537	710,827	746,368	813,542	870,489

Source: Yearly graph of Urals oil prices online (2016), Rosstat (2015)

99.36%. Therefore, connection between the studied indicators is strong and direct, and the obtained regression model is statistically significant.

The performed analysis showed that Russian oil companies show innovational activity, which decreases with reduction of world oil prices. It should be noted that despite nominal growth of expenses of Russian oil companies for technological innovations and volume of manufactured innovational products, they reduce in real expression in the studied time period, considering the inflation.

The initial data and results of evaluation of effectiveness of current marketing strategies of Russian oil companies in the conditions of world reduction of oil prices by the example of Lukoil PJSC are given in Table 2.

As is seen from the data of Table 2, net profit of Lukoil PJSC for the studied period reduced by more than 90%, from \$10,357 million in 2011 to \$856 million in 2016, which is a critical decline, taking the inflation into account. At that, expenses for marketing of Lukoil PJSC grew by 1%, constituting \$3877 million in 2016. Thus, effectiveness of the marketing strategy of Lukoil PJSC dropped from 2.71 in 2011 to a critically low level of 0.22 in 2016.

We also obtained a regression model that reflects the dependence of the level of marketing strategy effectiveness of Lukoil PJSC (y_4) on the level of Urals oil prices (x): $y_4 = 3.24 - 1.36x$. This shows that with reduction of the level of Urals oil prices by \$1 per barrel, the level of effectiveness of marketing strategy of Lukoil PJSC reduces by 1.36. Correlation coefficient constitutes 99.21%. Therefore, the connection between the studied indicators is strong and direct, and the obtained regression model is statistically significant.

Thus, it is obvious that current marketing strategies of Russian oil companies, which suppose their low innovational activity, are effective in the conditions of reduction of world oil prices. As a result of analysis of causal connections of this phenomenon, we received the following logical scheme (Fig. 1).

As is seen from Fig. 1, low innovational activity predetermines impossibility for diversification of Russian oil companies' products—they export mostly raw oil. This is a reason for inflexibility and limitation of their marketing possibilities, which, in the conditions of reduction of world oil prices, leads to reduction of

Table 2 Initial data and results of evaluation of effectiveness of current marketing strategy of Lukoil PJSC

Indicators	Time period (year)					
	2011	2012	2013	2014	2015	2016
Net profit of Lukoil PJSC, \$ million	10,357	11,004	7832	4746	1016	856
Expenses for marketing of Lukoil PJSC, \$ million	3822	3755	3849	3858	3864	3877
Effectiveness of marketing strategy of Lukoil PJSC	2.71	2.93	2.03	1.23	0.26	0.22

Source: Expenses for advertising of the largest Russian public companies (2016), Main financial indicators of Lukoil PJSC (2016)

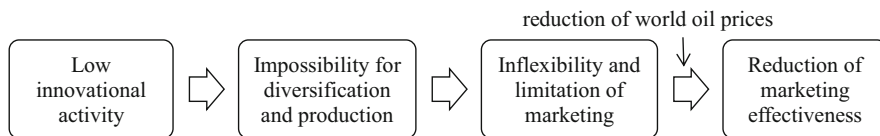


Fig. 1 Logical scheme which reflects connection between innovational activity and effectiveness of marketing strategies of Russian oil companies in the conditions of reduction of world oil prices

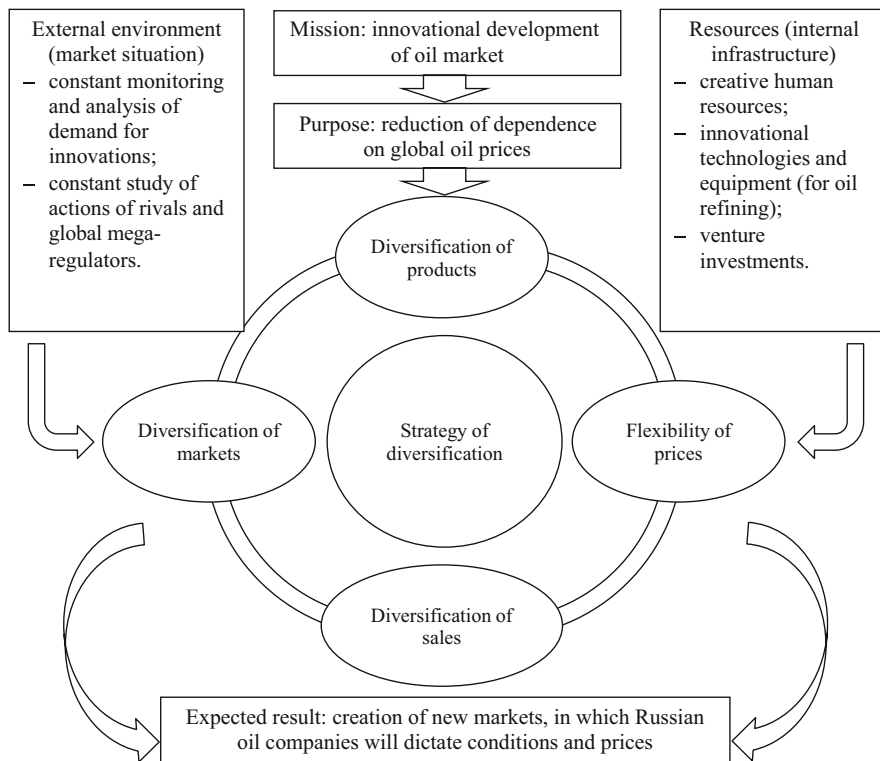


Fig. 2 Framework innovations-oriented marketing strategy for Russian oil companies in the conditions of reduction of oil prices

volume of their profit with stable marketing expenses, that is, reduction of effectiveness of their marketing strategies.

This proves the offered hypothesis. For solving this problem, we offer to use the following framework innovations-oriented marketing strategy for Russian oil companies in the conditions of reduction of oil prices (Fig. 2).

As is seen from Fig. 2, the core of the offered innovations-oriented marketing strategy for Russian oil companies in the conditions of reduction of oil prices should be diversification. As a result, new markets could be created, in which Russian oil companies will dictate conditions and prices.

4 Conclusion

The offered perspective framework innovations-oriented marketing strategy for Russian oil companies in the conditions of reduction of oil prices supposes a new approach to organization of their marketing activities, oriented not at passive observation of norms and requirements of the global society but at change of situation in the world oil markets and conquering leading positions in them. This reflects high scientific and theoretical significance of the authors' conclusions and recommendations.

It is necessary to emphasize that innovations should become a basis for marketing strategies of Russian oil companies in the conditions of reduction of oil prices. This will allow increasing effectiveness of their marketing activities and will ensure necessary conditions for growth and development of the economy of modern Russia and for strengthening of its positions in the global economy, which confirms high practical significance of the results of the performed research.

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Method of Expert Evaluation of Competing Products' Consumer Qualities

Viktor O. Moseyko, Sergei A. Korobov, and Alexey V. Tarasov

Abstract This chapter is devoted to expert evaluation of consumer qualities of competing products. Realization of the offered method requires the resource approach based on the fact that consumer qualities of the compared products are determined by these products' capability to ensure mutual influence of resources in the process of manufacture of new products. For the purpose of conduct of comparative analysis of qualitative parameters, the expert approach is offered—which is predetermined by difficulty in structuring and formalization of such tasks. The result of comparison of consumer qualities of competing products are score values of their influence level, performed by each of the six used resources (human, technical, material, information, and institutional) on the usage of all resources in the process of manufacture of new products, for cases of use of each compared product in this process.

1 Introduction

The necessity for comparing the competing products or services is a constant condition for successful functioning of subjects of entrepreneurial activities in market environment. Enterprises or separate entrepreneurs are in the process of competition. The result of this struggle is each market participant offering the high-quality products that fully satisfy the clients' needs. Comparison of one entrepreneur's product to another's motivates him for provision of competitive advantages in this product. This is achieved by constant improvement of different phases of production, reduction of various production costs, and use of innovations and new ideas. All of this makes the development of modern methods or approaches for comparison of competing products very topical.

An important aspect, which should be paid attention to during the study of the process of comparison of competing products or services, is weak structuring and formalization of corresponding tasks. Peculiar features of the process of

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comparison of consumer qualities with products (like with alternatives) are qualitative character of most variables or parameters, viewed in the process, or lack of knowledge on any dependencies between them. However, the tasks of making decisions during comparison (comparative selection) of alternatives are rather popular in practice, but means for their solution are not developed enough.

2 Materials and Methods

2.1 *Identification of Resources*

A peculiar feature of the task of decision making or selection in the process of comparing the consumer qualities with products is presence of peculiar features or qualities, accounting of which simplifies the study of formal schemes and models with specific real situations. It is obvious that adequacy of comparison of consumer qualities of compared products will depend on the number of the determined criteria that describe corresponding peculiarities and features.

On the other hand, if there are a lot of criteria, the tasks of comparison cannot be fully viewed, which is caused by certain psychological aspects during a person processing a large volume of information.

It also should be noted that the compared products might have different peculiarities and features. That's why corresponding criteria for comparison should be universal—in order to characterize competing products that differ from each other.

Such criteria should describe consumer qualities of products—that is, the features that primarily help to satisfy clients' needs. Consumers or clients (individual or corporate) use the purchased products in the process of their conscious activities or functioning. Obviously, they create or produce new products (services) for themselves or for the market and use the necessary resources. Thus, the process of activities (or functioning) of a particular consumer could be always shown as a process of manufacture of a new product or service in which the used resources are transformed.

Based on this logic, the chapter supposes that consumer qualities of a product during its use in the production process stimulate the usage of specific resources. Then the products (including competing ones) could be compared as to their influence on the usage of production resources in the production process. Different products, characterized by various consumer qualities, will stimulate the influence of certain production resources in the production process on others in a different way. When evaluating the character of influence of resources during application of competing products in the production process, it is possible to evaluate the consumer qualities of these products.

Thus, the work offers the method of comparison of consumer qualities of products on the basis of the resource approach. That's why the next step is classification of resources which could be used in the production process. The

literature offers different approaches in distinguishing the necessary totality of resources. Thus, Hofer and Schendel (Hofer and Schendel 1978, pp. 145–148) offer to distinguish six main categories of resources: financial, material, human, technological, reputational, and organizational.

A similar result is given in the research by Inshakov (Inshakov 2003, p. 17) which offers to distinguish production resources in the basis of the following groups: human (*A*), technical (*T*), material (*M*), organizational (*O*), informational (*Inf*), and institutional (*Ins*). Thus, equipment and technological processes, personnel, natural and other means and materials, organizational technologies, and informational and institutional provision are possible resources for manufacture of the specific product. The items and conditions of nature become resources and factors of production in the process of usage—after that, they are transformed into the final product of production process. Hereinafter, this classification of production resources will be used.

Thus, the chapter offers to perform comparison of consumer qualities of competing products as to the level of mutual influence of resources (human, technical, material, organizational, informational, and institutional) during their use in the production process.

2.2 Mutual Influence of Resources

Use of resources directly influences the corresponding process of manufacture of products, as it influences the specific conditions of resource-factorial transformation. This means that direct use of certain resources also performs influence, but indirect one, on use of other resources in the production process. Obviously, such influence has a mutual character.

Let us view a hypothetical example of a business process. Application of technological equipment, performed within the use of technical resource (*T*), will stimulate the development of professional competences of enterprise's employees which is a change in the use of human resource (*A*). Enterprise's managers, directing their managerial efforts at the use of technical resource, strive to get operations and actions from the employees aimed at the use in the production process of technology, equipment, machines, and other technical means. In other words, the process of management is aimed at the enterprise's employees' using the capabilities of equipment to provide effective conditions of exploitation, servicing, and maintenance of this equipment. Here, the resource *T* is used directly, and the use of the resource *A* takes place indirectly, under the influence of the resource *T*.

2.3 Cognitive Approach in Expert Evaluation

For the purpose of study of influence of resources on each other in the production process, it is offered to use the cognitive approach that is realized in the form of cognitive model (Gorelova 2005; Moseyko 2015; Prokhorova 2011; Solokhin 2007). Within the cognitive modeling, a cognitive map is built which is a structural scheme of causal connections that determine the (mutual influence) of resources on each other during their use in the production process (Fig. 1) (Moseyko 2015).

From the formal positions, cognitive map is a sign-oriented graph (Gorelova 2005). In this scheme, the resources used in the production process are interpreted in the form of the graph peaks and influence (mutual influence) of resources on each other—in the form of curves. Each curve is denoted by a combined symbol which includes the symbol of influencing resource (symbol before the arrow \Rightarrow) and symbol of the resource on which the influence is performed (symbol after the arrow \Rightarrow) (Moseyko 2011). For example, influence of the use of human resource A on the use of technical resource T in the production process will be denoted as $T \Rightarrow A$.

The character of influence of certain resources on others could be positive (“+” above the curve), when increase (decrease) of one resource leads to increase (decrease) of another, and negative (“-” above the curve), when increase (decrease) of one resource leads to decrease (increase) of another, or be absent (0).

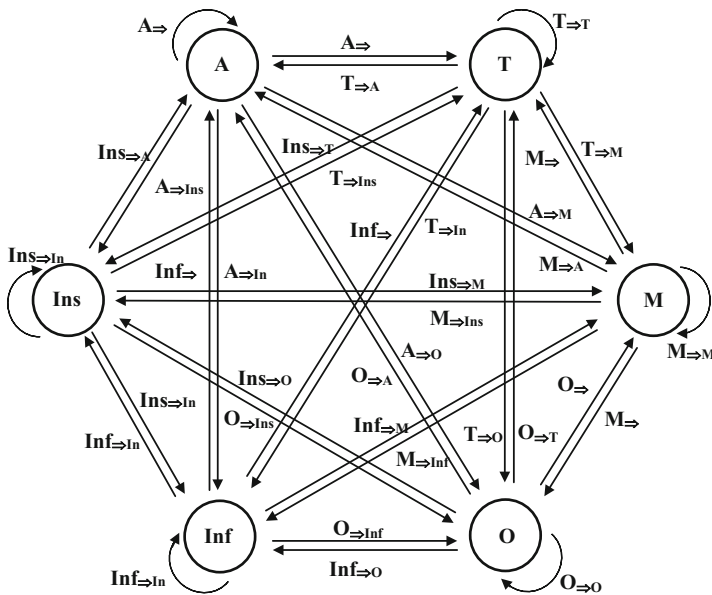


Fig. 1 Cognitive map of the process of mutual influence of resources during their use in the production process

The given cognitive map's (Fig. 1) indicators of the level of mutual influence of resources are not shown, and, for the purpose of simplification of the task, let us consider the character of influence of all factors on the cognitive map to be positive.

In the given cognitive map, it is necessary to pay attention to the influence of resources on themselves. Such situations are confirmed in practice. Thus, for example, the level of professional training of managerial personnel will be influencing the professional skill of the enterprise's employees (influence $A \Rightarrow A$). The use of better equipment and mechanisms stimulates more effective work of other machinery—for example, better ball bearings allow using the mechanisms longer and more efficiently (influence $T \Rightarrow T$). Application of better material could stimulate more effective use of other materials—for example, application of modern construction materials allows for less spending of heat energy during exploitation of the building (influence $M \Rightarrow M$).

3 Results

3.1 Technique and Scheme of Expert Evaluation

Applicability of the operation of expert evaluation is based on requirements for reliable and psychologically correct performance by a human expert. The results of the research (Larichev and Moshkovich 1996) show that one of the operations with alternatives, which is performed in a stable way, with a few contradictions, is the operation of paired comparison of alternatives in qualitative form which differ by no more than two criteria. That's why comparison of the levels of influence of resources on each other during their use in the production process will take place for *two* competing products. This process is shown in Fig. 2 for the generalized resource R , where $R = \{A, T, M, O, \text{Inf}, \text{Ins}\}$.

Each of the six corner arrows in corresponding fields interprets the paired comparison of the degree of influence of the resource R on the use in the production process of each of the six resources A, T, M, O, Inf и Ins for the product of the first and the product of the second. Each paired comparison is realized by the formula:

During the consumer's use of which product (first or second) in the production process the influence of the resource R on the use of the resource A ($T, M, O, \text{Inf}, \text{Ins}$) is larger?

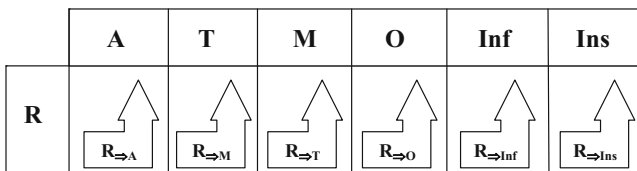


Fig. 2 Algorithm of expert evaluation

	A	T	M	O	Inf	Ins	
R	$d_1(R \Rightarrow A)$	$d_1(R \Rightarrow T)$	$d_1(R \Rightarrow M)$	$d_1(R \Rightarrow O)$	$d_1(R \Rightarrow Inf)$	$d_1(R \Rightarrow Ins)$	$D_1(R)$
	$d_2(R \Rightarrow A)$	$d_2(R \Rightarrow T)$	$d_2(R \Rightarrow M)$	$d_2(R \Rightarrow O)$	$d_2(R \Rightarrow Inf)$	$d_2(R \Rightarrow Ins)$	$D_2(R)$

Fig. 3 Results of expert evaluation

Resource Product	A	T	M	O	Inf	Ins
1	$D_1(A)$	$D_1(T)$	$D_1(M)$	$D_1(O)$	$D_1(Inf)$	$D_1(Ins)$
2	$D_2(A)$	$D_2(T)$	$D_2(M)$	$D_2(O)$	$D_2(Inf)$	$D_2(Ins)$

Fig. 4 Table of expert evaluations results

As a result of expert evaluation, the expert assigns the scores. If the expert thinks that during the consumer’s use in the production process of any of the two products the resource R performs larger influence on the use of a certain resource, this product is assigned the score “2,” and another product—“0.” The first product is numerator and the second product—denominator. If the expert thinks that during the consumer’s use of the first and second products the resource R performs equal influence on the use of the specific resource, both products receive 1 point. Thus, during the expert evaluation of the level of influence of the resource R on the use of any resource, each of the two competing products can receive the score from 6 to 12. The results of expert evaluation for the resource R are shown in Fig. 3.

The right field includes total score for the first and second products in numerator and denominator. These scores interpret the level of influence of the resource R on the whole production process (on the use of all resources in the production process) during the consumer’s use in the production process of the first product— $D_1(R)$ (numerator), and during the use of the second product— $D_2(R)$ (denominator):

$$D_1(R) = \sum d_1(R \Rightarrow r); \quad D_2(R) = \sum d_2(R \Rightarrow r), \quad \text{where } r = \{A, T, M, O, Inf, Ins\}.$$

These operations of expert evaluation are conducted for all six resources. The final table, which includes the results of expert evaluation of consumer qualities with the two products, is shown in Fig. 4.

4 Results

Figure 4 shows formalized results of expert evaluation of the level of influence for two products, performed by each of the six used resources on the use of all resources in the production process of a new product. For example, values $D_1(A)$

and $D_2(A)$ are the scoring values of the influence degree of human resource on the use of all the resources used in manufacture of a new product during the application of the first and second products, accordingly. If, for example, the value $D_1(A)$ is larger than the value $D_2(A)$, this means that application of the first product in the process of a new production allows the human skills and competences to influence the use of all production resources to a larger degree than application of the second products.

Also, if the value $D_2(T)$ is larger than the value $D_1(T)$, application of the second product in the process of new production allows the used machinery and equipment to influence the use of all production resources to a larger degree than application of the first product.

The similar results could be obtained for other resources: $D_1(M)$ and $D_2(M)$ determine the level of influence of resources such as fuel, natural items, energy, and expendables; $D_1(O)$ and $D_2(O)$ determine the level of influence of organizational structure, hierarchy, and structure of authority; $D_1(Inf)$ and $D_2(Inf)$ determine the level of influence of professional knowledge, information sources, and data; $D_1(Ins)$ and $D_2(Ins)$ determine the level of influence of rules, traditions, reputations, etc.

5 Discussion

The results received in this work allow evaluating the consumer qualities of competing products. The main methodological assumption is the idea that consumer qualities of the compared products stimulate the use of specific resources during their use in the production process of other products or services. That's why it was offered to perform evaluation of consumer qualities of products, comparing them as to their influence on the use of resources in the production process. If the influence of a certain product on the use of certain resources during manufacture of a new product is larger, it is obvious that this product possesses more vivid consumer qualities. And vice versa—if the influence of the compared product on the use of production of resources is expressed less, this product possesses lower consumer qualities.

6 Conclusion

This chapter offers the method of expert comparison of consumer qualities of competing products on the basis of the resource approach. This method is based on the assumption that consumer qualities of the compared products are determined by these products' capabilities to ensure mutual influence of resources in the production process of new products. For the purpose of comparative analysis of qualitative parameters, the expert approach was offered, which is predetermined by

difficulty in structuring and formalization of such tasks. The result of comparison of consumer qualities of competing products are score values of the influence degree, performed by each of the six used resources (human, technical, material, organizational, informational, and institutional) on the use of all resources in the production process of a new product, for the cases of application of each compared product in this process.

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Marketing as a Determinant of the Agricultural Machinery Market Development

Tatiana N. Litvinova, Elena S. Kulikova, Viktor P. Kuznetsov, and Pavel M. Taranov

Abstract The article gives a comprehensive analysis of the Russian market of agricultural equipment, allowing identification of the factors and problems of its development, the main of which is vulnerability to crises. The authors determined the role of the market in the agricultural economy of modern Russia and identified the need for rural development, aided by the development of agricultural machinery market. The authors concluded that the introduction of marketing logistics activities in the dealerships to ensure agricultural production and technical resources is an important task of the market for agricultural machinery, the solution of which can significantly improve the level of technical support of the rural areas. Application of marketing logistics activities of the participants in the supply of agricultural technology gives these companies a significant competitive advantage over other companies. These benefits are based on the possibility of obtaining timely information and certain values that are not available to other companies, as well as a number of joint actions in the interests of each link of the supply chain. The use of marketing principles in the system of territorial management promotes competition between regions. Increased competition in rural areas with other members of the social division of labor develops within the scope of scientific and technological progress, information, environmental standards of living, increased mobility of people, and capital. The center guide for the development of rural areas in modern Russia is achieving sustainable socioeconomic development. The authors have

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developed a complex structure introduction of elements of marketing logistics into the activity of agricultural machinery market participants and left recommendations for its implementation.

JEL Code D47

1 Introduction

Despite the existence of numerous studies in the field of agricultural machinery market, the role of marketing in this market is not fully investigated. Most studies focus on a narrow study of the market and take into account only domestic factors. This article focuses on the international agricultural market factors, such as trends in the world economy, international integration of countries, globalization, and global competition.

2 Materials and Methods

The economic crisis that began in 2009 amid the global financial and economic crisis has hit on a number of resource-supplying branches of agriculture, especially on agricultural machinery. Total amounts of leasing supplies fell in 2010 to 64%, in comparison with 2009. In 2009, the regions received 12,800 units of machinery for the total of RUB 20.5 billion—while in 2010, only 4900 units for the total of RUB 7.4 billion (Table 1).

In the context of the global food crisis, agriculture is an important factor of economic growth. Today there are a small number of countries which are able to increase food production. These countries include Russia which has a unique potential in the agricultural sector. Today Russia is an important player in the food market, producing about 10% of the global volume of grain. Achieving high parameters in the agricultural production should be based on the modern technical supply of agribusiness. This issue includes a variety of problems specific to Russia. Among them the following ones should be mentioned:

- Sharp drop in agricultural production
- Insufficient solvency of agricultural producers
- Excessively high load of arable land per tractor
- Rapid progress of imported machinery and equipment in the national markets
- Insufficient level of maintenance and servicing, especially of consumers of used imported machinery

Statistics in Table 2 confirm the above problems.

In recent years, business practices have undergone significant changes. These changes have led to a new phenomenon, when, along with product quality and

Table 1 Delivery of the main types of machinery on lease

Delivery of the main types of equipment leasing	2011	2012	2013		
			Absolute	% to	
				2011	2012
Tractors	2256	1808		51.4	64.2
Tractor-mounted sowers	699	362	344	49.2	95.1
Combine harvesters	1382	1315	668	48.3	50.7
Including combine	994	1099	469	47.1	42.6
Windrowers	97	76	40	41.2	52.6
Trucks	816	1054	588	72.1	55.7

Table 2 Production of machinery and equipment for agriculture in Russia

Production of machines and equipment for agriculture in Russia	1990	2000	2010
Tractors for agriculture and forestry (thousand units)	106.2	4.0	5.2
Drills (thousand units)	57.1	2.0	3.8
Plow dumping (thousand units)	89.2		4.7
Mowers (thousand units)	58.8		1.8
Combine harvesters (units)	–		97
Beet harvesters (thousand units)	8.6	–	

Table 3 The main features of agricultural production, affecting the demand forecasting and machinery supply

Groups of features	Contents
Natural	Sharp fluctuations of demand due to the seasonality of production; alteration of the requirements for machinery, depending on the yield and productivity; short period of machinery use; dependence of the results of weather conditions and of natural and other factors
Economic	Low purchasing power of the bulk of consumers of agricultural machinery; high technology cost, which further reduces the demand for machinery; lack of investment in the development of agriculture and its infrastructure; the low level of state support for agriculture; high logistical costs for the delivery of equipment to rural producers
Organizational	High degree of territorial dispersion of production and therefore the need of production and organization of sale and service network which are close to the rural producers, long supply chains, low level of marketing organization of marketing, logistics, and agribusiness in this sphere

price, a decisive factor in determining the success of the company's growth in sales volume of its products was the ability to sell their products, using the integrated supply chains from the producer to the consumer, creating additional value for customers and organizing high quality service.

Table 3 shows the main features of agricultural production, affecting the demand forecasting and machinery supply. This classification identifies three groups of features: natural, economic, and organizational.

3 Results and Discussion

Marketing logistics emerged at the junction of logistics and marketing, and its appearance was largely caused by the changes in the global economy. The market is changing so rapidly that any market research is lagging behind. It is necessary to invent new methods of market research—up to the level, at which an introduction of a new product would be accompanied by the creation of online system of marketing research (Morozova and Litvinova 2013).

In order to maintain personal relationships, it is necessary to have information regarding interests, goals, plans, and challenges of the person which is useful for you. You should decide what service you could deliver to help them achieve the goals and fulfill the plans. As a result, you will be preferred to others (Popkova 2013).

Figure 1 shows the three levels within the complex structure of the introduction of marketing logistics into the activities of machinery market participants.

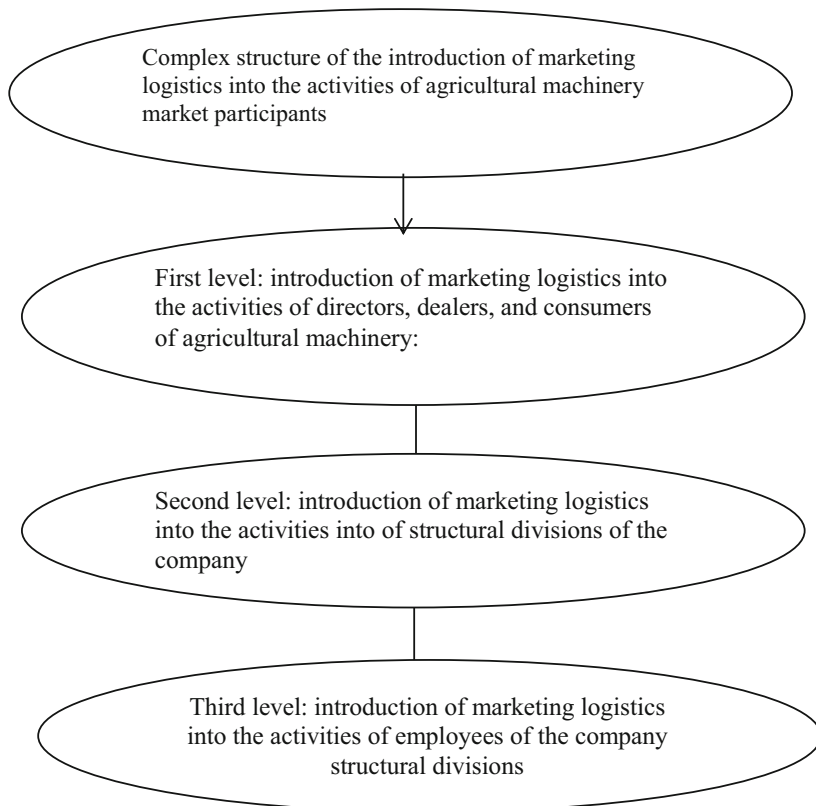


Fig. 1 Complex structure of the introduction of elements of marketing logistics into the activities of agricultural machinery market participants

The Russian Federation is a country with a predominant share of the urban population. According to official data (Ministry of Agricultural Industry of the Russian Federation 2014), as of January 1, 2010, 103,705,300 people (73.1%) out of 141,914,500 residents of Russia lived in urban areas and 38,209,200 (26.9%) in rural areas. However, rural development is an important priority of social and economic development of the country (Ministry of Agricultural Industry of the Russian Federation 2014). In this regard, the actual problem is the choice of tools for support and stimulation of rural area development. According to many authors, an important role in this regard may belong to the marketing approach.

It should be noted that during transformational changes of the Russian economy over the past two decades, there have been created a number of conditions that contributed to the development of entrepreneurship in rural areas. Among them are the following (Popkova and Tinyakova 2013a, b; Rodrigues and Brooks 2007; Sisman et al. 2014; Snelder et al., 2008, 2009; Vellend et al. 2008):

- (1) Formation as a result of privatization in the agricultural sector of a mixed economy, which gave a powerful impulse to the development of entrepreneurship in agriculture
- (2) Weakening of central management functions which are reduced to the impact on businesses in the agricultural sector by regulating economic parameters: certain prices, rates of payment for resources, tax payment rates, bank loan rate, and rural population income
- (3) Providing a combination of agricultural entrepreneurship in individual farms with its collective forms
- (4) Formation of the socioeconomic base for rural entrepreneurship, which is expressed in the formation of a significant number of owners of land and of property shares
- (5) Allocation of rural subjects groups which quickly and successfully develop an entrepreneurial approach to economic management (smallholders, farmers, processing company's specialists)

Thus, considering the importance of competitive determinants in the development of rural areas leads to the conclusion that the localization of management zones and residing places of rural society with a set of economic, cultural, psychological, and other features which provide the functioning of industrial relations in order to meet public demand for food is certainly a priority of economic development of the resource potential of modern Russia.

At that, the construction of rural areas and the selection of instruments for regulating their development should be based on the principle of connection of resources and of territorial, industrial, technological, social, and environmental sustainability. This principle can be realized through targeted organization and territorial dislocation of farming systems, keeping mostly evolutionary-historical character of social processes and mechanisms of formation of rural society's needs. This lever of rural area organization through the mechanisms of social responsibility and equal participation of the state, society, and business community may be concentrated in the hands of the territorial authorities of rural municipalities and the

subjects of the rural economy; it may be used as a tool of focused strategy for achieving competitiveness of rural areas in the social division of labor.

In this regard, the mission of rural area marketing is tool and methodical support of territorial management, aimed at achieving sustainable rural development, forming competitive advantages, developing competencies in rural areas for promoting their interests, and creating a favorable image.

4 Conclusion

As a result of the study, it can be concluded that without marketing, the modern agricultural machinery market actually cannot develop, because the situation on the world markets is changing very quickly and only effective marketing can help domestic manufacturers of agricultural machinery successfully and timely adapt to these changes—both in demand and in the nature of competition in the market.

Thus, marketing is a determinant of the agricultural machinery market development, as it ensures the stability of the market to the crisis in the domestic market and the world economy as a whole, increases the competitiveness of domestic producers of agricultural machinery in relation to international competitors, as well as contributes to the development of rural areas, which provides well-balanced development of the national economy.

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Possibilities and Perspectives for Activation of Sales in the Agricultural Machinery Market Within Sectorial Development of Russian and European Economies

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Abstract The purpose of the article consists in verification of the hypothesis and the study of possibilities and perspectives for activation of sales in the agricultural machinery market within the sectorial development of Russian and European economies. The methodology of the research is based on the use of the method of determining factor analysis; regression and correlation analysis; method of analysis of statistical information; method of systemic, structural and functional, and problem analysis; and method of graphic presentation of information. The authors determine the role of agricultural machinery market in economies of Russia and Europe, study the level and problems of development of agricultural machinery market in Russia and Europe, and determine possibilities and perspectives for activation of sales in agricultural machinery market within interaction and cooperation of Russia and Europe. As a result of the research, the authors come to the conclusion that the agricultural

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machinery market can be a targeted direction of optimization of sectorial economy of Russia and Europe and a tool of increase of sustainability and simultaneous acceleration of the rate of development of economies of these economic systems and offer the mechanism for activation of sales in the agricultural machinery market within sectorial development of Russian and European economies.

JEL Codes M31 • Q13 • F63

1 Introduction

Systemic economic crisis, peculiar for modern Russia and Europe, showed incapability of the service sphere to ensure sustainable and stable growth of GDP of these economic systems and practical ineffectiveness of their following the model of pure postindustrial economy. We suppose that the main sectorial market could be an agricultural machinery market. The purpose of the article consists in verification of this hypothesis and study of possibilities and perspectives of activation of sales in the agricultural machinery market within the sectorial development of economies of Russia and Europe.

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

Theoretical and methodological issues of sectorial development of a system's economy are reflected in multiple publications of such scholars as Dzhandzhugazova et al. (2015), Kravets et al. (2014), Popkova et al. (2013), and Skiter et al. (2015). Among the most vivid studies of modern authors, devoted to specifics of functioning and development of agricultural machinery market, it is necessary to mention the works by Corti et al. (2015) and Subaeva and Zamaidinov (2015a, b). Issues of marketing activities on the whole and activation of sales in particular in the agricultural machinery market are viewed in the works of Morozova et al. (2015), Shcherbak and Marchenko (2015), and Zhovnovach (2014).

For determination of the role of agricultural machinery market in economies of Russia and Europe, the authors use the method of determined factor analysis and the method of regression and correlation analysis. Factor analysis is used for the study of contribution of agricultural products market into GDP of Russia and Europe. For that, the following additive factor model is used:

$$\text{GDP}_{c,t} = \text{SER}_{c,t} + \text{AGR}_{c,t} + \text{IND}_{c,t} + \text{AMM}_{c,t} \quad (1)$$

where

$GDP_{c,t}$ —level of GDP of the country in year t

$SER_{c,t}$ —volume of service sphere in the country c in year t

$AGR_{c,t}$ —volume of agricultural production of the country c in year t

$IND_{c,t}$ —volume of industrial production of the country c in year t

$AMM_{c,t}$ —volume of agricultural machinery market (as a components of industrial sphere) of the country c in year t

c —country

t —year

For analysis, the official statistical information for 2014–2015 is used. In order to find the contribution of each factor into change of the country's GDP in 2015, as compared to 2014, its value for 2015 is put into formula (1), as well as values of other factors for 2014. That is, for finding the contribution of agricultural machinery market, the following formula is used:

$$\Delta GDP(AMM)_{c,2015/2014} = (SER_{c,2014} + AGR_{c,2014} + IND_{c,2014} + AMM_{c,2015}) - GDP_{c,2014} \quad (2)$$

The objects of the research are Russia, the EU, and the largest manufacturers, presented in the European market of agricultural machinery according to the 2015 data—Germany (28%), France (17%), and Italy (14%). Regression analysis is used for the compilation of the models of paired linear regression of the type $y = \alpha + \beta x$, which reflect the dependence of GDP (y) on development of agricultural machinery market (x). The indicator of this dependence is coefficient β in the model.

3 Results

Let us find the values of agricultural machinery market in economies of Russia and Europe. For that, let us use information in Table 1.

Based on the data of Table 1, let us calculate the contribution of agricultural machinery market into change of GDP of the studied countries.

- $\Delta GDP(AMM)_{Russia,2015/2014} = (149.1 + 1434.0 + 2239.8 + 0.7) - 3824.0 = -0.4$ US\$ billion
- $\Delta GDP(AMM)_{EU,2015/2014} = (433.2 + 5631.6 + 14,516.0 + 2.1) - 20,608.0 = -25.1$ US\$ billion
- $\Delta GDP(AMM)_{Germany,2015/2014} = (3.7 + 1158.1 + 2578.5 + 6.7) - 3747.9 = -0.9$ US\$ billion
- $\Delta GDP(AMM)_{France,2015/2014} = (46.9 + 433.0 + 1646.3 + 4.1) - 2130.8 = -0.5$ US\$ billion
- $\Delta GDP(AMM)_{Italy,2015/2014} = (51.8 + 621.8 + 1913.5 + 3.4) - 2590.9 = -0.4$ US\$ billion

Table 1 Data for factor analysis, US\$ billion

Sphere	Russia		ES		Germany		France		Italy	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
SER	149.1	145.0	433.2	489.5	3.7	3.8	46.9	47.8	51.8	52.9
AGR	1434.0	1394.3	5631.6	6363.7	1158.1	1186.9	433.0	440.7	621.8	635.3
IND	2239.8	2178.1	14,516.0	16,409.7	2578.5	2643.5	1646.3	1676.3	1913.5	1955.4
AMM	1.1	0.7	27.2	24.1	7.6	6.7	4.6	4.1	3.8	3.4
GDP	3824.0	3718.1	20,608.0	23,287.0	3747.9	3840.9	2130.8	2168.9	2590.9	2647.0

Source: Agroinfo (2016), Metelkin (2016)

Table 2 Data for regression and correlation analysis, US\$ billion

Year	Russia		EU		Germany		France		Italy	
	y	X	y	x	y	x	y	x	y	x
2011	3397.8	1.7	21,312.2	25.0	3471.8	7.0	2438.1	4.3	2432.7	3.5
2012	3498.0	1.4	21,635.7	28.1	3557.5	7.9	2487.6	4.8	2509.8	3.9
2013	3576.8	1.2	20,957.8	27.9	3630.1	7.8	2544.7	4.7	2535.4	3.9
2014	3824.0	1.1	20,608.0	27.2	3748.0	7.6	2130.8	4.6	2590.9	3.8
2015	3718.1	0.7	23,287.0	24.1	3840.9	6.7	2168.9	4.1	2647.0	3.4

Source: Agroinfo (2016), Metelkin (2016)

The received values of estimate indicators show that in 2015, as compared to 2014, Russia's GDP dropped by US\$0.4 billion (0.01%), under the influence of agricultural machinery market, EU's GDP by US\$25.1 billion (0.12%), Germany's by US\$0.9 billion (0.02%), France's by US\$0.5 billion (0.02%), and Italy's by US\$0.4 billion (0.01%). In other words, this change was not significant in the economy's scale.

The data for regression and correlation analysis are showed in Table 2.

Based on the data of Table 2, we received the following models of paired linear regression:

- $y(x)_{\text{Russia}} = 370.9 + 405.5x$. The obtained value of coefficient β means that with increase of the volume of agricultural products market by US\$1 billion, GDP of Russia grows by US\$405.5 billion (10.9%).
- $y(x)_{\text{EU}} = 396.6 + 3205.6x$. The obtained value of coefficient β means that with increase of the volume of agricultural products market by US\$1 billion, GDP of the EU grows by US\$3205.6 billion (13.7%).
- $y(x)_{\text{Germany}} = 81.8 + 425.6x$. The obtained value of coefficient β means that with increase of the volume of agricultural products market by US\$1 billion, GDP of Germany grows by US\$425.6 billion (11.1%).
- $y(x)_{\text{France}} = 290.5 + 104.7x$. The obtained value of coefficient β means that with increase of the volume of agricultural products market by US\$1 billion, GDP of France grows by US\$104.7 billion (4.8%).
- $y(x)_{\text{Italy}} = 62.77 + 277.5x$. The obtained value of coefficient β means that with increase of the volume of agricultural products market by US\$1 billion, GDP of Italy grows by US\$277.5 billion (10.5%).

Let us analyze the process of development of the agricultural machinery market in Russia and Europe (Fig. 1).

As is seen from Fig. 1, 2012–2015 saw the reduction of the volume of agricultural machinery market of Russia by 50% and Europe by 15%. The most important problems of the development of the agricultural machinery market in Russia and Europe include the following:

- Subsidizing character (large dependence on state support), which, under the conditions of crisis and deficit of state budget, reduced possibilities for development of this market.
- Complimentary interconnection with agricultural products markets, which showed decline recently.

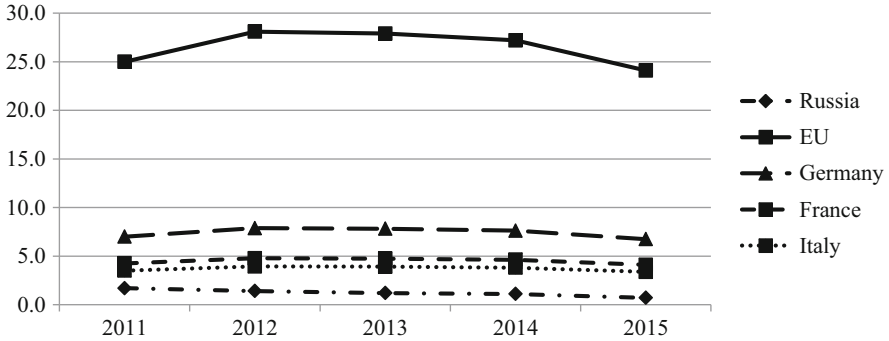


Fig. 1 Dynamics of the volume of agricultural machinery market of Russia and Europe in 2011–2015, US\$ billion. Source: Agroinfo (2016), Metelkin (2016)

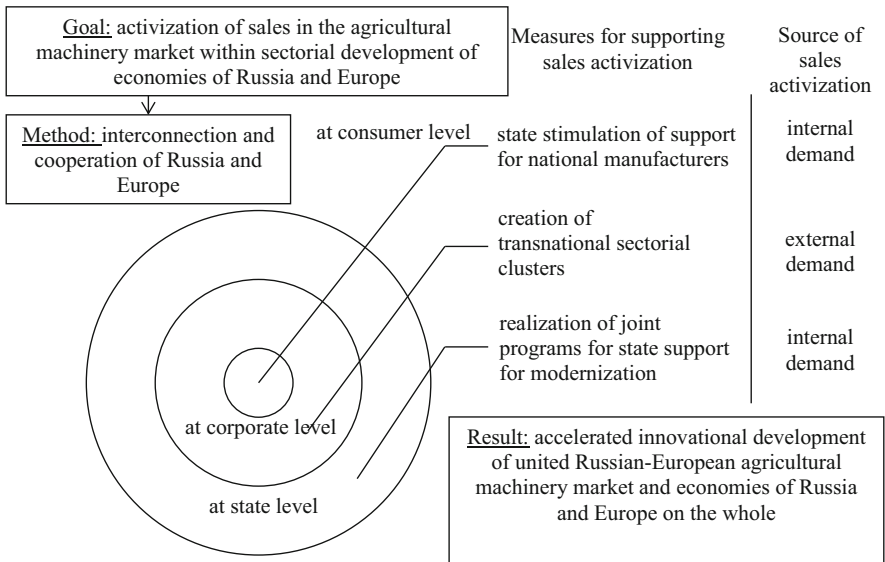


Fig. 2 Mechanism of activation of sales in the agricultural machinery market within the sectorial development of Russian and European economies

- Low marketing activity, caused by conduct of state policy of protectionism and being a reason for low global competitiveness of agricultural machinery manufacturers.

Interaction and cooperation of Russia and Europe in the economic sphere opens new possibilities and perspectives for the activation of sales in the agricultural machinery market, as, firstly, they are close foreign economic partners in this sphere and, secondly, this allows uniting resources and efforts for development of this market. For the purpose of their maximal use, we offer the corresponding mechanism, which is shown in Fig. 2.

As is seen from Fig. 2, the goal of the activation of sales in the agricultural machinery market within sectorial development of economies of Russia and Europe is achieved with the help of their international cooperation. As a result, acceleration of the innovational development of the united Russian–European agricultural machinery market is expected, as well as of economies of Russia and Europe on the whole, caused by the determined positive influence on it by this market.

4 Conclusions and Recommendations

Thus, the offered hypothesis is proved; agricultural machinery market can really be a targeted direction of optimization of the sectorial structure of economies of Russia and Europe and a tool for the increase of sustainability and simultaneous acceleration of rate of development of these systems' economies.

Theoretical significance of the research consists in development of the theory of sectorial markets. Practical value of the obtained conclusions and recommendations consists in the possibility for the application of the developed mechanism of activation of sales in the agricultural machinery market in the interests of sectorial development of economies of Russia and Europe.

It should be noted that despite the precise quantitative study of the process of activation of sales in the agricultural machinery market within the sectorial development of economy in the context of interconnection and cooperation of economic systems, its qualitative characteristics is not sufficiently studied in this research, which causes the necessity for its further study.

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Mergers and Acquisitions as a Form of Corporate Integration

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Abstract The articles view theoretical and practical foundations of mergers and acquisitions as one of the forms of corporate integration. Topicality of the research in the sphere of corporate integration is caused not only by increasing significance of the production factors, unification of international standards, and strengthening of competition but by the presence of limitations and barriers in enterprises' activities.

1 Introduction

The phenomenon of corporate integration has been known in the world economy from the times of establishment of the global market and the European trade revolution, when a new spin in development of foreign trade of European countries was made. Several hundred years before that, this phenomenon had evolved from the simplest forms of protection of entrepreneurs' interests to transnational corporations. As of now, corporate integration is an important macroeconomic phenomenon which, on the one hand, is caused by the process of globalization of various spheres of human activities and, on the other hand, is a driving factor of globalization of economy.

2 Methodology

The simplest understanding of the notion “integration” is provided by its translation from Latin (*integratio*—recovery, replenishment, *integer*—whole). However, the search for a universal extended definition of this term is very complicated. On the one hand, integration is treated as integration process; the philosophical encyclopedic dictionary defines integration as “. . . process or action leading to unification,

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comprehensiveness, and recovery of unity” (1997). On the other hand, there’s an opinion that integration is a final “product” of unification of separate elements, and, thus, integration is a “certain results of the process of integration, the state of ordered functioning of parts of the whole” (Philosophic encyclopedic dictionary 1983).

Combination of these two approaches leads to the third opinion, according to which integration is viewed as integration process and a result of this process, i.e., a certain whole consisting of previously separate elements and possessing new attributes “. . . a notion denoting connection between separate differentiated parts and functions of the system or organism on the whole, and a process leading to this state. . .” (Large encyclopedic dictionary 1997). Thus, integration is a complex phenomenon which is viewed ambiguously: it is the result of the process of integration—a certain whole possessing the attributes of unified systems and new attributes formed in the process of unification, as well as integration process, characterized by prolonged interpenetration and mutual influence of elements of the systems, subject to unification.

Any process is peculiar for stage-by-stage approach, which supposes the presence of certain stages (phases) of the process. Treatment of the process of integration as totality of stages that comprise it is diverse. For example, Watson Wyatt (Galpin and Handon 2005) formulated five stages of unification of companies: task setting, evaluation of situation, research, conduct of negotiations, and real unification. At the same time, Molotnikov (2006) distinguished four stages of unification of enterprises: study of company’s activities; conduct of preliminary negotiations; conduct of enterprises, aimed at acquisition of the company; acquisition of enterprise and development of the scheme of management of the received assets. These two opinions are connected by the lack of the stage of evaluation of the received result, which contradicts the fact that the purpose of mergers and acquisitions is primarily the receipt of economic profit, which must be evaluated so it would be possible to determine whether the purpose is achieved.

Based on the performed research, the authors of this article offer to group the existing stages (phases) of integration process into large blocks and formulate risks emerging during passing through the specific block of stages:

1. Preliminary stage (determination of motives (goals) of the deal, analysis of variants of achievement of the goals which are alternative to the process of corporate integration, selection of the team of specialists and experts, determination of strategy of integration, selection of the form (type) of integration, search for the targeted company, analysis and evaluation of own company and the targeted company, determination of the sources of the synergy effect, selection of criteria, and formation of the system of evaluation of synergetic effect)
2. Integration stage (conclusion of integration deal, formation of real structure and “architecture” of the joint company, formation and realization of new (improved) business processes)
3. The stage of evaluation and analysis of the received results

As of now, integration in the form of mergers and acquisitions is a perspective direction of development and adaptation to dynamic changes of internal and external environment of modern business. Lohrke et al. (2016) consider that merger/acquisition increases competitiveness and improves company's work. Deals on mergers and acquisitions are not only an external source of development but one of the tools of management of enterprise's cost. Within the Russian legal vase, forms of integration and reorganizations include merger, accession, division, allocation, and transformation. According to the Civil Code of the RF, merger is emergence of a new company through transfer to it of all rights and obligations of two or several companies with termination of the latter; acquisition is termination of one or several companies with transfer of rights and obligations to another company.

From the economic point of view, merger of several legal entities is accompanied by their reorganization, as a result of which rights and obligations of each company are passed to the newly created enterprise. During acquisition, one company takes the control over another company for the purpose of management but without purchasing the absolute ownership right for it. The purchased (assimilated) company stops its activities, and the assimilating company remains in the market. Merger and acquisition/joining are not that different from the economic point of view, but legally these deals require different organizational procedures.

Russian market of mergers and acquisitions shows clear progress and development but still falls behind the global tendencies. "Its share in the global market of mergers and acquisitions constitutes only 2.2% (in 2005—1.7%), at that the process of a deal may often take more than 1 year" (KPMG 2015). Negative consequences and reduction of effectiveness of such deals are caused by lack of financial expertise in the integration process. Also the reduction of the effectiveness of the deals is caused by lack of financial information in open access and its low quality, which increases the duration of a deal. A restraining factor of development of the market of mergers and acquisitions is lack of financial resources and limitation of their sources.

Evaluation of effectiveness of deals on merger/acquisition is very important, as each deal has its individual peculiarities, and its success and the volume of economic effect are achieved in different ways. According to Bekye (2003), there are factors of success and reasons for failures during mergers and acquisitions.

Let us view the factors of success of mergers and acquisitions in detail as forms of corporate integration. The key goals of deals on merger/acquisition are strategic development and increase of the cost of business of integrated structure. Merger must give an impulse for fundamental transformations. Enterprises should strive for realization of their accumulated and concentrated economic potential. During the process of integration, possibilities for synergy emerge. Bekye (2003) considers that "in order to realize the opening possibilities, the management should determine goals and tasks of merger and elaborate the method of execution at all levels—from ordinary employees to top managers." It's necessary to determine the circle of decisions which must be fulfilled by any means. The tasks should be realistic and achievable. Business should remain in the area of production, investment, and

financial stability after performance of the deal on merger. During selection of managerial personnel, the main and top-priority criterion should be effectiveness. Uzelac et al. (2015) consider that integration of human resources is very important for growth of effectiveness of newly created structure. Unification of corporate cultures is a complex and many-sided process. A guarantee of success of an integration deal is a strong and experienced team. Uncertain future has been very alarming for enterprise's personnel. Bekye (2003) considers that "in order to take tension away, it's necessary to finish all transformations and inform employees on what's happening in the company." Aklamanu et al. (2015) consider that exchange of knowledge, skills, and experience in corporate integration raises synergetic effect by means of increase of social capital value.

3 Results

The study in the sphere of evaluation of effectiveness of the deal on merger or acquisition showed that the authors' opinions are contradictory and allow making opposite conclusions. Consolidation of companies leads to various types of effect (economic, production, market, financial, social, etc.) There is a logical question—how could the positive direction of the effect be ensured?

Synergetic effect is the main goal of the deal for merger and acquisition during unification of resources of enterprises. According to Esipov (2010), "synergy is potential additional value, emerging as a result of unification of companies." The synergy effect in the process of merger is manifested as excess of the cost of unified company over the sum of costs of companies before the unification. Theoretically, there are two directions for achievement of merger/acquisition of companies: increase of economic weight and appearance of new possibilities and more effective use of existing resources. During mergers and acquisitions, it is not allowed to be limited only by evaluation of market cost of assimilated business, as there emerges additional cost by means of synergy between the assimilating and assimilated organization.

Modern theory and practice of evaluation of business use three approaches: cost based, income bearing, and comparative. Analyzing the cost of deals on merger and acquisition, approaches and methods of its measurement distinguish perspective and retrospective evaluation. The basis of perspective evaluation is the comparison of sums of expenses with estimate cost of the purchased company. According to Razmanova (2010), retrospective evaluation "allows analyzing effectiveness of mergers and acquisitions on the basis of consideration of dynamics of production and financial indicators of company's activities in certain timeframe after performance of merger. Unlike perspective evaluation of mergers and acquisitions, the task of retrospective evaluation is determination of correspondence of the performed merger to criterion of maximization of cost."

The sense of cost-based approach consists in determination of the cost of targeted company through summing up the costs, required for recreation of the

object of acquisition minus aging. While determining the market cost, it is possible to use cost-based approach, but it's not possible to use it for determination of investment value, as it does not take into account synergetic effect. Comparative approach uses comparison of indicators of evaluated object with the analogs. Comparative approach allows determining market and investment value. The drawback is the complexity in selection of similar objects. Kozodoev (2004) considers that "comparative approach does not allow determining and evaluating all potential sources of synergy. However, being not labor-intensive, comparative approach is widely used during mergers and acquisitions for their initial evaluation." Income-bearing approach and its methods are most widespread and optimal during evaluation of mergers and acquisitions. Income-bearing approach allows evaluating expenses and results of integration. The methods of discounting of money flows fit most of the determination of value during merger and acquisition of enterprises, as it allows evaluating synergetic effect.

The three classic approaches should be used together, in order to receive the most objective results of cost and synergy in the course of integration:

$$\text{Economic effect} = \text{PVAB} - \text{PVA} - \text{PVB} - \text{EE} > 0,$$

where PVAB—current value of the unified company

PVA—current value of company A

PVB—current value of company B

EE—economic expenses in the process of integration of companies

It is possible to evaluate effectiveness of merger (acquisition) from the positions of shareholders and/or company owners. Profit is expressed through net value of acquisition:

$$\text{NAV} = \text{PVAB} - (\text{PVA} + \text{PVB}) - P - E,$$

where NAV—net profit of company A

PVAB—total value of joined companies

PVA—market value of company A (as a rule, it equals market capitalization of the company)

PVB—market value of company B

P—volume of paid bonus

E—expenses for execution of a deal

This expression could be transformed:

$$\text{NAV} = (\text{PVAB} - (\text{PVA} + \text{PVB})) - (P + E),$$

where the first expression is synergetic effect.

One of the methods of measuring the effectiveness of mergers and acquisitions is accounting method, based on comparison of the results of activities of companies before and after the merger on the basis of accounting reports.

There are also hybrid (mixed) methods of evaluation as to deals on mergers and acquisitions: options method, EVA, SVA, MVA, CVA, etc. The EVA and SVA methods are based on change of the company's value in time. The basis of value growth is maximization of not so much accounting as of economic profit. According to the MVA method, value is determined by difference between economically added value and value of enterprise's assets according to the data of accounting reports.

Total synergetic effect consists of three elements: (1) synergy from liquidation of double functions, department, unused and low profitable assets, by means of optimization of commodities and material flows; (2) synergy by means of increase of competitive advantages, investment attractiveness; (3) synergy by means of optimization of the structure of capital and cost of the used assets. Thus, if the deal on merger and acquisition was successful, the result would be value added or value growth. At this stage, an actual issue is the one of preservation and multiplication of the value added and synergy. The final goal of integration is the establishment and development of enterprise, which is more effective and successful than the two previous enterprises.

4 Conclusions

Thus, mergers and acquisitions are a form of corporate integration. It is very effective under the conditions of thorough economic substantiation of these integration processes. The article offers a new approach which combines differentiation of synergetic effect, received during merger/acquisition for investment of money flows into value growth. Corporate integration, being one of effective means of development of enterprise, provides access to resources, technologies, investments, and innovations and offers growth to organization and increase of value added.

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Part IV
Specifics of the Global Crisis Management
at the Modern Stage of Development of the
Global Economy

Transformation of Approach to Market Segmentation Within Crisis Management of Global Entrepreneurship

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Abstract The purpose of the work is to study the sense of the process of transformation of the approach to market segmentation within crisis management of global entrepreneurship. This research is of fundamental character, which determined selection of its methodological basis. The work uses such methods of scientific research as classification, problem and comparative analysis (and method of data comparison) and synthesis, method of analysis of causal connections, hypothetical and deductive method, expert evaluation, formalization, and strategizing. The authors performed classification and comparative analysis of existing quantitative and qualitative approach to segmentation of market by entrepreneurial structures, performed evaluation of their applicability to management of global entrepreneurship, and developed a new approach and offered a framework strategy of successful market segmentation within crisis management of global entrepreneurship. The most important conclusion of this research is confirmation of the fact that traditional quantitative and qualitative approaches to market segmentation are not applicable within crisis management of global entrepreneurship due to insufficient flexibility of selection of targeted segments. The sense of the process of transformation of approach to market segmentation within crisis management of global entrepreneurship consists in application of more complex logic of market segmentation and selection of its targeted segments depending on the phase of economic cycle.

JEL Codes H12 • F01 • M31

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1 Introduction

Instability of global markets complicates the process of functioning and development of global entrepreneurship, making the influence of external factors stronger and less predictable. Therefore, crisis management as a means of risk management and management of uncertainty of entrepreneurial activities and increase of business sustainability becomes more popular. It is in high demand by global enterprises that have necessary resources for its implementation into economic practice.

Based on this, the research offers a hypothesis that specifics of global entrepreneurship cause non-applicability of traditional approaches of market segmentation within crisis management of global entrepreneurship. The purpose of the work is to verify this hypothesis and to study the sense of the process of transformation of the approach to market segmentation within crisis management of global entrepreneurship.

2 Materials and Method

Fundamental basics of market segmentation are set within the concept of targeted marketing that appeared in 1970–1980s. It is viewed in detail in works by Davis (2014), Skiter et al. (2015), Gupta and Pirsch (2014), Kravets et al. (2014), Sanfelice (2014), etc. According to this concept, an enterprise has to study the market and distinguish its various segments.

After that, targeted segments of the market should be determined (one or several), at which business is to orient during positioning itself as its products. At various targeted segments, an enterprise can offer various products, vary prices, and use own methods of promotion and sales. The most important indicators of efficiency of market segmentation are the following (Popkova et al. 2013):

- Number of distinguished market segments
- Level of detalization of each distinguished segment
- Clarity of limits of distinguished market segments
- Homogeneity of distinguished market segments

Targeted marketing stimulates the increase of sustainability of business, as it allows concentrating marketing efforts on the most perspective market segments and adapting to them for achieving maximum success. Conceptual provisions of sustainable development of business are given in research materials of such scientists as Koprina (2016), Rudenko et al. (2015), Kolk (2015), Mitruț et al. (2015), etc.

Certain issues of conduct of crisis management are viewed in works of such scholars as Koh et al. (2016), Christensen et al. (2016), Boin (2016), etc. Various aspects of global entrepreneurship are viewed in publications by such authors as

Garrido (2016), Doh et al. (2016), Caiazza et al. (2016), Sozinova et al. (2016), etc.

This research is fundamental character, which determined selection of its methodological basis. The work uses such methods of scientific research as classification, problem and comparative analysis (method of data comparison) and synthesis, analysis of causal connections, hypothetical and deductive method, expert evaluation, formalization, and strategizing.

3 Results

There are two main approaches to market segmentation by entrepreneurial structures: qualitative and quantitative (Table 1).

As is seen from Table 1, qualitative approach to market segmentation by entrepreneurial structures should be used for preliminary segmentation at the stage of enterprises entering the market, when the volume of accumulated information on the market is very small, and the enterprise acts at random.

Quantitative approach is used for further segmentation at the stage of enterprise's presence in the market, when it already accumulated sufficiently large

Table 1 Results of comparative analysis of existing approaches to market segmentation by entrepreneurial structures

Criteria for comparison	Approach to market segmentation	
	Qualitative approach	Quantitative approach
Stage of marketing at which application of this approach is expedient	Preliminary segmentation at the stage of enterprise entering the market	Further segmentation at the stage of enterprises present in the market
Most important criterion for selection of market targeted segments	Potential demand for products in the segment	Largest profitability in the segment
Sense of approach (targeted market segments)	Orientation at the market segments which the products of the enterprise fit the best—according to the experts in the sphere of marketing and based on the series of marketing studies	Orientation at the market segments with the highest demand for the enterprise's products and which bring it the largest profits in the current period
Drawback of the approach	Does not take into account real demand for the products of enterprise on the market—only the potential demand (high probability of wrong choice of targeted segments due to following lack of demand for products and low profits)	Short-term orientation of marketing activities of enterprise, as market segments may shift and sales volumes may reduce in the long term, and acquisition of new segments requires a lot of time and resource, as it takes a lot of risk

volume of information on the market. The most important criterion of choice of the targeted segments of the market is the largest profitability of work in the segment. Here such criteria of further segmentation of the market are used as product preferences of the consumers, frequency of purchases, price sensitivity, etc.

Effective market segmentation within crisis management of global entrepreneurship supposes focus not only at the most profitable segments of the market but at the most sustainable ones (least elastic by the price) and at the most perspective segments (the ones developing in the direction profitable for the enterprise) and for short-term development of business, as well as high diversification.

Quantitative approach conforms only to the first condition, maximizing enterprise’s profit in the short term; in the long term, under the conditions of crisis, it threatens it with bankruptcy. Qualitative approach conforms only to the third condition—only in the case when marketing specialists determined characteristics of market segments and compared them to peculiarities of the business.

This approach combines the best aspects of qualitative and quantitative approaches and is characterized by a more complex logics of market segmentation and selection of its targeted segments depending on the situation. This logic is reflected in framework strategy of successful market segmentation within crisis management of global entrepreneurship, which is given in Fig. 1.

As is seen from Fig. 1, the offered strategy ensures maximization of effectiveness of measures in the sphere of targeted marketing within crisis management of global entrepreneurship with the help of flexible approach to market segmentation

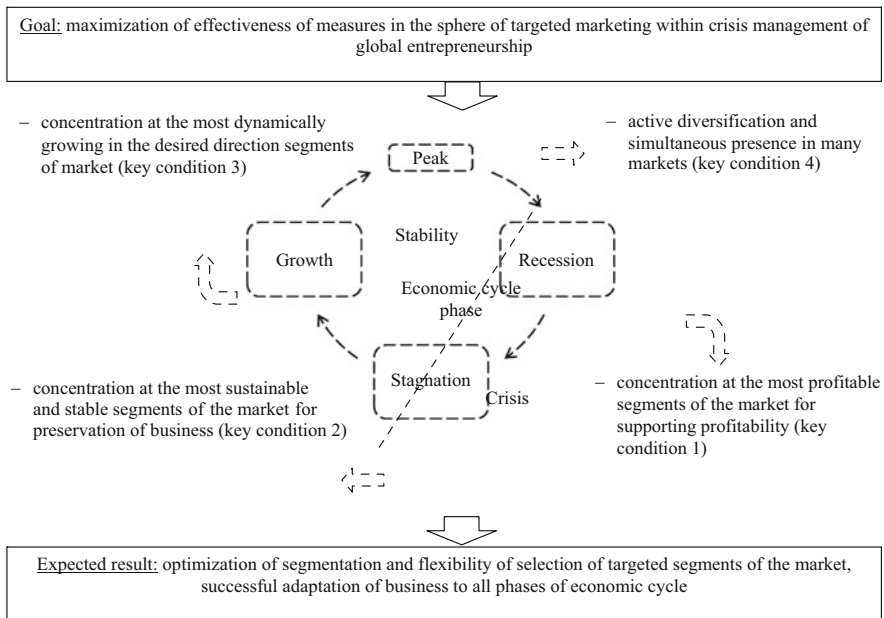


Fig. 1 Framework strategy of successful market segmentation within crisis management of global entrepreneurship

and selection of its targeted segments depending on the phase of economic cycle. Thus, under the conditions of crisis, the recession phase will have concentration on the most profitable market segments for supporting profitability; at that, the first condition comes to the foreground.

4 Conclusion

Theoretical significance of the performed research consists in development of the concept of targeted marketing, concept of crisis management, and concept of global entrepreneurship through substantiation of non-applicability of existing approaches to market segmentation to crisis management of global entrepreneurship and development of a new combined approach. This work also contributes into the concept of sustainable development through determination of the role of targeted marketing in provision of sustainable development of business.

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Marketing Model of the Global Crisis Management in Countries with Transitional Economy

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Abstract The purpose of the article is to develop the marketing model of the global crisis management in countries with transitional economy. In order to achieve it, the authors study the processes of economic crisis in countries with transitional economy with the help of horizontal and trend analysis, as well as the regulatory model of the global crisis management that is applied in the countries with transitional economy with the method of logical analysis and analysis of causal connections. The article is built on the basis of the inductive principle—i.e., the results of studying the crisis in modern Russia's economy could be applied to other countries with transitional economy. As a result of the research, the authors come to the conclusion that the countries with transitional economy use the ineffective regulatory model of the global crisis management which is a reason for the long recession, which could be overcome with the proprietary marketing model.

JEL Codes P21 • H12 • M31

1 Introduction

Countries with transitional economy suffer from consequences of global crises to a larger extent than other members of the global economic system. This is caused by the fact that they already started the process of liberalization of economic activities and became involved in the processes of globalization and integration, which

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causes them being influenced by the global crises—however, the action of the market mechanism in the countries with transitional economy is not yet developed, so Russian entrepreneurial structures are not able to compete globally. The basic hypothesis is the proprietary supposition that these countries use ineffective regulatory model of the global crisis management, which is a reason for their deep recession—the marketing model should be used to overcome it. Verification of this hypothesis and development of the marketing model of global crisis management in the countries with transitional economy are the purpose of this article.

2 Materials and Method

Foundations of the theory of the global crisis management are set in the works by Kravets et al. (2014) and Popkova et al. (2013). Applied aspects of global crisis management in various countries in view of the national specifics are reflected in the materials of the research by Karpenko et al. (2015, 2016) and Christensen et al. (2016).

Peculiarities of functioning and development of economic systems in the countries with transitional economy are viewed in the articles by Skiter et al. (2015), Sultanova (2015), and Bayar (2016). Specifics of a crisis in the countries with transitional economy, as well as of overcoming its consequences, are studied in publications by van Vu et al. (2016), Yang et al. (2015), and Marer (2015).

The indicators of economic system development that reduce during a crisis are GDP in constant prices, GDP per capita in constant prices, and volume of export, and the indicators that grow during a crisis are inflation, volume of import, deficit of state budget, and state debt. The informational and analytical basis for the analysis includes statistical materials of the International Monetary Fund. The initial data for the analysis is given in Table 1.

In the process of study of the regulatory model of global crisis management in the countries with transitional economy, the authors use the method of logical analysis and analysis of causal connections. The works are built on the inductive principle—i.e., the results of study of economic crisis in modern Russia could be applied to other countries with transitional economy.

Table 1 Initial data for horizontal and trend analysis

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Gross domestic product, in constant prices (RUB billion)	52,141.3	56,591.6	59,561.4	54,903.1	57,375.8	59,698.1	61,798.3	62,588.9	63,031.1	60,682.1	60,220.58
Gross domestic products per capita, in constant prices (RUB)	363,763.64	395,247.2	416,154.9	383,598	400,786.3	416,852.8	431,288.7	436,563.2	439,457.2	422,998.8	419,831.6
Inflation, consumer prices index (index value)	627.442	683.957	780.448	871.403	931.126	1009.739	1060.912	1132.662	1221.283	1410.967	1513.17
Volume of import of goods and services (%)	20.93	25.919	14.399	-28.652	24.299	11.335	10.293	6.67	-6.644	-27.953	-1.772
Volume of export of goods and services (%)	8.097	6.946	2.999	-12.995	5.625	6.892	3.553	4.117	-1.652	-3.251	-3.623
Revenues of government (RUB billion)	10,625.812	13,368.26	16,169.1	13,599.72	16,031.93	20,855.37	23,435.11	24,442.69	26,766.08	26,494.09	26,559.91
Total revenues (RUB billion)	8375.228	11,378.58	14,157.03	16,048.34	17,616.66	19,994.65	23,174.72	25,290.91	27,611.67	29,307.78	29,921.84
Gross state debt (% of GDP)	9.776	8.01	7.425	9.89	10.56	10.913	11.761	13.076	15.894	16.423	17.099

Source: International Monetary Fund (2016)

3 Results and Discussion

Let us analyze the process of economic crisis in the countries with transitional economy. Dynamics of indicators of development of modern Russia’s economy is given in Fig. 1.

As is seen in Fig. 1, the general linear trend of indicators of development of modern Russia’s economy in 2007–2016 is descending. In order to determine the reason of the long recession in modern Russia, we performed the logical analysis, as a result of which a conclusion was made that the regulatory model of the global crisis management, which is actively used in the countries with transitional economy and, in particular, in modern Russia, supposes application of the following tools of fighting crisis and overcoming its consequences:

- Increase of custom rate for limiting import and provision of subsidies for domestic enterprises for the purpose of supporting them
- Increase of taxes for business and inflation for financing the growing state expenses and reduction of deficit of state budget and state debt

These tools are a policy of protectionism, as well as restraining fiscal and monetary policy, realization of which in crisis leads to limitation of competition and reduction of business activity in economy. This deprives economic system of the possibility to leave the crisis, a key to which, according to existing scientific economic paradigm, is the innovational activity of entrepreneurial structures.

At the same time, realization of the neutral model of global crisis management, which supposes absence of any measures from the state in crisis, also leads to deepening of a crisis, for uncontrolled global competition will lead to loss of domestic entrepreneurship, which is a threat to the national economic security.

As a result of application of the regulatory model, consumers suffer—as they have to buy worse product for higher prices. As a result of application of the neutral model, domestic business suffers—as it cannot compete globally. That is, both models are related to negative influence of the state policy on society and economy.

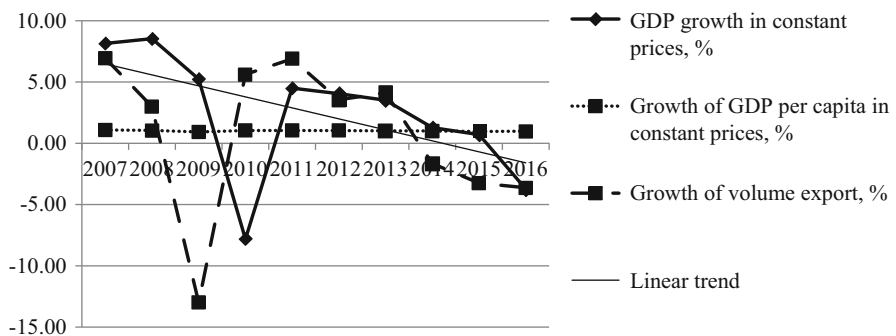


Fig. 1 Results of horizontal analysis of dynamics of indicators of development of modern Russia’s economy in 2007–2016

This contradiction is to be solved by the marketing model of global crisis management that supposes not only mass support for domestic entrepreneurship but also selective support by the criterion of innovational activity. Within this model, it is offered to use the following tools of global crisis management in the countries with transitional economy:

- Antimonopoly regulation of sectorial markets: it is necessary to limit unfair competition and stop the establishment of monopolistic power—especially from foreign entrepreneurial structures.
- Provision of access for domestic enterprises to subsidized credit resources: cofinancing of crediting of innovations—active entrepreneurial structures for supporting highly competitive business.
- Development of the system of public-private partnership: cooperation with private business is necessary in the sphere of creation and development of infrastructural provision of entrepreneurial activities.
- Stimulation of cluster processes in entrepreneurship: integration of domestic entrepreneurial structures will allow for increase of their market positions and global competitiveness and will create possibilities for their innovational development.

The offered recommendations lay in the basis of the proprietary marketing model of global crisis management in the countries with transitional economy, which is presented in Fig. 2.

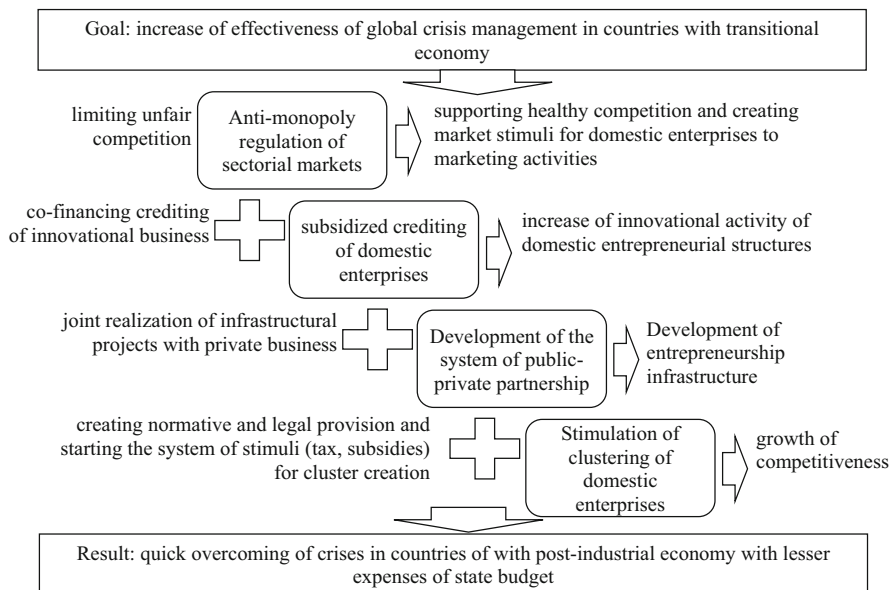


Fig. 2 Marketing model of global crisis management in the countries with transitional economy

As is seen in Fig. 2, as a result of realization of the offered marketing model, quick overcoming of crises in countries with postindustrial economy with less state expenses is ensured. In the long term, in case of successful application of this model in the countries with transitional economy, this will allow solving the problem of differentiation of the level of socioeconomic development of participants of global economy system or at least reducing this gap.

4 Conclusion

Thus, the offered hypothesis is proved—the countries with transitional economy use the ineffective regulatory model of global crisis management, which is a cause of their long recession, overcoming of which should be done with the proprietary marketing model. Theoretical significance of the results of the performed research consists in development of conceptual provisions of the theory of global crisis management and theory of the global economy.

Practical value of the proprietary conclusions and recommendations is explained by the possibility and expedience of their use in the process of global crisis management in the countries with transitional economy. It is worth noting that the results of the performed research are limited by its object—economy of modern Russia; however, high level of homogeneity of countries with transitional economy allows applying them to other countries from this category.

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Development of Anti-Crisis Strategies of Development of Hospitality Industry Companies on the Basis of Formation of Competitive HR Potential

Natalia A. Zaitseva, Anna A. Larionova, Oksana N. Kostryukova,
and Maria Y. Efremova

Abstract Importance and topicality of studying the issues of development of the anti-crisis strategy of development of hospitality industry companies on the basis of formation of competitive HR potential is obvious, for a human factor determines the successfulness of development and realization of managerial decisions and quality of service in hospitality. This research is aimed at the study of scientific approaches to the determination of the sense of “personnel potential” and its role in development of anti-crisis strategy of development of hospitality industry companies.

The authors used the methods of comparative, system, factor, and structural analysis as well as methods of systematization and generalization.

Novelty of the results of the research consists in development of anti-crisis strategy model of hospitality industry companies on the basis of formation of competitive HR potential. The offered model includes four components: analytical, generating, organizational and procedural, and resulting.

JEL Codes H12 • L12 • M12

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1 Introduction

The experts note a high potential of the hotel market in the Russian Federation. At that, the country has a lot of organizational, financial, and personnel limitations that restrain the development of the hospitality industry companies and are the causes of the crisis.

The hospitality industry is the most HR intensive (Guilding et al. 2014). Regardless of the automatization achievements implemented into hotels' activities, the hospitality atmosphere could be created only by personnel (Kichkaylo and Neretina 2015).

Despite a large number of studies (Bashkova 2009; Ivanov and Volov 2010; Israeli et al. 2011; García-Pozo et al. 2016) devoted to the problems of anti-crisis management at enterprises of the hospitality industry, their scientific elaboration for the hotel industry is not sufficient.

2 Literature Review

2.1 *Reasons for Companies' Crises*

The methodological basis of this research is works of scholars devoted to problems of anti-crisis management and HR potential of the hospitality industry companies.

The reasons for emergence of crises with enterprises could be different; they depend on the specifics of functioning of enterprises, peculiarities of the sphere, and state of external environment (Vorobyov 2014; Fedyakov 2015; Nugaev 2012).

The totality of the problems of crisis enterprise could be given as a following scheme (Fig. 1).

Thus, crisis is a breakthrough stage in the development of a hospitality industry enterprise, which poses a threat to existence and a possibility for better development, peculiar for uncertain reasons and unpredictable consequences, requiring quick decisions.

2.2 *Study of Scientific Approaches to Determination of the Sense of the Notion "HR Potential"*

The study of scientific approaches to the definition of the notion "HR potential" allowed making the conclusion that despite the significance and universality, this notion is treated with a high level of contradiction (Table 1).

Table 1 shows that there are various scientific approaches to the determination of the sense of the notion "HR potential"—at that, the term "HR potential" reflects

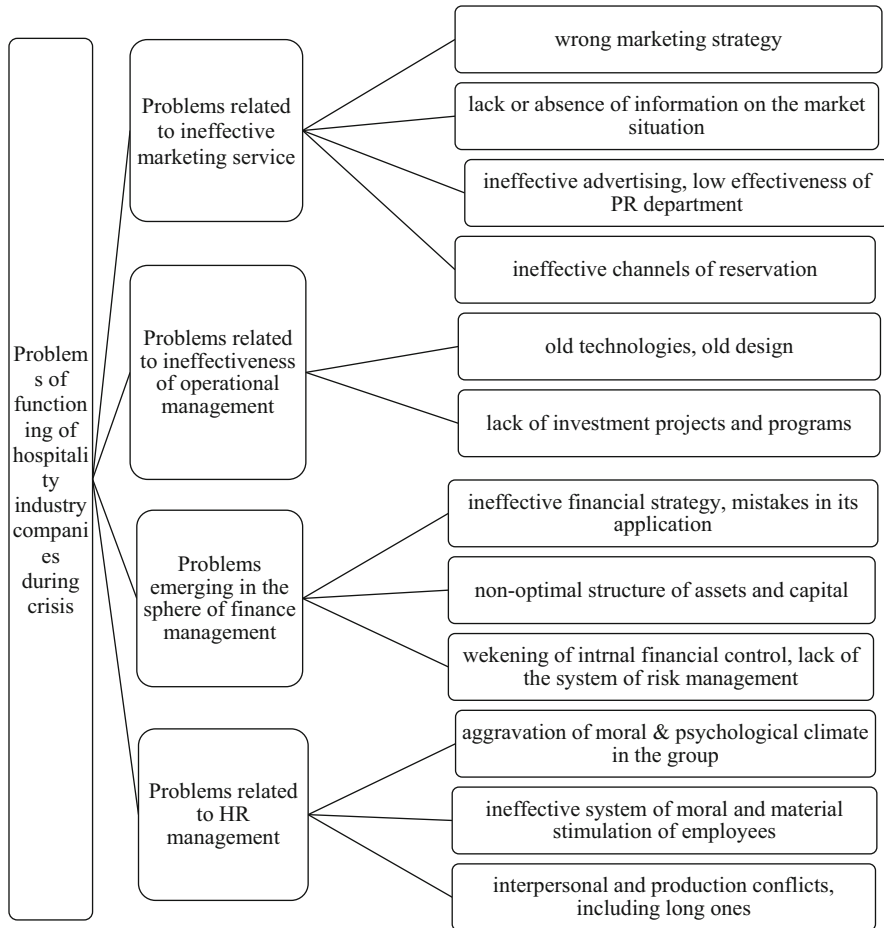


Fig. 1 Totality of the problems of crisis enterprise of the hospitality industry

qualitative characteristics of organization’s personnel, including potential possibilities of employees (Yang 2012; Ozlen 2014).

On the basis of analysis of existing scientific approaches, the authors of the article offer to treat HR potential as dynamic economic category that characterizes professional and personal characteristics and possibilities of personnel that could be used for achievement of organization’s goals.

Table 1 Main scientific and theoretical approaches defining the notion “HR potential”

No.	Definition	Authors, source
1	“HR potential is general (quantitative and qualitative) characteristics of personnel as one of resources related to execution of functions and achievement of the goals of perspective development of enterprise—these include potential capabilities of employees as a comprehensive system of the system (group), which are used and could be used in a certain period”	Kovalev (2008)
2	“HR potential = Personal potential (capabilities, possibilities, inclination, character, and temperament) + knowledge potential (competence, knowledge, skills) + communicational potential (direction of informational flows) + potential of development (self-esteem, self-expression)”	Zorina and Konoplyova (2015)
3	“HR potential is an inseparable element of the system of company management. Its level depends on the interconnected organizational and economic and social measures on formation, distribution, and redistribution of work force at the level of enterprise, from creation of conditions for the use and development of labor potential of each employee”	Sukhodeeva (2007)
4	“High potentials consistently and significantly outperform their peer groups in a variety of settings and circumstances. While achieving these superior levels of performance, they exhibit behaviors that reflect their companies’ culture and values in an exemplary manner. Moreover, they show a strong capacity to grow and succeed throughout their careers within an organization—more quickly and effectively than their peer groups do” “High potentials always deliver strong results, master new types of expertise, and recognize that behavior counts. But it’s their intangible X factors that truly distinguish them from the pack The four X factors of high potentials 1. Drive to excel 2. Catalytic learning capability 3. Enterprising spirit 4. Dynamic sensors”	Douglas et al. (2010)

3 Results

3.1 HR Potential of the Hospitality Industry Companies

Viewing the problems of development of anti-crisis strategies of development of the hospitality industry companies, it is important to study HR potential of these enterprises (Table 2).

Based on the data provided in Table 2, it is possible to conclude that growth rate of revenues from the services provided by hotels and similar accommodation means exceeds growth rates of the average number of employees for 2010–2015, which led to decrease of the share of payroll fund in revenues from 32.4% in 2010 to 28.5% in 2015. Average monthly nominal accrued salary of employees of hotels

Table 2 Indicators characterizing HR potential of hotels and similar accommodation means

Indicators	2010	2011	2012	2013	2014	2015
Growth rate of revenues as compared to the previous year (%)	–	118.7	117.9	114.7	102.7	112.0
Growth rate of payroll fund, accrued to regular employees and outsources as compared to the previous year (%)	–	109.4	110.8	107.7	110.1	113.2
Share of payroll fund in revenues (%)	32.4	29.8	28.0	26.3	28.2	28.5
Monthly average nominal accrued salary (RUB)	17,272.3	19,209.7	21,118.5	22,961.2	25,174.4	27,536.8
Growth rate of monthly average nominal accrued salary as compared to the previous year (%)	–	111.2	109.9	108.7	109.6	109.4
Average number of employees (without external outsourcers and irregular employees), people	103,260	102,699	108,429.9	107,728	110,607	114,404
Growth rate of average number of employees as compared to the previous year (%)	–	99.5	105.6	99.4	102.7	103.4

Source: compiled and calculated by the authors on the basis of the Rosstat data: <http://www.gks.ru/dbscripts/cbsd/dbinet.cgi>

and similar accommodation means for the analyzed period grew annually by 8–10%, constituting RUB 27,536.8 in 2015.

Based on the data of open analytical sources (Superjob, Kelly Services, JOB.ru, 2016) and survey of managers of the hospitality industry companies, performed by the authors, the following data on the salary level of various categories of employees of the hospitality industry companies were received, presented in Table 3.

Further study showed that apart from the low prestige of working in this sphere, the salary level—especially in the regions of the RF—is usually lower than in the Moscow region on the average.

With a low level of salary, the level of requirements to personnel of hotels and other accommodation means and its qualification are high—for example, the positions of the hotel manager require candidates who are ready to perform multiple tasks and communicate with people and know foreign languages and special software (Aparti, Libra, Shelter, etc.). While selecting candidates, companies of the hospitality industry have to take into account the requirements of professional standards, set at the legislative level.

Table 3 Salaries of employees of the hospitality industry companies (as of September 15, 2016, Moscow)

Category of employees	Average monthly salary, RUB	Average hourly salary, RUB
(Sales and marketing department)	27,000	150–160
Chief of sales and marketing department	55,000	310–320
Front office manager	21,000	120–125
Front office department	50,000	280–290
Housekeeper	20,000	110–120
Housekeeping supervisor	25,000	140–150

Source: calculated and compiled by the authors

There are exclusions—at the companies that realize successful programs of development of personnel, like in the hotels under the management of Hilton, where the personnel turnover constitutes only 6% per year.

In crisis, owners of hotel business have a limited possibility of monetary stimulation but that does not mean that stimulation programs should be postponed. According to the Sec Hospitality Training and Consulting и Aethos Consulting Group (2016) research, the significance of nonmaterial factors of stimulation of personnel is not just high; it often exceeds the motivating potential of money, though a decent level of financial compensation is a mandatory condition for most employees.

Thus, despite increase of the role of a service component in the global economy, prestige of working in this sphere is still low, which is noted by a lot of researchers (Nonano et al. 2005). That’s why the task of the formation of competitive HR potential in view of continuing crisis in the Russian economy is very topical.

3.2 Developing the Model of Anti-Crisis Strategy of the Hospitality Industry Companies on the Basis of Competitive HR Potential

As for practical issues of development of the anti-crisis strategy of the hospitality industry companies on the basis of formation of competitive HR potential, the following proprietary model is offered (Fig. 2).

Thus, this model, on the one hand, reflects all four classic stages of the strategy development, and, on the other hand, views the solving of the issue of crisis overcoming at the hospitality industry companies on the basis of formation of competitive effective HR potential.

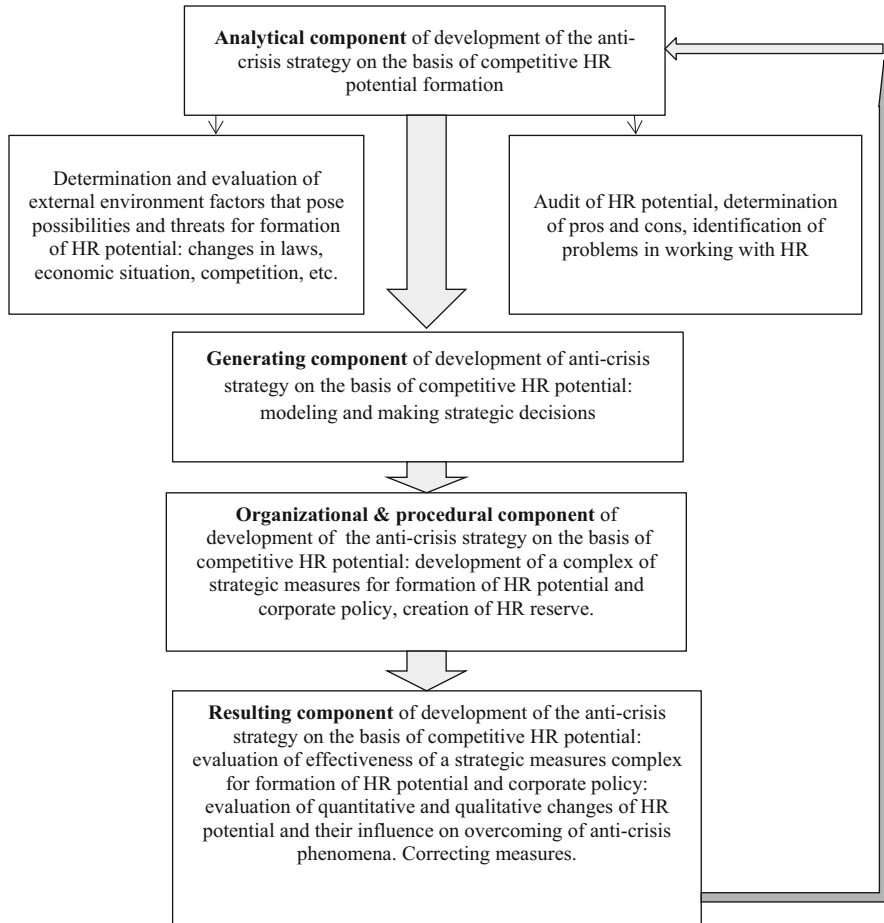


Fig. 2 Model of development of the anti-crisis strategy of the hospitality industry companies on the basis of competitive HR potential formation

4 Discussions

The research on development of the anti-crisis strategy on the basis of competitive HR potential is missing.

Previously, the issues of anti-crisis management were viewed in the works by Ivanov and Volov (2010) from the positions of mechanisms and tools of anti-crisis management in hotel business, sources of appearance of crisis phenomena, and realization of innovational, financial, marketing, and investment solutions that ensure purification of business. The study by Hajibaba et al. (2016) is devoted to the comparative effectiveness of various preventive approaches in crisis situations, related to hotel infrastructure. However, some of the authors have stated that

competitive HR potential is a basis for development of enterprises of tourism and hospitality industry, including in development of strategies (Zaitseva et al. 2016a, b).

Thus, the offered approach is peculiar for its novelty and is directed at considering the role of HR potential during development of the anti-crisis strategy and the hospitality industry companies.

5 Conclusion

On the whole, as a result of the performed research, it is possible to conclude that development of anti-crisis strategies of hospitality industry companies' development that takes into account the formation of competitive HR potential is perspective.

Materials of the article have a theoretical value for scientific research in the sphere of anti-crisis management of the hospitality industry companies and practical value during development of anti-crisis strategy of development of the hospitality industry companies on the basis of formation of competitive HR potential.

Thus, it is possible to state that with effective crisis management, a hospitality industry company can overcome it with a new strategy and new team of managers, which will give it competitive advantages in market struggle.

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Model of Global Crisis Management of Entrepreneurial Activities

Alexander S. Natsubidze, Evgeny A. Likholetov, Alexander V. Malofeev, Tatiana A. Zabaznova, and Elena V. Patsyuk

Abstract The purpose of the article is to develop a model of global crisis management of entrepreneurial activities, which allows increasing sustainability of modern enterprises against crisis. The authors use the method of time rows analysis to analyze the sense, dynamics, and global consequences of entrepreneurial activity crisis by the example of the financial crisis that started in 2008 on the basis of experience of the USA, Germany, Japan, Russia, and the global economy on the whole. The authors determine and analyze existing approaches to the global crisis management with the help of methods of systematization, classification, and comparative analysis and evaluate their effectiveness by the example of modern Russia at the macro-level with the help of the proprietary method. Three levels of the global crisis management are distinguished: microlevel, at which certain enterprises take measures for preparation for future crises and increase of sustainability of business to influence the global economic recession; macro-level, within which certain countries realize state policy on protection of domestic entrepreneurship from the influence of global crisis; and global level, at which efforts of groups of countries and international organizations are aimed at stabilization of international economic situation. As a result of the research, the authors came to the conclusion that diversification approach is the most effective one, which is followed by insurance and political approach; however, effectiveness of these approaches is rather low. As a perspective direction of increase of effectiveness of global crisis management of entrepreneurial activities in the context of the countries' orientation at building postindustrial economy, this work offers an innovation-oriented model.

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JEL Codes F01 • P12 • E32

1 Introduction

In the twenty-first century, entrepreneurship is viewed as the most important vector of economic growth. State policy and international initiatives for acceleration of growth rates of developing economic systems are oriented at its development within solving the problem of existence of disproportions in the world economy. Under the conditions of crisis, modern enterprises face multiple complexities (reduction of effective demand, destruction of economic ties, etc.), due to which the global economic progress is slowed down and threatened. The purpose of the work is to develop the model of global crisis management of entrepreneurial activities that allows increasing sustainability of modern enterprises against a crisis.

2 Materials and Method

Specifics of functioning of entrepreneurial structures in the conditions of economic crisis are reflected in the works by Bartz and Winkler (2016), Al-Tahous (2016), Fabregá and Nicolau (2016), Kravets et al. (2014), D'Angelo et al. (2015), Dahles and Susilowati (2015), Kundenko et al. (2015), etc.

Theoretical substantiation and methodological approaches to global crisis management of entrepreneurial activities are viewed in the works by Avery et al. (2016), Grynchyshyn (2016), Morel and Chauvin (2016), Skiter et al. (2015), Persakis and Iatridis (2016), Takagi (2016), Snidaro and Visentini (2016), etc.

To study dynamics of crisis of entrepreneurial activities, this work uses the method of time rows analysis. The studied indicators include the level of entrepreneurial activity (y), growth rate of GDP (x_1), deficit on current account (x_2), and unemployment level (x_3). In order to evaluate their effectiveness, the work uses specially developed proprietary method that supposes the use of the following formula:

$$\text{Eff} = \text{RLC}/\text{ECM} \quad (1)$$

where Eff—effectiveness of approach to the global crisis management

RLC—reduction of losses from crisis in terms of money

ECM—expenses for conduct of measures in the sphere of global crisis management

3 Results

Let us analyze the dynamics and global consequences of the recent crisis of entrepreneurial activities. For that, let us use Table 1.

The following models of paired linear regression were obtained in this work, which reflect the dependence $y(x_1)$:

- $y(\text{Russia}) = 0.01 + 2.63x_1$. That is, with reduction of the level of entrepreneurial activity by 1% in Russia, growth rate of GDP reduces by 2.63%.

In this work, the following models of the paired linear regression were received that reflect dependency $y(x_2)$:

- $y(\text{Russia}) = 0.03 - 1.97x_2$. That is, with reduction of the level of entrepreneurial activity by 1% in Russia, current account deficit grows by 1.97%.

In this work, the following models of the paired linear regression were obtained that reflect the dependency $y(x_3)$:

- $y(\text{Russia}) = 0.71 - 11.48x_3$. That is, with reduction of the level of entrepreneurial activity by 1% in Russia, the unemployment grows by 11.48%.

This work distinguishes three main approaches to the global crisis management that are actively used at micro- and macro-level (Table 2).

According to some calculation, due to lack of economy on the scale and high prices for products, the lost profit of domestic consumers constituted RUB 3694.27 billion, and advantages from using that approach, related to reduction of economy's losses from crisis, constitute RUB 3952.87 billion (RIA-news 2013). Therefore,

$$\text{Eff}(\text{divers}) = 3952.87/3694.27 = 1.07.$$

$$\text{Eff}(\text{insur}) = 4132.78/3923.77 = 1.05.$$

$$\text{Eff}(\text{polit}) = 2659.18/2632.87 = 1.01.$$

A perspective direction of increasing the effectiveness of the global crisis management of entrepreneurial activities in the context of orientation of countries of the world at building the postindustrial economy is the innovation-oriented model, which is presented in Fig. 1.

As is seen in Fig. 1, innovation-oriented approach to the global crisis management of entrepreneurial activities supposes orientation at maximization of innovative activity.

According to our forecast, building the innovation-oriented economy in modern Russia requires investments into development of science and education, as well as into scientific research—RUB 3500 billion. This will allow getting long-term profit from the global crisis management—RUB 5000 billion. That is,

$$\text{Eff}(\text{innov}) = 5000/3500 = 1.43.$$

Table 1 Estimate data for study of dynamics and global consequences of crisis of entrepreneurial activities in 2008–2015

Indicator	Country	Values of indicators for years									
		2008	2009	2010	2011	2012	2013	2014	2015		
Level of entrepreneurial activity (% of able-bodied population) (x_1)	USA	18.7	15.4	12.3	13.5	14.6	15.2	16.8	17.3		
	Germany	7.7	6.9	5.6	5.8	6.2	6.4	6.9	7.1		
	Japan	12.7	11.2	8.3	8.9	9.2	9.6	10.1	11.7		
	Russia	4.4	3.8	2.8	2.6	2.3	2.0	1.8	1.5		
	World	8.6	7.2	5.1	5.8	6.2	6.9	7.5	8.0		
Growth rate of GDP (%) (x_1)	USA	3.7	-1.5	-2.8	2.5	1.8	2.8	1.9	2.3		
	Germany	1.5	-2.8	-5.1	4.0	3.4	0.9	0.4	0.8		
	Japan	2.8	-3.6	-5.5	4.7	-0.6	1.4	1.6	2.0		
	Russia	5.2	-7.8	4.5	4.3	3.5	1.3	0.7	-3.7		
	World	5.5	-5.7	-10.6	12.8	6.1	2.7	2.7	3.4		
Current account deficit (% of GDP) (x_2)	USA	-0.9	-1.4	-2.7	-1.5	-3.7	-3.8	-3.5	-3.1		
	Germany	6.2	6.1	6.4	6.3	7.0	7.0	6.8	6.6		
	Japan	-5.3	-3.1	-3.3	-2.6	-2.6	-2.3	-1.9	-1.5		
	Russia	-22.1	-25.7	-28.2	-28.6	-28.8	-31.1	-23.9	-11.2		
	USA	8.5	9.3	9.6	8.9	8.1	7.4	7.0	6.3		
Unemployment level (% of able-bodied population) (x_3)	Germany	6.9	7.8	7.1	5.9	5.5	5.3	4.9	4.2		
	Japan	4.3	5.1	5.1	4.6	4.3	4.0	3.6	3.1		
	Russia	10.7	11.3	11.7	11.9	12.4	13.6	13.9	14.3		
	World	10.5	11.9	12.5	10.3	9.8	9.7	9.5	9.2		

Source: Verkhovskaya and Dorokhina (2015), Ministry of Economic Development of the RF (2015).

Table 2 Comparative analysis of existing approaches to the global crisis management

Comparison criteria	Approach to the global crisis management		
	Insurance	Political	Diversification
Sense of approach	Creation of financial layer	Monopolization of markets	Diversification of production
Way of realization of approach	–	–	–
At microlevel	Accumulation of reserves in case of crisis	Policy, monopolies, elimination of rivals	Diversification of products, refusal from specialization
At microlevel	Accumulation of profit part of budget	State policy of protectionism	Diversification of domestic production
Expenses (lost profit)	–	–	–
At microlevel	Reduction of rate of business development	High prices for consumers	Lack of economy on the scale
At macro-level	Reduction of population's living standards		High prices for consumers
Received results	–	–	–
At microlevel	Preservation of business, quick overcoming of consequences of crisis		
At macro-level	Preservation of domestic production, economy's quick overcoming of crisis		

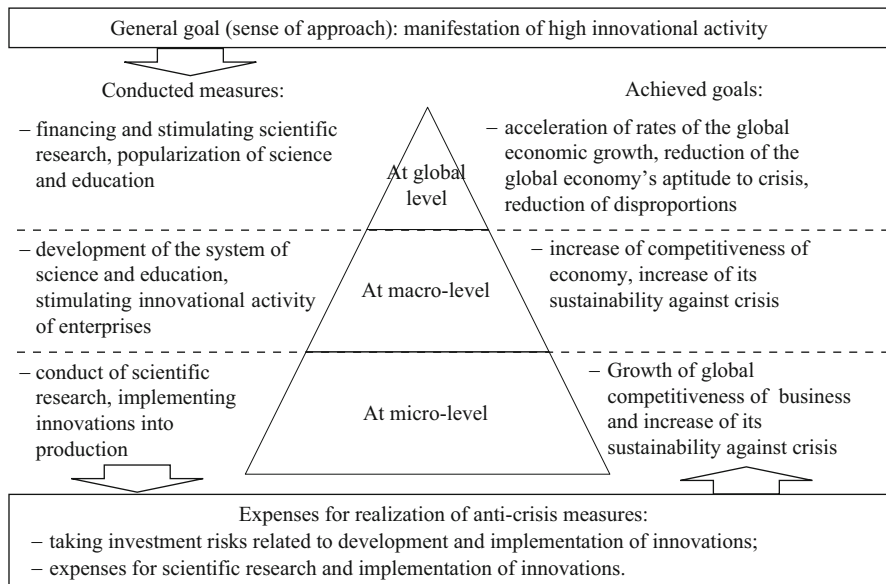


Fig. 1 Innovation-oriented model of global crisis management of entrepreneurial activities

This proves higher effectiveness of the offered innovation-oriented approach to the global crisis management of entrepreneurial activities as compared to other approaches and expedience of its use in modern Russia.

4 Conclusion

It should be noted that despite the foundation on the official statistical and analytical information, the performed calculations are rather conventional and are very precise. It is necessary to emphasize that while for modern Russia certain approaches were more effective than others and were used in a certain phase of economic cycle, it does not mean that this is a rule for all countries of the world. These are the limitations of the performed research.

Further perspectives of development of the theory of crisis management of entrepreneurial activities are seen in the light of approbation of the offered innovation-oriented model of the global crisis management of entrepreneurial activities of entrepreneurial structures, economic policy of states, and practice of international organizations for determination of drawbacks and perspectives of its improvement.

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Creation of Educational Clusters as a Direction of Global Management Within the Bologna Process

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Tatyana Plekhanova, and Olga Pavlenko

Abstract The purpose of this work is to verify the offered hypothesis, to study causal connections of Russia's joining the Bologna process, and to determine the perspectives of maximization of the effect from this process within the global crisis management. Theoretical and methodological provision of verification of this hypothesis and achievement of the set goal in this work includes the method of induction, deduction, synthesis, problem, systemic, and plan-fact analysis and method of study of causal connections. Empirical methodology of this research includes the method of horizontal (time) analysis and method of trend analysis. The authors determine the role of the Bologna process in solving the problems of the global crisis management, perform evaluation of economic and social effect in the sphere of global crisis management from implementing measures within the Bologna process, and substantiate the expedience and develop recommendations for creation of educational clusters for increasing the effect in the sphere of global crisis management from implementation of measures within the Bologna process, and offer the model of stimulating the cluster processes in the sphere of higher education within the global crisis management. As a result of the research, the authors came to the conclusion that the announced goals of the Bologna process have not been achieved in Russia. Perspectives of maximization of the effect from this process within the global crisis management are related to creation of educational clusters.

JEL Codes I23 • H12 • F02 • F62

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_66

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1 Introduction

Modern Russia is a full-scale participant of global socioeconomic relations. Close interconnection between the members of the global economic system predetermines their high exposure to economic crises, fighting which requires effective system of the global crisis management. An important aspect of the global crisis management is development of the system of higher education, which explains high topicality of research of transformation processes that take part in this sphere under the influence of Russia's joining the Bologna process.

A precondition for conduct of this research is the authors' hypothesis that modernization of the system of higher education in Russia did not lead to the expected effect, as the proclaimed goals of the Bologna process were not achieved. A perspective direction of maximization of effect from this process within the global crisis management is creation of educational clusters.

The purpose of this work is to verify the offered hypothesis, to study causal connections of Russia's joining the Bologna process, and to determine perspectives of maximization of effect from this process within the global crisis management.

2 Materials and Method

The conceptual provisions of the Bologna process are described in the works of Guccio et al. (2016), Soltys (2015), Zmas (2015), Tampayeva (2015), and Vögtle and Martens (2014) et al. Fundamental provisions that include the definition of the sense and scientific and methodological provision of global crisis management are set in the materials of the research by Bengtsson (2014), Christensen et al. (2016), Dowell (2016), Kiselev et al. (2015), Kundenko et al. (2015), etc.

The applied aspects of global crisis management, in view of specifics of its realization by the example of separate socioeconomic systems, are studied in the works by Lira et al. (2015), Morel and Chauvin (2016), Kravets et al. (2014), and Skiter et al. (2015).

Verification of the offered hypothesis and achievement of the set goal suppose the research at the fundamental and applied levels. For theoretical methodological provision of verification of the offered hypothesis and achievement of the set goal, this work uses the method of induction, deduction, synthesis, problem, system, and plan-fact analysis, as well as the method of studying the causal connections. The basis of empirical methodology of this work is comprised of the method of horizontal (time) analysis and the method of trend analysis.

3 Results

Let us perform evaluation of the economic and social effect in the sphere of global crisis management from implementation of measures within the Bologna process with the help of the described methods and distinguished indicators. The data for evaluation are given in Table 1.

As is seen in Table 2, dynamics of the studied indicators was unstable in 2011–2015, which does not allow stating the existence of a common favorable trend and shows insignificant social and economic effect. Modern Russian economic practice shows that real (factual) results of implementation of measures within the Bologna process do not correspond to the expected (planned) results. In particular, due to lack of connection between various universities, there was no growth of students and lecturers' mobility. Lack of financial resources (with universities and business structures) was an obstacle for extensive scientific research and creation and implementation of innovations.

The planned measures were insufficient for establishing close connection between the educational and labor markets—thus, employment of graduates in Russia is still a problem. Implementation of the two-level system of higher education created a possibility for earlier employment and reduction of the study period in universities (from 5 years within the specialist program to 4 years within the bachelor program). That is, instead of extension of the study period to 6 years within the master's program, a lot of students preferred to finish their studies with a bachelor degree, which led to reduction of the education level.

Based on the results of the performed evaluation and analysis, it is possible to conclude that despite the full-scale realization of the measures within the Bologna process, due to influence of initially unaccounted for institutional and financial factors, the planned social and economic effect was not achieved in modern Russia.

This situation could be improved and the desired socioeconomic effect could be achieved with the creation of educational clusters. The most important advantages of clustering in the sphere of higher education include the following:

Firstly, unification of several universities into an educational cluster will allow establishing close partnership relations between them. In addition to that, it is easier

Table 1 Dynamics of indicators of economic and social effect from implementation of measures within the Bologna process in Russia in 2011–2015

Effect	Indicators	Values of indicators for periods				
		2011	2012	2013	2014	2015
Economic	GDP (RUB billion)	39,762.2	41,457.8	42,882.1	43,447.6	43,722.7
	Number of PPP	1138	1323	1429	1409	1397
Social	Unemployment level (%)	6.5	5.5	5.5	5.2	5.7
	GDP per capita (USD)	23,951	24,063	25,033	25,636	25,411

Results of evaluation are given in Table 2

Source: Rosstat (2015)

Table 2 Horizontal and trend analysis of indicators of economic and social effect from implementation of measures within the Bologna process in Russia in 2011–2015

Effect	Indicators	Horizontal analysis changes in %					Trend analysis changes in %				
		2012/2011	2013/2012	2014/2013	2015/2014	2012/2011	2013/2011	2014/2011	2015/2011		
Economic	GDP (RUB billion)	1.04	1.03	1.01	1.01	1.04	1.08	1.09	1.10		
	Number of PPP	1.16	1.08	0.99	0.99	1.16	1.26	1.24	1.23		
	Unemployment level (%)	0.85	1.00	0.95	1.10	0.85	0.85	0.80	0.88		
Social	GDP per capita (RUB)	1.00	1.04	1.02	0.99	1.00	1.05	1.07	1.06		

for universities in a cluster to conclude partnership agreements with foreign universities.

Secondly, due to unification of universities and enterprises within the common cluster structure, close cooperation and information exchange between the labor market and higher education market are ensured.

Thirdly, unification of cluster members' resources during its creation stimulates creation of a synergetic effect that is expressed in increase of investment attractiveness and simplification of universities attracting the financial resources in the cluster.

This explains the expedience of creation of educational clusters for increase of effect in the sphere of global crisis management from implementation of measures within the Bologna process. For this, this article recommends to use the proprietary model of stimulation of cluster processes in the sphere of higher education within global crisis management—which is given in Fig. 1.

As is seen in Fig. 1, the purpose of the offered model is increase of effectiveness of global crisis management through improvement of the system of higher education management within the Bologna process. The way of achieving the set goal is creation of educational clusters. The subject of managerial relations in the context of this process is the state; the objects are universities and business structures.

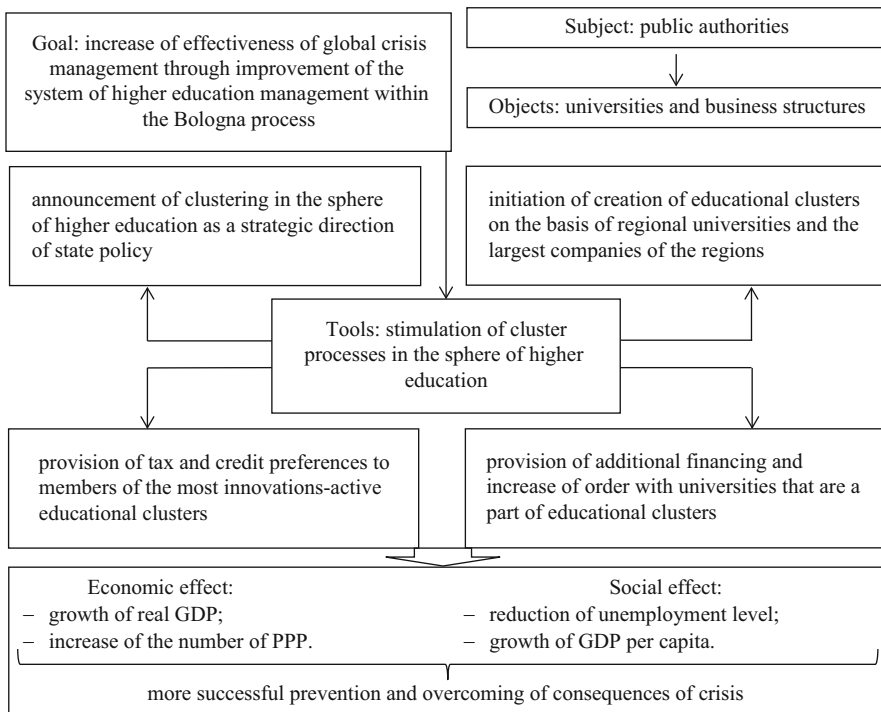


Fig. 1 Model of stimulation of cluster processes in the sphere of higher education within the global crisis management

4 Conclusion

Theoretical significance of the performed research for the modern economic science is manifested in contributing into development of the concept of clustering, concept of global crisis management, and concept of transnationalization of higher education system. Practical value of the received results consists in the possibility of application of the developed model of stimulating the cluster processes in the sphere of higher education within the global crisis management in the process of development and realization of modern Russia's state policy.

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Positioning of Hotel Services Manufacturers in Regional Market According to Ranking of Marketing Approaches: Methodology and Empirical Studies

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Abstract Timeliness, significance, and necessity for positioning of hotel services manufacturers in the conditions of unstable market environment are substantiated. The authors develop and appropiate methodology of positioning of hotel services manufacturers on the basis of ranking of marketing mixes that allows determining the position of hotel services manufacturer in the market depending on the level of use of marketing complex possibilities. The performed research proves that, based on the establishment of the position and level of use of marketing complex possibilities, hotels can form a strategy of hotel services marketing development that ensures orientation at a consumer, for the purpose of increase of satisfaction and loyalty of clients.

1 Introduction

In the recent decades, competitive struggle between hotel services manufacturers continued to grow. This tendency is peculiar for all countries of the world, including Russia. Under these conditions, conduct of marketing analysis and elaboration of hotel's strategy are especially topical.

The strategy should be based on adequate positioning of the manufactured product and focusing on product features that are significant for consumer (Bagiev et al. 2006; Pospelovskiy 2013). An important technology of marketing analysis of hotel services market and a strategy that allows increasing effectiveness of marketing activities in organization is segmenting of market and positioning of hotel in it.

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Scientific development of the positioning problems, including in service sphere, is viewed in the works by G.L. Bagiev, E.A. Luneva, D.V. Pospelovsky, D. Trout, etc.

Totality of these circumstances actualizes setting of the scientific problem of hotel services positioning in a regional market according to ranking of marketing mixes for the purpose of provision of satisfaction and loyalty of customers and strengthening of competitive advantages in the market.

2 Main Part

Success of functioning of hotels depends on positioning of the formed products and its attractiveness in the consumer's eyes.

Positioning is a complex of measures due to which the products occupy certain positions in the consumer's consciousness—as compared to the analogs (Volkov 2008; Prokofiev 2005). Position is a place occupied by the product in consumers' consciousness, as compared to the similar competing products (Volkov 2008).

In certain cases, positioning of services is treated in a narrower way—as one of the methods of competitive analysis. In this case, positioning is determination of service's competitiveness in the market or in the targeted segment as to similar services of other manufacturers. It should be noted that positioning, as a method of competitive analysis, is an initial stage of positioning of marketing strategy (Rozdolskaya et al. 2015; Luneva and Malygina 2010).

Positioning is a fundamental concept for attracting consumers and fuller satisfaction of demands of a market's certain segment. A large contribution into its development was made by marketing experts E. Rice and D. Trout who view positioning as a creative process of distinguishing product's features: "Positioning is not your action towards the product. Positioning is what you do with consumer's thoughts; you position the product in consumer's consciousness" (Trout 2007). For selection of marketing strategy of the enterprise, apart from rates of segment's growth and volume of segment, it is necessary to evaluate the enterprise's competitive position (Volovikov 2010; Plotnikov and Shamakhov 2015). Modern tools of marketing should expand communicative technologies of influencing the consumer and be careful while selecting the promotion methods and their application in practice, in view of specifics of a certain market segment (Shilenko et al. 2016).

In general, positioning could be defined as a purposeful effort of hotel services manufacturers to create a special position of a service or a hotel in competitive market. The purpose of positioning is the attempt of differentiation from rivals and creation of a unique image of services, brand, or enterprise.

Determination of the position of hotel services manufacturers at the regional market requires evaluation of their competitiveness. This requires characteristics of competing hotel companies (Table 1).

As a result of the comparative analysis, it is possible to conclude that the Belgorod, the Avrora, and the Vincent have the best location, this ensuring

Table 1 Characteristics of hotel services manufacturers of the Belgorod by the determined criteria (compiled by the authors)

Parameter	Hotel services manufacturers									
	Belgorod	Bely Gorod	AMAX Hotel	Congress	Vladimirskaya	Avrora	Mir	Belotel	Continental	Vincent
Number of rooms	433	37	271		37	119	24	25	148	26
Distance from downtown	Downtown	1 km	2 km		3 km	Downtown	4 km	1 km	1 km	Downtown
Minimal room cost per day (RUB)	2900	2300	2500		700	3500	900	1100	36,50	2900
Maximal room cost per day (RUB)	10,500	4900	8500		4500	12,000	3700	3500	10,500	5400

Table 2 Characteristics of infrastructure of hotel services manufacturers in Belgorod (compiled by the authors)

Parameter	Hotel services manufacturers									
	Belgorod	Bely Gorod	AMAX Congress Hotel	Vladimirskaaya	Avrora	Mir	Belotel	Continental	Vincent	
Billiard room	+	-	+	+	-	-	-	-	-	
Conference halls and equipment rental	+	+		+	+	-	+	+	-	
Mimibar	+	+	+	+	+	+	+	+	+	
Room service	+	+	+	-	+	+	+	+	+	
Restaurant	+	+	+	-	+	+	+	+	+	
Visa services	+	-	+	-	-	-	-	+	-	
ATM	+	+	+	-	+			+	+	
Payment kiosk machines	-	+	+	-	+	-	-	+	+	
Sauna and pool	+	+	+	-	-	-	-	+	-	
Massage parlor	-	+	+	-	+	-	-	-	-	
Beauty spa	-	-	+	-	+	-	-	+	-	
Children's room	-	-	+	-	-	-	-	-	-	
Souvenir shop	-	-	+	-	-	-	-	+	-	
Prayer room	-	-	+	-	-	-	-	-	-	
Free Wi-Fi	+	+	+	+	+	+	+	+	+	
Luggage locker	+	-	+	+	-	+	+	+	-	
Dry-cleaning	-	-	+	-	+	-	-	+	-	
Laundry	+	+	+	+	+	-	-	+	-	
Ironing room	+	+	+	+	+	+	+	+	+	
Business center	+	-	+	+	-	-	+	-	-	
Parking lot	+	-	+	+	+	+	-	+	-	
Car wash	-	-	+	-	-	-	-	-	-	
Transfer	+	-	+	-	+	+	+	+	-	

Taxi	+	+	+	+	+	+	+	+	+	+	+	+	+
Excursion services	+	-	+	+	+	-	+	+	+	+	+	+	+
Fitness center	+	+	+	+	+	-	+	+	+	-	+	+	-
Room safe	-	+	+	+	+	-	+	+	+	-	+	+	+

“+” —infrastructure element is present; “-” —infrastructure element is absent

transport and walking accessibility of the hotels, as well as developed external infrastructure; as to the capacity, the leaders are the AMAX Congress Hotel and the Continental, which allow accommodating more guests.

One of the criteria of positioning of hotels is analysis of infrastructure which largely determines the choice of accommodation. Determination of competitive position of hotels for development of infrastructure is presented in Table 2.

Analyzing the data of Table 2, it is possible to conclude that with similarity of internal structure of hotel services, manufacturers have a range of similarities for the guests who aim at leisure and business. It should be noted that the most competitive hotels are the AMAX Congress Hotel, the Belgorod, the Avrora, and the Continental; the Bely Gorod and the Vladimirskaaya need to strengthen their positions in the market of hotel services in Belgorod.

For realization of this, the methodology was developed, and the algorithm of evaluation of using the marketing mix tools was approved by hotels of Belgorod Oblast.

The offered methodology includes a range of consecutive stages:

1. Calculation of significance coefficient of each element of hotel services marketing complex
2. Expert score evaluation of each element of hotel services marketing complex
3. Calculation of a complex indicator that characterized the position of hotel services manufacturer in the market
4. Positioning of hotel services manufacturers in the region's market according to ranking of marketing mixes
5. Development of measures for increase of effectiveness of using the hotel services marketing complex

During the selection of separate indicators of hotel services marketing complex, it is necessary to find on characteristics of hotel services as a special product and on requirements set by state standards to services and consumer preferences in selection of a company that provides hotel services.

Based on information in teaching and scientific literature and on state standards, we distinguished the following separate indicators of hotel services marketing complex:

1. Marketing mix element "hotel product (service)":
 - Complex character of hotel services
 - Form and quality of services
 - Information services
 - Professional qualities of personnel and culture of servicing
 - Safety of hotel services for life and health of consumers
2. Marketing mix element "price":
 - Price of complex hotel product
 - Presence of pricing and non-pricing stimuli in purchasing hotel services

3. Marketing mix element “promotion (marketing tools)”:

- Image of hotel services manufacturers
- Novelty of hotel services
- Use of advertising means
- Loyalty programs

4. Marketing mix element “location”:

- Organization of contact area
- Façade, adjacent area, interior
- Furniture of public and residential premises, equipment
- Hotel’s working hours

For the purpose of evaluation of hotel services marketing complex, we implemented the unified 5-point scale with the following ranks:

- 5 points—value of marketing mix element fully satisfies consumers’ needs and exceeds their expectations from hotel services.
- 4 points—value of marketing mix element fully satisfies consumers’ needs and corresponds to expectations of hotel services’ consumers.
- 3 points—value of marketing mix element fully satisfies the consumers’ needs but does not fully correspond to expectations of consumers.
- 2 points—value of marketing mix element does not fully satisfy the consumers’ needs and does not correspond to expectations of hotel services’ consumers.
- 1 point—value of marketing mix element for this hotel does not satisfy consumers’ needs.

The selected indicators of hotel services marketing complex were ranked by experts, after which their weight coefficients were calculated (Table 3). The experts included consumers of hotel services of Belgorod Oblast.

Weight coefficients of indicators of each element of hotel services marketing complex were determined by ranking. Ranking consists in ordering the objects of measurement or indicators in the way of their preference according to importance or weight. The position occupied with such ordering is called rank. The higher the rank, the more important is the object.

Group weight coefficients and weight coefficients of separate indicators for each group were calculated.

Values of weight coefficients are calculated by the following formula:

$$g_i = \frac{\sum_{i=1}^n R_{ij}}{\sum_{i=1, j=1}^{n, m} R_{ij}}, \quad (1)$$

where n —number of experts

m —number of weighted indicators

Table 3 Weight coefficients of indicators of elements of hotel services marketing mix (compiled by the authors based on materials of the selected research)

No.	Indicators	Indicator rank	Weight coefficient
<i>Marketing mix element "hotel product (service)"</i>			
1.	Complex character of hotel services	14	0.12
2.	Form and quality of services	15	0.13
3.	Information services	10	0.08
4.	Professional qualities of personnel, culture of servicing	12	0.1
5.	Safety of hotel services for life and health of consumers	11	0.08
<i>Marketing mix element "price"</i>			
6.	Price for complex hotel product	13	0.11
7.	Pricing and non-pricing stimuli in purchase of hotel services	4	0.03
<i>Marketing mix element "promotion (marketing tools)"</i>			
8.	Image of hotel services manufacturers	7	0.06
9.	Novelty of hotel services	3	0.03
10.	Use of advertising means	5	0.04
11.	Loyalty programs	1	0.01
<i>Marketing mix element "location"</i>			
12.	Contact area organization	9	0.08
13.	Façade, adjacent area, interior	2	0.02
14.	Furniture of public and residential premises, equipment	6	0.05
15.	Hotel's working hours	8	0.06
Total		120	1

R_{ij} —rank of i indicator given by j expert

During calculation of weight coefficients, it is necessary to stick to the condition:

$$\sum_{i=1}^n g_i = 1.$$

According to the data of Table 3, the largest weight accounts for the indicators (the first most important indicators) that are related to the marketing mix element "hotel product (service)" (complex character of hotel services, form and quality of services, information services, professional qualities of personnel, culture of servicing, safety of hotel services for life, and health of consumers), as well as indicators that characterize cost of hotel services. Thus, we see domination as "key" indicators of hotel services of marketing complex of the indicators related to the mix "hotel product (service)," but not to the mix "promotion (marketing tools)."

This shows insufficiently high competitive environment in the market of hotel services in Belgorod Oblast and presence of perspectives of implementing the innovational hotel services and increasing the quality of services—due to which the main attention of consumers is paid to the purchased hotel service, but not to application of marketing tools of doing business.

The following five indicators are related to location of hotel services manufacturers: hotel working hours, organization of contact area, furniture of public and residential premises, equipment, and informational services and image of hotel services manufacturers.

Presence of pricing and non-pricing stimuli for purchase of hotel services, application of advertising means and loyalty programs, and implementation of new hotel services are the lowest indicators as to the rank—it is caused by lack of attention to consumers of hotel services from hotels. Thus, the lowest indicators of hotel services marketing complex are “novelty of hotel services,” “application of loyalty programs,” and “application of advertising means.”

The next stage in the determination of competitive position of hotels in the market for the use of marketing complex is their evaluation for the selected indicators according to the 5-point scale and summing up the received points (Table 4).

We selected the hotels (rivals) that provide similar services in the market of Belgorod and Belgorod Oblast and assigned the following numbers: (1) Yuzhnaya

Table 4 Scoring of indicators of marketing complex used by manufacturers of hotel services of Belgorod Oblast (compiled by the authors based on the materials of selective study)

No.	Indicators	Score of indicators of marketing complex								
		1	2	3	4	5	6	7	8	9
<i>Marketing mix element “hotel product (service)”</i>										
1.	Complex character of hotel services	4	3	5	4	3	3	4	4	3
2.	Form and quality of services	4	4	5	3	2	3	5	5	2
3.	Information services	3	3	4	3	3	3	4	4	2
4.	Professional qualities of personnel, culture of servicing	3	3	3	3	3	3	3	3	3
5.	Safety of hotel services for life and health of consumers	4	4	4	4	4	3	4	4	2
<i>Marketing mix element “price”</i>										
6.	Price for complex hotel product	4	4	5	3	4	4	5	5	3
7.	Pricing and non-pricing stimuli in purchase of hotel services	4	4	4	4	3	3	5	5	3
<i>Marketing mix element “promotion (marketing tools)”</i>										
8.	Image of hotel services manufacturers	4	4	5	5	3	3	4	4	2
9.	Novelty of hotel services	3	3	4	3	3	3	4	3	2
10.	Use of advertising means	3	3	4	3	2	2	4	3	2
11.	Loyalty programs	3	3	3	3	3	3	3	3	3
<i>Marketing mix element “location”</i>										
12.	Organization of contact area	4	4	5	4	4	4	5	5	4
13.	Façade, adjacent area, interior	4	4	5	5	4	4	5	5	4
14.	Used furniture of public and residential premises, equipment	4	4	5	4	4	4	5	5	4
15.	Hotel working hours	4	4	5	4	4	4	5	5	4

Table 5 Correction of score of indicators of hotel services marketing complex, used by manufacturers of hotel services in view of weight coefficients (compiled by the authors based on the materials of selective study)

No.	Indicators	Corrected scores of hotel services marketing complex								
		1	2	3	4	5	6	7	8	9
<i>Marketing mix element "hotel product (service)"</i>										
1.	Complex character of hotel services	0.48	0.36	0.6	0.48	0.36	0.36	0.48	0.48	0.36
2.	Form and quality of services	0.52	0.52	0.65	0.39	0.26	0.39	0.65	0.65	0.26
3.	Information services	0.24	0.24	0.32	0.24	0.24	0.24	0.32	0.32	0.16
4.	Professional qualities of personnel, culture of servicing	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
5.	Safety of hotel services for life and health of consumers	0.32	0.32	0.32	0.32	0.32	0.24	0.32	0.32	0.16
Integral indicator of marketing mix element "product (service)"		1.86	1.74	2.19	1.73	1.48	1.53	2.07	2.07	1.24
<i>Marketing mix element "price"</i>										
6.	Price for complex hotel product	0.44	0.44	0.55	0.33	0.44	0.44	0.55	0.55	0.33
7.	Presence of pricing and non-pricing stimuli for purchase of hotel services	0.12	0.12	0.12	0.12	0.09	0.09	0.15	0.15	0.09
Integral indicator of marketing mix element "price"		0.56	0.56	0.67	0.45	0.53	0.53	0.7	0.7	0.42
<i>Marketing mix element "promotion (marketing tools)"</i>										
8.	Image of hotel services manufacturers	0.24	0.24	0.3	0.3	0.18	0.18	0.24	0.24	0.12
9.	Novelty of hotel services	0.09	0.09	0.12	0.09	0.09	0.09	0.12	0.09	0.06
10.	Use of advertising means	0.12	0.12	0.16	0.12	0.08	0.08	0.16	0.12	0.08
11.	Loyalty programs	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Integral indicator of marketing mix element "promotion (marketing tools)"		0.48	0.48	0.61	0.54	0.38	0.38	0.55	0.48	0.29
<i>Marketing mix element "location"</i>										
12.	Organization of contact area	0.32	0.32	0.4	0.32	0.32	0.32	0.4	0.4	0.32
13.	Façade, adjacent area, interior	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08
14.	Furniture of public and residential premises, equipment	0.2	0.2	0.25	0.2	0.2	0.2	0.25	0.25	0.2
15.	Hotel working hours	0.24	0.24	0.3	0.24	0.24	0.24	0.3	0.3	0.24
Integral indicator of marketing mix element "location"		0.84	0.84	1.05	0.86	0.84	0.84	1.05	1.05	0.84

LLC (AMAX Congress Hotel), (2) the Bely Gorod Hotel Complex LLC, (3) the Aurora Hotel Complex, (4) the Belgorod, (5) the Mir, (6) the Belotel, (7) the Continental, (8) the Vincent (CENTER LLC), and (9) the Vladimirskaya. Selection of hotels for comparison is predetermined by the fact that they usually offer the same complex of services.

The next and last stage of evaluation of hotel services marketing complex is correction of the number of points in view of weight coefficients, as well as calculation and comparison of integral indicators of marketing mix elements, used by manufacturers of hotel services in Belgorod Oblast (Table 5).

Thus, based on the values of indicators of hotel services marketing complex, used by manufacturers of hotel services of Belgorod Oblast, presented in Table 5, the AMAX Congress Hotel, the CENTER LLC, the Vincent, the Aurora, and the Continental are the leaders as to the use of the marketing mix elements “hotel product (service).”

The results of the performed evaluation of application of marketing tools by hotels (rivals) that provide similar services in Belgorod and Belgorod Oblast’s markets showed that they do to have a vivid competitive advantage as to the use of marketing tools as to each other (Fig. 1).

At that, based on establishment of the position and level of using the possibilities of marketing complex, the hotels of Belgorod Oblast can use them during selection of the strategy of development of hotel services marketing and ensure its orientation at consumer for the purpose of increase of satisfaction and clients’ loyalty.

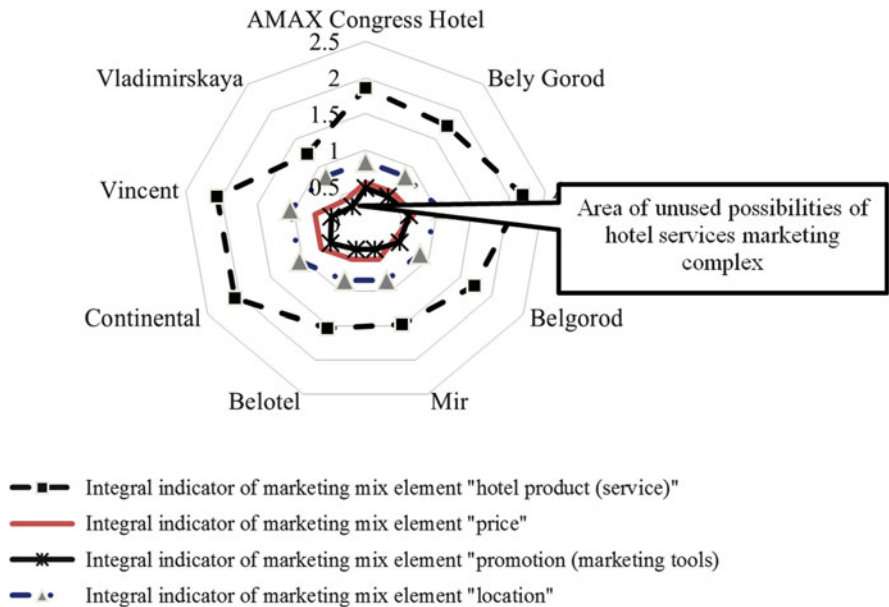


Fig. 1 Positioning of hotel services manufacturers in Belgorod Oblast’s market according to ranking of marketing mixes (developed by the authors based on materials of the selected study)

3 Conclusions

Positioning analysis is based on the results of marketing empirical research, is related to technique of market segmentation, and is a basis for development of marketing complex. Treatment of a hotel service as a product predetermines the necessity for a special approach to positioning in the service sphere.

At that, the performed research process showed that achievement of satisfaction of hotel services' consumers requires constant monitoring of not only dynamics of quantitative indicators of market situation development and quality of provided services but the use of marketing tools of doing business. Nonsystemic application of certain elements of marketing complex defames this approach, while the totality of correctly selected tools of traditional, internal, and interactive marketing, used on a systemic basis, will allow maximizing achievement of the targeted indicators of all subjects of market interaction: consumer, hotel's personnel, and hotel services manufacturers.

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Sustainable Competitive Advantage of the International Business Tourism on the Regional Level

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Abstract Business development, in accordance with the principles of sustainable development, is a challenge in this century. Sustainable development is one of the most common axioms used in the field of tourism. Although international tourism literature determines that the business world widely accepts the concept of sustainable development and corporate social responsibility (CSR), a study that links the social and financial results is limited. Practical recommendations for the tourism business activity development can be applied in the regional, national, and international business travel market. This article reveals the cooperation process between foreign private companies and the local government in organizing the development of the industry connected to meetings, incentives, conventions, and exhibitions (MICE).

1 Introduction

Sustainable development of businesses is one of the common and rapidly growing topics in the field of sustainable tourism.

The issue of business sustainability and how this concept is being translated into daily practice has been dealt with for quite a long time. Understood as a system's capacity for self-preservation and renewal, business sustainability has been intensely debated for more than three decades, when researchers and practitioners began to be fully aware that the exploitation of natural resources would surpass in scope the possibilities of their being reproduced. As the gap between the consumption of natural resources, so needed to ensure mankind's living, and the pace of their renewal will widen, this will impact on both the environment and the amount of resources and raw materials available to future generations. The Bruntland Report published by World Commission on Environment and Development stated that public and private organizations should assume greater responsibility for their

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activity in general and, in particular, for their actions, strategies, and tactics which affect the environment or society. The Commission Report was the first to officially approach sustainable development which was defined as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”).

According to researchers, sustainable development of a business means finding those market opportunities that allow the company to generate a competitive advantage by the harmonious and synergic blend and integration of economic, social, and environment dimensions. The sustainability of the economic dimension refers to the whole range of activities pertaining to a business’ sales, profits, cash flow, or number of jobs created. The environment dimension refers to the air or water quality, the (cost-)effective use of energy, and the recycling or reuse of waste produced by production processes. The social aspects pertain mainly to the rights of employees, the impact of supplied products and services on the local community, the safety of production processes, good practices in the workplace, labor protection, etc.). The concept of sustainable development is still subject to a constant revision while researchers are more and more concerned with the need to address it.

The global tourism market is exposed to internationalization processes and as a result is forced to apply modern strategies, offering consumers innovative ways of tourism (Borodako 2014). Issues connected to the business communication, a requirement in the continuous interaction of business participants, form a new way of thinking in the tourism industry evolution: “business tourism development.” This article reveals the concept of international business tourism.

The main goal of this study is to justify the strategic orientations and effective operation of institutional arrangements of the meetings, incentives, conventions, and exhibitions (MICE) industry, due to the global transformational changes to enhance the internationalization of the actors in the tourism business activity.

The methodology used in this research was to do a systematic analysis of national and regional components of the tourist services market, in the course of which systematically as well contributing factors as well as negative influences on the economic actors of the tourism business activity have been identified and described.

2 Meetings, Incentives, Conventions, and Exhibitions (MICE) Industry: The Scope of the Notion and Key Elements

The concept of MICE or meetings industry (MI) was introduced in 2006 in accordance with a decision carried out by the International Congress and Convention Association (ICCA), the Meeting Professionals International (MPI), and the Reeds Travel Exhibitions and the World Tourism Organization (UNWTO) in an

attempt to standardize concepts and create a stronger image of the sector (Davidson and Cope 2003; Dwyer and Forsyth 1997).

By the authors Marques and Santos (2016), the Destination Management Organizations (DMO), and more specifically the Convention and Visitor Bureaus (CVB), play a key role in the supply structure associated with the territory and in the management, planning, and development of tourism destinations, especially those which want to assert themselves as successful business tourism destination.

Today, countries all over the world are putting effort in developing the MICE industry as a means to improve the national economic development.

Governments of developed and developing countries have awoken to the fact that hosting these kinds of meetings is a vital form of global engagement—both economic and intellectual. They are adding MICE development to their economic policy statements because they see MICE as key to their economic development strategies (Kuokkanen 2013).

3 Business Tourism Destination

Realizing the urgency of identifying the reasons of increasing income from the service sector in the GDP of developed countries at the present stage of the world economy development, we consider it appropriate to consult authoritative economists who have devoted their studies to the service sector, international trade in service market in particular.

For example, Christopher Lovelock, a widely recognized expert in the field of services, control theory, and service organizations, says: the development of services includes government policies, social changes, business trends, development of information technology, globalization, and the internationalization of service organizations (Lovelock 2010).

Its dynamics depends on the content of activities, and it is critical from the standpoint of the development of a modern economy based on knowledge and national competitiveness. Porter (1990) provides illuminating insights into how nations can improve competitive advantage in an age of globalization.

There are four main determinants of national competitive advantage: factor conditions, demand conditions, firm strategy, structure and rivalry, and related and supported industries (Porter 1985).

However, in order to have positive results, the individual companies, the company leaders, and the national governments need to work together.

According to M. Porter's Approach to Globalization, we formulate an idea of the PPP that allows strengthening trust between the government and business representatives on the regional level.

Some authors, such as Goymen (2000), Marques, and Santos (2016), consider that the creation of an organizational structure (CVB) using the common interests of stakeholders can be seen as an example of PPP on the regional level.

Consequently, the existence of a CVB is required to promote cooperation between stakeholders and to pressure local, regional, and national authorities in order to develop harmonized policies, appropriate branding, and marketing strategies in the particular territory (Zahler et al. 2014; Kim and Kline 2010).

4 Cooperation of Foreign Private Companies and the Local Government Connected to Meetings, Incentives, Conventions, and Exhibitions

The concept of “business tourism,” “MICE,” and “MICE technologies” is increasingly common in the travel packages offered by major tour operators and event companies. Following the recommendation of ICCA, most experts use the term “meeting industry” as a general notion; the term “MICE” is also used.

The structure of the business tourism market (see Fig. 1) is a comprehensive and multidirectional range of services for organizing various events’ business focus. In this case, we tried to do the segmentation of the business tourism sector by combining two kinds of activity: industry meetings (meetings industry/MICE) and corporate travelers’ industry (travel industry) (compiled by the author).

Issues to influence the facts that determine the trends in the global business tourism market are relevant to the modern tourist segment of the world economy; each factor deserves special observation and research.

The author determined that the increase in the number of events is relevant to the increase in implemented business projects and profit growth business entities of tourist destinations (see Table 1).

Every year countries and cities around the world are forcing for the top positions and rankings, according to the number of conformed major meetings. The MICE-related events affect innovative processes for the economy and society and produces new technology development at regional and national levels (Dredge and

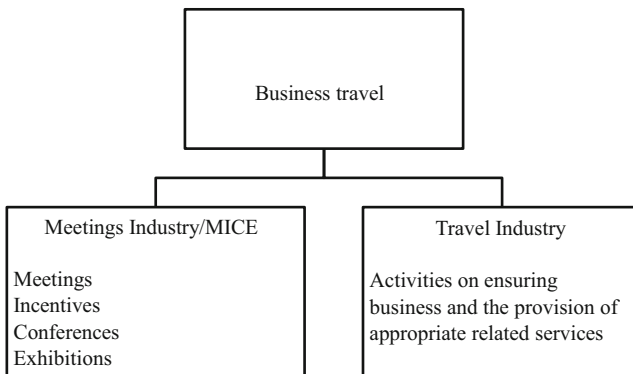


Fig. 1 Business tourism structure. Source: compiled by the author

Table 1 Top countries and cities meetings ranking in 2014–2015

Top countries ranking, according to the number of conformed major meetings				Top cities meetings ranking			
Country	2014	Country	2015	City	2014	City	2015
USA	759	USA	831	Vienna	181	Paris	214
Germany	577	Spain	578	Paris	174	Barcelona	182
Spain	463	Germany	659	Barcelona	150	Madrid	200
UK	434	France	533	Berlin	147	London	166
France	428	UK	543	Singapore	142	Vienna	202
Italy	363	Italy	452	Madrid	130	Amsterdam	133
Brazil	304	Australia	260	London	115	Berlin	193
China	302	Japan	337	Amsterdam	114	Istanbul	130
The Netherlands	291	Canada	265	Istanbul	113	Copenhagen	105
Austria	267	The Netherlands	307	Beijing	111	Singapore	142

Source: The International Conference and Convention Association (ICCA) publication (electronic resource). Mode of access: <http://www.iccaworld.com>

Whitford 2011). That is why the MICE is the catalyst of the rapid development of modern business and communication infrastructure.

Marques and Santos (2016) noted that the areas with lower population density and lower supply of services and facilities have positioned themselves in this segment in order to attract a larger number of visitors and boost tourism, especially at the level of accommodation facilities situated in nonurban areas that have been able to adapt to the demands of this segment and contribute to meetings conducted in quieter places.

Throughout this process, the action of specialized organizational structures such as the CVBs proves to be of great strategic importance.

Gunn (1972) was the first person to conceptualize a tourism system. In his simple early model, he noted that attractions drive tourism. A corollary of this conceptualization was that as magnitude of the attraction increased, the number of visitors was likely to increase. This corollary was analogous to the theory of cumulative attraction, which had been formulated in the context of retailing.

According to the survey of governmental and business authorities of the Russian region, Rostov Land, which was made by the Regional Chamber of Commerce of Rostov Land and business tourism organizations of Rostov-on-Don, since 2014, the majority of tourists visited the region are business tourists. In the frame of the governmental program of tourism development, business tourism is one of the significant elements for investment development and brand creation of the region in Rostov Land (Fig. 2).

As we mentioned above that CVB plays a significant role in the attraction of tourists and promotion for territories, and based on the potential of resources and

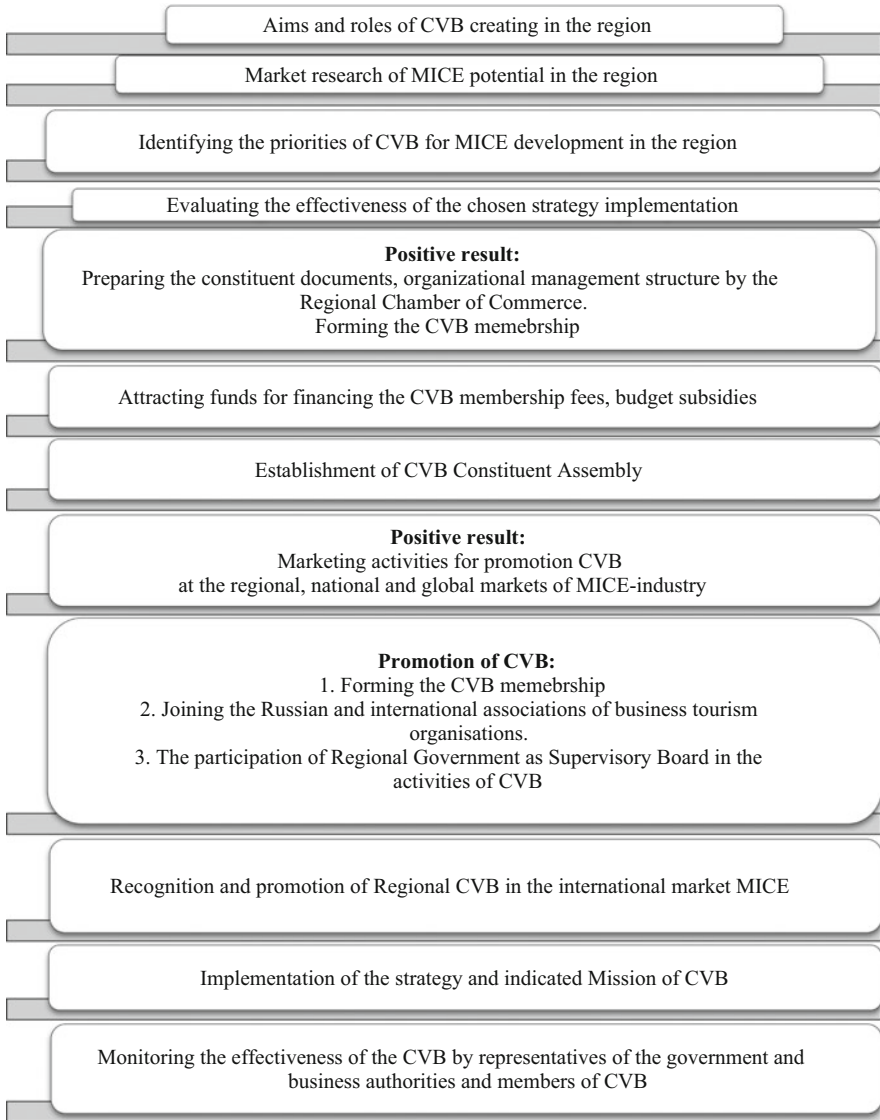


Fig. 2 The structural steps VCB creation and implementation in the region. Source: compiled by the author

possibilities, the structure of creation and implementation of CVB in the region is presented above (see the picture).

Therefore, contributing to the growth of the regional economy and prosperity of the region and its individual cities is a consequence of the functioning of the business travel industry.

5 Conclusions

Meanwhile, as a support of the development of corporate communication and cooperation between business structures in the formation of a platform of PPP on regional and national level, the players of the national market of business tourism are joining forces to promote MICE opportunities in Russia.

As we analyzed in this study, the PPP in tourism sphere is a significant instrument of stabilization and economic development in Russian Federation. This research paper described a definition of PPP and described its modern status in Russia and described reasons for the necessity of the development of this sphere of the economy. This article shows general tools and methods of classification of the regions according to the necessity in the governmental investments for the development. The author of this article described and analyzed the main ways of the development of the PPP in the tourism sphere in Russia. This research paper has given successful example of the creating PPP projecting Russia.

The practical implementation of the research findings and results of this paper is important for the business tourism development on the regional level and CVB implementation as a key tool in the supply structure associated with the territory and in the management, planning, and development of tourism destinations, especially those which want to assert themselves as successful business tourism destination.

The current research clearly reveals that the aspects that support sustainable development may also build tourists' satisfaction with the accommodation units. Even if only exploratory in nature, our endeavor needs further research and analysis by other authors to reveal even more clearly how sustainable development may contribute not only to draw individuals to a particular destination but also to build their satisfaction and loyalty. The components of sustainable development may actually take the form of marketing stimuli for the informed tourist who wishes to leave the future generation a lasting legacy and become elements generating competitive advantage, which contribute to differentiating products and services and to attracting customers.

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Management of Industrial Enterprise in Crisis with the Use of Incompany Reserves

E. Garina, V. Kuznetsov, S. Yashin, E. Romanovskaya, and Y. Potashnik

Abstract Crisis signs in the global and domestic market are growing, which pre-determines the necessity of searching for variants on how to increase management effectiveness and provide stability growth. The article is devoted to the learning and generalization practices that help to manage the enterprise in crisis conditions, for the purpose of integrated control. The solution for a scientific problem, which is connected with theoretical and methodological basis and practical recommendations for crisis management, is supposed to be implemented with the help of incompany reserves. Authors suggest to solve the problems (problems connected with theoretical and practical recommendations and crisis management implementation) with the usage of management changes; to be more exact, authors offer to improve the quality of the product, change technological processes, prime cost reduction, and implement the process management. The authors assess the management effectiveness, using as the example one particular plant. Authors suggest the ways on how to improve production effectiveness using the throughout integrated management and international ISO standards ISO/TS16949.

JEL Codes D20 • D23 • D24

1 Introduction

Domestic practices that are dedicated to crisis management at enterprises are analyzed. It reveals the problem that is formulated as follows: “How to guarantee effective management in the condition of restricted funding and governmental

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regulation, using incompany resources, incompany reserves and intellectual potential.”

Besides that, there are no works that are dedicated to theoretical basis of management in capital-intensive branches, for example, mechanical engineering in the conditions of structure-institutional transformations in the economics. In such conditions, we can notice production decline and consumption decline; these spheres are very difficult to restore in short time. But these spheres have the biggest innovative potential, and their modernization is the priority direction in order to achieve the goals that are set by the Russian government. The aim is to renew Russian economics and achieve leading positions in the global economics. A set of those circumstances determine the choice of the research topic and the goal. The goal is to work out theoretical and methodological basis for management system in the crisis conditions, using incompany reserves.

2 Materials and Methods

Taking into account some vital restrictions in crisis management system, we suppose that the problem can be solved by the strategic improvements at the enterprise. Such strategies usually can be used at the transition moment, when the enterprise transfers from functional management to process management. The program is implemented in the condition of strict funding restrictions, but technical modernization is partly implemented. The changes are implemented due to the transition to ISO standards. Also the operating efficiency is increased. These processes are typical for Russian enterprises.

Studying the works that touch upon the mentioned problems, we come up to the conclusion that the starting point for high-efficient management system in crisis conditions can be a business process, which is called quality improvement. This process is in priority, because mainly enterprises produce products according to the technological papers and all the business processes are connected with these papers. As for international ISO standards from 9000 series, they play the role of optimization elements and they help to work according to changing market demands (Romanovskaya et al. 2015). The theoretical basis for this problem is the works of E. Deming, D. Guran, K. Isikawa, I. Kobayasi, H. Kume, M. Meskon, and others. They consider radical changes in management system and ISO standard implementation to be the best ways to solve the problem. In our article, quality is supposed to be the combination of vital showings that can be assessed with the help of technical-economical system. These showings differentiate the products and determine demand in market conditions, where prices are formed by the market.

The object of the research is “GAZ Group” holding that has all characteristics that the national production sector has. Such approach lets us simplify the collecting of raw data and shorten time of the research. The subject of the research is the quality management system at the GAZ metallurgy production. According to our aim, we can name the following criteria: (1) Asses current management system,

using modern ISO standards; (2) offer ways on how to improve management effectiveness; (3) suggest ways on how to improve management using international ISO standards (ISO/TS 16949); and (4) reveal incompany reserves for prime cost reduction.

3 Results

“GAZ Group” is the biggest Russian auto making holding that unites 18 enterprises in ten Russian regions. Also it unites sale and service departments. The company tries to modernize production, and in 2000 it invested a lot in management system, tools, and process management. The projects were quite big, so they took part in special standard areas. These areas were responsible for a particular technological part. For example, one of the standard zones was metallurgical production JSK “GAZ.” On August 4, 2013, the metallurgical production was certified by the certification association “Russian Register.” Aluminum and other nonferrous metals were admitted to be suitable for ISO 9001:2008 (certificate No. 13.0863.026 dated August 4, 2013). The quality management system MP JSK “GAZ” was created to manage and permanently improve results and efficiency. There are some special requirements for production: planning, logistics, and management.

The most important document for the system is quality management. Table 1 introduces the main quality showings. It helps to monitor the situation and maintain quality.

For every achieved showing, the workers automatically get 2.5%—it means that bonus sum is 10%; if the factual showing is higher than target showing, the showing size is 0. The reasons for the failure are new material implementation, equipment fixing, supply changing, and other criteria. All these lead to quality layoff and to showings’ layoff.

People who monitor and measure showings have a special study program and assessment program. Special attention is for process failure (external and internal risks); the risks are introduced in Table 2.

In order to prevent mismatching, some correction activities are being developed. One of the examples is “strategic development for metallurgic production.” The results are introduced in Table 3.

One more very important element of preventive measure is investment projects. Implementation of the investment projects in metallurgic enterprises are introduced in Table 4.

Management of JSC “GAZ” provides metallurgic production with necessary support in the form of investments and methodological HR resource. Dynamic is introduced in Table 5.

Increase in production volume happened because new customers were attracted in order to try new casts. In 2015, we have achieved 3.9% growth in comparison with the previous year.

Table 1 The desired quality showing MP (Garin 2013)

No.	Division “auto-detail” quality showings for MP	2014 (%)	2015 (%)
1.	Number of 50-score defects, according to audit, which used CSA method 50, p./score sum according to 50-score defects CSA for 1 car	0.09	0
2.	Defect level in input control and during assembling time in LLC Avtozavod “GAZ”, “PAZ”	0.06	0.06
3.	Customers’ problems, connected cooperation and production, supplies in LLC “Nizhny Novgorod engines”	1.38	1.45
4.	Defect level in input control and during assembling time for inner customers, inside JSC “GAZ” in ZAAG and PAKRU JSC “GAZ,” %	0.96	0.96

Table 2 External and internal risks (Kuznetsov and Romanovskaya 2011)

No.	Process risks	Measures to prevent	Measures in case of risk
1.	Material supply is failed or happen later	Basis stock is created and some alternative suppliers are found	Alternative materials are used and the supplier is changed
2.	Workers are not qualified	Teach staff for connected professions	Attract staff from related business
3.	Equipment doesn’t work	Develop variants on how to produce in different department. Routine maintenance for equipment	Use another department for production and take measures in order to fix equipment as soon as possible
4.	No electricity, no gas, no water supply	Routine maintenance. Preventive measures for infrastructure	Take measures in order to restore resource supply
5.	There is no intercommunication	Routine maintenance for equipment and lines of communication	Mobile connection, courier for transferring information
6.	No transport	Use other brunches’ transport	Use other brunches’ transport
7.	There is no data support	Routine maintenance and prophylactics of the computers	Manual processing of the information. Take measures in order to restore computers
8.	Restructuring	Coordinate changes in mechanization with top managers	Correct mechanization
9.	Not enough workers	Stimulate personnel	Redistribute workers

So, we want to emphasize positive dynamic in management system development and particularly in quality management at JSC “GAZ.”

The customers’ demands become stricter, and today the idea of certifying the production for ISO/TS 169494 standard is quite acute. This standard is based on the structure of ISO 9001:2008 standard, and it includes some additions (Grishin 2013). To achieve this aim, the following procedures have to be done:

1. Implement SPC—tools to manage the processes. SPC must be tried on the preproduction bunch, or at least all the special characteristics must be discussed with the customer.

Table 3 Strategic development for metallurgic production (Hackman and Wageman 1995)

Strategy	Goals	Activities
Orienteers for strategic development	1. Opportunity to cast for different brunches 2. Opportunity to use import substitution	1. Attract new clients and partners from different spheres
Opportunities for changes	1. Existed production can be downloaded by the traditional customers. Also strategic partners can be found	1. Organize new collaborations in order to improve cast quality and implement new technological processes
Potential strategic benefits	1. Opportunity to attract new customers 2. Use modern equipment efficiently in order to satisfy customers' quality demands for the production	1. Attract new customers from different spheres 2. Increase efficiency by using equipment effectively
Get rid of unprofitable production	1. Refuse from unprofitable products 2. Cost saving	1. To free working areas 2. Implement "pull system"

Table 4 Implementation of the investment projects (Kanivec et al. 2005)

No.	Activity	Sum (thousand RUB)
1.	Set fume cleaning equipment in the area of bentonite supply and in the sand shop No. 8	2102.05
2.	Implement HTS process in the casting shop No. 7	38,597.25
3.	Bought and set equipment for the canteen No. 27	186.84
4.	Old equipment changed by new more efficient in casting shop No. 8	173,225.40
5.	Fire safety measures	5191.91

Table 5 Technical and economic performance (Kanivec et al. 2005)

Showings	Period		Absolute deviation	Growth temp %	Rate of increase (%)
	2014	2015			
1. Overall volume in physical term	103,753.0	107,992.8	4239.8	104.0	4.0
2. Profit after selling goods, works, services (RUB mln)	4690.8	5131.5	440.7	109.0	9.0
3. Product prime cost (RUB mln)	4573.4	4558.8	-14.59	99.6	-
4. Gross profit (RUB mln)	117.4	572.7	455.3	487.8	387.8
5. Number of workers	1918	1810	-108	94.36	-
6. Annual fix and assets value (RUB mln)	1384.0	1426.2	42.2	103.0	3.0
7. Annual floating assets rate (RUB mln)	49,816.4	46,500.0	-3316.4	93.34	-

2. Implementation of FMEA. FMEA constructions help the development process and decrease the refuse rate. It happens due to objective assessment, alternative constructions, help with the demands for production and assembly, effective structural test, and analysis of the demands to change the construction.
3. Implementation of MSA. The main assessment criteria for measurement system; percent of measurement system investment; number of the visible showings; and number of discretion categories (Ulrich and Eppinger 2000).
4. Implementation of the management plan. According to ISO/TS 16949, it is recorded system description and process description. That is demanded for product management.
5. ISO/TS 16949 implementation at the enterprise.
6. APQP is the most important procedure ISO/TS 16949 and the most difficult, when it is necessary to connect input and output at all stages, taking into account all the peculiarities of the enterprise. All the APQP stages are dedicated to one goal—to achieve the expectations of the customers.

4 Discussion

Assessment of the complex product development that is based on modern management methods led us to the following conclusions:

1. The necessity of process management as the main part of quality management is scientifically justified. According to ISO 9000 process, the combination of connected activities changes input and output. Shortening hierarchic levels of the organization structure helps to simplify information exchange between different departments. Process approach is characterized with bigger opportunity for improvement and especially compared with functional approach. It is very important in the conditions of high competitiveness.
2. According to ISO 9001:2008 standard elements of the management system put in order, it helps to determine further direction for development. The main document for quality management system is “quality management policy.” Using this policy, target showings for production, shops, and structural branches are developed. To achieve target showings, the workers’ activities have strict regulations according to post descriptions.
3. The methodology for quality management system is developed; in ISO/TS 16949 standard, this methodology lets the auto making enterprises be suitable for all modern requirements in this sphere. The vital difference between ISO/TS 16949 and ISO 9001:2008 is that there are six documented procedures or quality tools: SPC, MSA, FMEA, APQP, PPAP, and QSA—all these procedures must be used in the production.

5 Conclusions

After conducting the research, we've come up to the conclusion that some changes in management system must be done. This system can be used in crisis time. Crisis management can be used as an alternative management system. Determination of the management criteria and optimization criteria is a task for every particular case. The main task is to clarify perspectives and take measures for anti-crisis regulations, using incompany reserves. The first stage for a highly effective management system in crisis time is to increase quality of the product in crisis conditions. Increasing product quality is a priority, because in this process all business spheres are included.

Quality system management leads to positive outcomes: decreased wastes, minimized defects, simple and flexible standards, and maintenance of good reputation.

Acknowledgment This work is supported by the grant 15-02-00102 "Creating a mechanism for managing innovative development of an industrial region (by the example of the Nizhny Novgorod region)" of the Russian Foundation for Humanities.

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Theoretical Model of Institutional Design of Waste Treatment Regional System

Anna V. Lavrentyeva, Anastasya A. Orlova, and Mikhail D. Dzhikiya

Abstract In the article, the main mechanisms and ways of designing institutions are analyzed, and their main peculiarities are represented. The multistage model of institutional design including a set of targeted institutional changes implementation phases is elaborated. The institutional design mechanism with institutional anomalies' monitoring and deactivation functions is given.

Mass universal integration of the best standard institutions (as analogues to the best microlevel practice) in the framework of the liberal Washington Consensus Doctrine failed to assist developing countries in providing sustainable economic development and failed to decrease social inequality. According to V. Polterovich, the ineffective reforms revealed the lack of scientific data on managing macro-institutional development and the need for introducing institutional economic changes. This is what he writes: "A reform is a purposeful institutions alteration, which implies economic system agents, which elaborate and implement the transformation plan" (Polterovich 2007). In the above-given interpretation of a reform, the emphasis is put on institutions, as key reform objects, and on the alterations' agents, both developers and executors. A group of the Higher School of Economics scholars clarify the definition of a "reform" in the following way: "A reform is a way of carrying out institutional changes" (Kuzminov et al. 2005). The scholars put special stress on the mechanisms of changing the institutions being reformed.

The group of Higher School of Economics scholars clarify the term "reform," which is "a way of conducting institutional changes" (Kuzminov et al. 2005), additionally putting the stress on the mechanisms of changing the institutions, being reformed.

The main mechanisms of the developed and controlled institutional changes in economics are:

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- (1) The mechanisms of intersystem copying (“transplantation”/import, imitation of exogenous institutions)
- (2) The mechanisms of intrasystem construction (“raising” institutions), including:
 - Modification, transformation, and modernization of exogenous (“transplanted”) and endogenous institutions
 - Restoring former experience institutions
 - Promoting new endogenous institutions

According to the classical conception of “transplanting” the institutions, the key to this process’ success is the institutional environment of the recipient-country. V. Polterovich underlines that “accepting a new institution by its agents and its sustainable functioning depend on transformation costs” (Polterovich 2001), i.e., costs of intersystem copying and these costs’ correlation with the transaction costs of using this institution in a new environment. At the same time, the aforementioned costs are determined by the “recipient-country institutional structure and cultural environment” (Polterovich 2001), i.e., exogenous institutions. Under the influence of exogenous institutions, the “transplanted” institutions and their components begin “mutating,” undergoing stochastic modifications and transformations in the course of adapting to the new functioning conditions. These negative changes’ logic has been interpreted from the evolutionary theory’s point of view, where the externalist conception has played the leading role so far and proclaimed the importance of external environment to the evolution. Along with it, the biologic externalist conception has been widely criticized since the beginning 1980s. Biologists actively try to reveal the stereotype about the external environment, as a key natural selection factor, which states that organisms are passive adaptors to exogenous changes and genetic information “translator.” Evolutional changes (dO/dt) have been traditionally considered dependent both on certain organisms and their groups (O) and on their habitat (E), whereas the environmental changes (dE/dt) were viewed as independent from the organisms’ activities: $dO/dt = f(O, E)$, $dE/dt = g(E)$. The attempt to reveal the traditional evolutionary theory’s externalism resulted in modernizing the formula $dE/dt = g(O, E)$ (Lewontin and Bendall 1983), which in turn caused the evolution’s reconsideration as a process of continuous direct and inverse interactions between organisms and their ecological niches with the stress on an organism’s selection of environmental resources and on its transmission of the reconstructed environment to new generations (Frolov and Lavrentyeva 2013). This conception was further titled “niche construction.” Applying it in the institutional theory can become a fruitful step toward further economic institutions “transplantation” conception’s development and construction of an institution as a whole.

Methods of designing institutions include a set of principles and targeted institutional changes’ implementation stages. Institutional designing principles are divided into two groups—conceptual and operational. Conceptual principles characterize general methodological concepts, reflecting the modern understanding of institutions and their evolution. Operational principles define the most significant and invariant components of institutions’ designing (Collis et al. 2004).

Institutions' designing process can be divided into separate stages. For example, according to Ya. Kuzminov, "raising" institutions implies four stages (Kuzminov et al. 2005):

- Monitoring: analyzing the existing economic behavior models, making groups of interest a potential force for supporting and counteracting an institutional change
- Elaborating an institution's model: preparing alternative reforms projects by competing interest groups, projects' public discussion
- Ratifying an institution's model: ratifying a set of documents, formalizing an institution, stating the institution's goal and the demand for it, analyzing the socioeconomic effects of preserving current institutional systems' equilibrium, calculating and planning the resources (financial and intangible resources), elaborating a program for monitoring the institution's application and a program for educating and informing the agents
- Correcting: analyzing the new institution's yearly functioning, making up amendments

The current common (standard) methodology of designing institutions:

- Has variable principles, stages, and their content, depending on the authors' theoretical views
- Ignores the role of the changes' subjects to a great extent
- Ignores the number of institutions' efficiency quantitative indicators
- Ignores the importance of institutional anomalies, including the risks and their possible ways of elimination

Combining the aforementioned approaches, we can draw a multistage model of institutional design, including the following stages:

1. *Preliminary stage*

- 1.1. Analyzing the demands for institutions and detecting institutional anomalies and acting institutions' inefficiency factors that need to be surmounted.

The macroeconomic systems' feature is the difference of their elements and structures, which is determined by an institution's life cycle, its adaptive mechanisms, its level of integrity in the institutional system and heterogeneity, caused by the institutions' heterogeneity, as they are the macroeconomic systems' key institutions. The diversity of modern development institutions allows to define the level of satisfaction with institutions, comprising a macroeconomic system with a whole set of quantitative-qualitative space and time and other features, in particular: the scale of an institutional system's changes (controlling functions, the system's nature, the system's response speed), an institutional system's resources and integration scale, an institutional system's final forms, life cycle, basic characteristics, its role in the economic regulation, its maturity, the ways to change it, its role in accumulating and distributing the finances, its field of activity, and its role in forming an institution. Taking into account the

macroeconomic systems' complexity, it is worth distinguishing between a general and partial satisfaction with institutions within the system. The general satisfaction reflects satisfaction with an institution as a whole, whereas partial satisfaction is satisfaction with an institution's certain aspects or subsystems. At the same time, general satisfaction can be achieved in case positive factors significantly prevail over the negative. The level of satisfaction with institutions represents the extent to which the acting institutions correspond to the institutional subjects' values, motives, and their economic activity results.

- 1.2. Grounding the demand and goals of an institution being designed
- 1.3. Choosing the way of designing (intersystem copying or intersystem constructing) and its general conception
- 1.4. Finding an institution's stakeholders, including their characteristics and influence resources, ways of involving them into an institutional project
- 1.5. Developing projects' selection criteria and procedures

2. *The main stage*

- 2.1. Institutions' benchmarking (in case of intersystem copying): collecting primary and secondary data, involving partners, acquiring insider information, and analyzing the information accumulated
- 2.2. Defining the institution's, being designed, functional range (a range of necessary and unacceptable functions), a set of stimuli and its agent's behavioral models
- 2.3. Defining an institution's implementation forms
- 2.4. Defining formal and informal norms, providing the designed institution's activity
- 2.5. Defining positive and negative collective mental models connected with an institution (understanding, beliefs, stereotypes, and so on)
- 2.6. Elaborating and integrating an institution's, being designed, models (functional, structural, normative, and mental)
- 2.7. A detailed description of the changes' objects, subjects, means, and ways of an institutional project
- 2.8. Elaborating a plan, forecast, and evolution scenarios of a project, being constructed, in different time periods
- 2.9. An institutional project's risk analysis (determining a set of anomalous institutionalization risks and agents' deviation forms)
- 2.10. Grounding an institutional project's resources and financial provision
- 2.11. Grounding an institutional project's marketing and educational provision
- 2.12. Elaborating an institutional project's effectiveness system of indicators (objective and subjective, quantitative, and qualitative)

3. *The final stage*

- 3.1. Discussing and comparing alternative institutional changes' projects with the participation of stakeholders and experts
- 3.2. Choosing the optimal institutional project

- 3.3. Carrying out an institutional experiment in a pilot project form
- 3.4. The pilot project's intermediate monitoring results and correction, taking into account the stakeholders' views and requests
- 3.5. The institution's, being designed, mass economic integration
- 3.6. The project's implementation occasional monitoring with a special stress on discovering the anomalous forms, analysis, and improvement of the institution, while it is functioning, basing on consultations with stakeholders

Forming an economic mechanism for designing an institution can be perspective, if it was based on a synthesis of various economic mechanisms' fundamental research results (including the financial, informational, institutional, and organizational mechanisms) in various fields of activity (Inshakov 1995). The most outstanding results, achieved in this sphere, are based on distinguishing the subjects, objects, and the environment of a mechanism's activity; determining the methods, instruments, and ways of regulating; emphasizing the necessity to monitor and correct the results of a mechanism's activity; and forming a block structure, taking into account direct and inverse links with the environment.

The institutional designing mechanism is a controllable change of the institutional system's or its element's balance, by integrating new institutions or changing the already existing institutions and their complexes in order to eliminate anomalous institutionalization forms and to enhance the economic institutions' effectiveness. This mechanism is reflected in Fig. 1.

The following functional blocks within this model have been developed:

- The “projector” block, with the following functions: defining institutional anomalies, stating the project's conceptions and its stakeholders, and choosing an optimal variant
- The “designer” block with the following functions: collecting and analyzing the data and developing functional-structural regulatory and mental models of an institution
- The “processor” block with the following functions: planning, forecasting, analyzing the risks, grounding the resource-financial and marketing-educational support, and elaborating a project's growth system of indicators
- The “introducer” block with the following functions: selecting an optimal institutional project, pilot, and mass integration of an institution
- The “anomalies” block with the following functions: monitoring and deactivating the institutional anomalies, arising through the institutional project's implementation

The suggested modified model of designing economic institutions has certain advantages. Not only norms are the object of designing an institution, but functional, structural, regulatory, and mental institutional components as well, which enhances the designing system and anomalous institutionalization risk minimization. The state, supporting and impeding factors, and a great number of stakeholders of an institution, being designed, are the subjects of designing. Besides, such

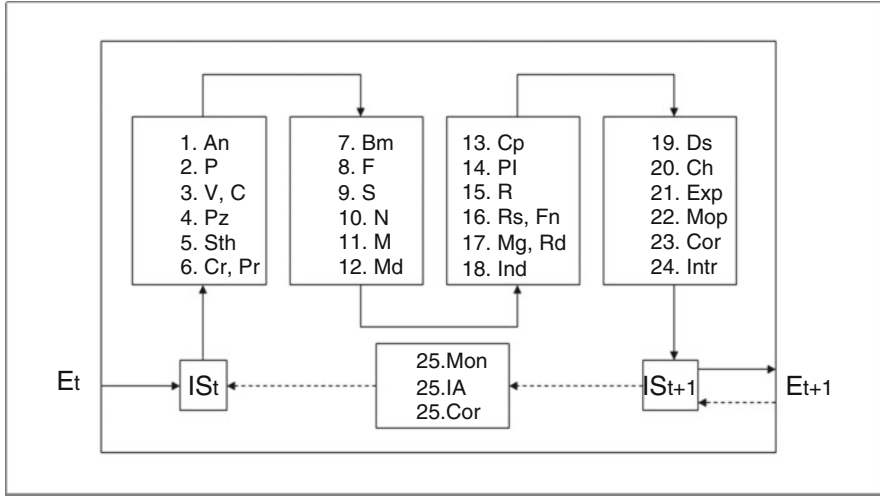


Fig. 1 The modified mechanism of designing institutions. Legend to figure: E_t, E_{t+1} , institutional environment’s initial and final state; An, institutional anomalies and agents’ demands analysis; P, stating the goals of an institutional project; V, C, choosing a designing variant and elaborating its conception; Pz, positioning a new institution in the existing institutional system; Sth, defining the institution’s, being designed, stakeholders, their interests, and resources; Cr, Pr, elaboration of criteria and procedures of selecting the institution’s, being designed, variants; Bm, benchmarking; F, defining a set of an institution’s functions, stimuli system, and behavioral models; S, stating the institution’s structural forms; N, defining formal and informal norms, regulating the institution; M, stating the institution’s, being designed, agents’ mental models; Md, elaboration of an institution’s complex model; Cp, elaboration of an institutional project’s components (subjects, objects, methods, and instruments of changes); Pl, elaboration of a plan, forecast, and scenarios of an institution’s development; R, institutional anomalies’ risk analysis; Rs, Fn, grounding the resource and financial base of a project; Mg, Ed, grounding the marketing an educational support of a project; Ind, elaboration of a project’s results’ effectiveness system; Ds, discussion of institutional designing alternatives; Ch, choosing an optimal institution; Exp, carrying out an institutional experiment; Mon, preliminary monitoring of results; Cor, correction of a project with the stakeholders’ participation; Intr, the institution’s integration; Mon, occasional monitoring of an institution, basing on a system of indicators; IA, the analysis of institutional anomalies, arising while the institution functions; Cor, correction of institutionalization anomalous forms

designing model implies the stakeholders’ active participation on all stages of institutional designing, which is an additional preventive measure in a struggle against an institution’s anomalization. Such model implies the risk analysis of a designed institution’s potential anomalies while its model is being formed and on the pilot and mass integration stages. The instance of such model can be the design of a special regional waste treatment system.

Acknowledgments The article was prepared with the financial support of the Department of Humanities and Social Sciences of the Russian Foundation for Basic Research and Volgograd Region Administration under the science project No. 17-12-34008.

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Methodology of Multivariate Statistical Analysis in Evaluating the Factors of Region's Innovative Activity

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Abstract Determination of the factors' influence on economic development of region is the most important issue, solution of which will allow selecting the most effective directions of investing and determining the highest risks on the path of realization of measures aimed at territories' development. The offered methodology of multivariate statistical analysis allows determining the influence of factors of region's innovative activity on the formation of gross regional product.

JEL Codes Q18 • Q17 • Q13

1 Introduction

In the globalizing economy, successful positioning of country, region, and sphere depends on the goal of constant innovational renovation, aimed at achievement of maximum efficiency, competitiveness, and development of human capital (Soboleva et al. 2016).

Sustainable development of the territory depends on influence of many factors, one of which is innovative activity of economic subjects of the territory.

Innovational processes, together with socio-economic processes, depend on a large number of factors that characterize them—which predetermines difficulties related to determination of the structure of interconnection between these factors. Thus, factor analysis is a complex of methods of study and evaluation of the factors' changes influence on the volume of change of the resulting indicators. The general approach to the factor analysis as a part of methodology of the theory of economic analysis is described in various works (Chaplygin 2012). It is expedient to use the methodology of multivariate statistical analysis which allows studying interconnections between values of the variables. In these situations—i.e., when decisions

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are made on the basis of analysis of stochastic, incomplete information, using the methods of multivariate statistical analysis is not only justified but very necessary. Among the variety of possible probabilistic and statistical models, multivariate statistical methods allow selecting one that corresponds to the initial statistical data that characterize the real behavior of the studied totality of the objects and evaluating reliability and precision of the conclusions made on the basis of limited statistical material.

2 Methodology

It is possible to distinguish three sub-tasks in analysis of causal connections: analysis of the structure of causal connections and their statistical modeling, forecasting, and explanation of changes of dependent variables with the help of the created models. In order to solve this group of tasks, regressions methods are used (multivariate linear regression, logistical regression, etc.) and logically similar roadmap analysis and modeling of linear and structural equations (Tereshchenko 2012).

Methods of studying the structure of correlation connections between variables. This task could be solved by itself (determination of subsets of variables which are closely connected) and for the purpose of reducing the number of the used variables (reduction of proportion) without significant loss of information. For that, the methods of main components, factor analysis, cluster analysis of variables, and multivariate scaling are used (Tereshchenko 2012).

Correlation analysis and regression analysis are used for studying the statistical dependence of a range of random values.

Correlation analysis allows making conclusion on the strength of interconnection between the pairs of data x and y , and regression analysis is used for forecasting of one variable (y) on the basis of another (x). In other words, causal connection between the analyzed totalities is determined (Tereshchenko 2012).

There are various analytical means of determining the coefficient r . The following formula is known (Tereshchenko 2012):

$$r = \frac{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{S_x S_y} \quad (1)$$

where S_x and S_y —mean-squared deviation for each viewed massive of the numbers; x_i and y_i —current values of items of both totalities; \bar{x} and \bar{y} their average values and n —number of dimensions (elements) in each totality. Another expression is used in the statistics literature:

$$r = \frac{n \sum_{i=1}^n x_i - \sum_{i=1}^n x_i \sum_{i=1}^n y_i}{\sqrt{\left[n \sum_{i=1}^n x_i^2 - \left(\sum_{i=1}^n x_i \right)^2 \right] \left[n \sum_{i=1}^n y_i^2 - \left(\sum_{i=1}^n y_i \right)^2 \right]}} \tag{2}$$

In this case, there’s no necessity for determining deviations of the current (individual) values from the average value. This excludes any error in calculations during approximation of average values. Knowing the correlation coefficient, it is possible to evaluate the level of connection. For example, special table ratios are used (so-called Chaddock scale) (Table 1).

Regression analysis assigns the roles between the studied characteristics—one of them is argument, another is function. The variable that is forecasted (function) is denoted as *y*, and the variable that is used for such forecasting (argument or factor) is *x* (Baraz 2005).

The term “linear regression analysis” denotes forecasting that is described by linear interconnection between the studied variables:

$$y = b_0 + b_1x \tag{3}$$

With all variety of empirical formulae, there is a form of analytical dependence that is widely popular. It is the equation of regression in the form of polynomial function, which is located at upcoming level of the studied factor and is linear to all coefficients. Such formula has the following form:

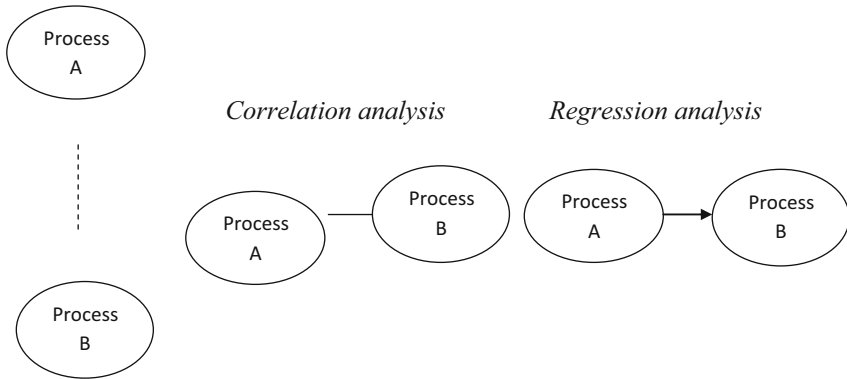
$$y = f(x) = b_0 + b_1x + b_2x^2 + \dots + b_mx^m, \tag{4}$$

where *b*₀, *b*₁, *b*₂, . . . , *b*_{*m*}—coefficients to be determined.

Figure 1 shows that in the first case there are two independent processes that do not influence each other. In the second case, the process of correlation analysis is viewed, which allows determining the significance of interconnection of these processes. In the third case, regression analysis determines what is the influencing factor (argument), and what is resulting factor (function).

Table 1 Qualitative evaluation of the level of connection

Value of coefficient of paired correlation	Characteristics of the level of connection
Below 0.3	Absent
0.3–0.5	Weak
0.5–0.7	Moderate
0.7–0.9	Strong
0.9–0.99	Very strong



- 1. Two independent processes
- 2. Determination of a significant connection
- 3. Determination of the influencing factor (argument) and the resulting factor (function).

Fig. 1 Schemes of correlation and regression analysis

3 Result

The main subjects of the innovations market in the Russian Federation are organizations of various organizational and legal forms, ownership forms, and sectorial sphere and volumes that conduct R&D. The number of organizations that conduct R&D grew insignificantly in 2009–2014 in the RF, constituting 3622 in 2014 (which is y 2.5% more than in 2009). A negative tendency is reduction of personnel involved in R&D and reduction of the share of internal expenses for R&D in the country’s GDP. There’s a low level of innovative activity in many regions of the RF, including Kirov Oblast—which is a subsidized region. That’s why it is very important to use financial resources rationally during investing into the objects of innovational infrastructure that provide the largest economic effect.

In order to substantiate interconnection between the state of region’s economy and the factors of innovative activity, let us perform multivariate factor analysis of the influence of factors of innovative activity on GRP of Kirov Oblast with the use of statistical data in 2005–2014.

The indicators of innovative activity include five main indicators. Therefore, the matrix of dynamics of GRP and factors of innovative activity that influence it, according to the data of the Kirovstat, has the following form— $VRP = f(x)$ (Table 2).

Table 2 Dynamics of GRP and factors of innovative activity

Indicators	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GRP (RUB billion) (y)	79.8	97.04	118.15	150.88	172.4	172.35	195.269	208.50	224.72	225.6
Volume of performed scientific and technical works (RUB million) (X_1)	486.8	508	689.4	779.9	1021.3	889.6	1019.8	1249.6	1284	1524.9
Internal expenses for R&D (RUB million) (X_2)	408	422.5	531	643.9	843.8	849.7	901	1095.9	1077.6	1362.4
Organizations' expenses for technological innovations (RUB million) (X_3)	447.7	761.2	911.9	1378.5	1.142.8	877.5	1983	3090.5	3107.7	2777.5
Sold innovational products and services (RUB million) (X_4)	3149	2339.8	5753.4	9435.7	5923.2	6965.5	9360.7	9962.5	9593.3	11,238
Investments into fixed capital for the activity type "Scientific R&D" (RUB million) (X_5)	35.47	9.773	28.722	54.42	38.555	47.753	17.564	58.174	45.521	87.

Based on the initial data of Table 2, let us perform correlation analysis for the purpose of determining the level influence of connection and significance of factors of innovative activity on formation of GRP of Kirov Oblast.

The following indicators are colinear: X_1-X_5 ; X_1-X_4 ; X_1-X_3 ; X_1-X_2 ; X_2-X_5 ; X_2-X_4 ; X_2-X_3 ; X_3-X_5 ; X_3-X_4 ; X_4-X_5

Analysis of Table 3 shows that the largest influence on GRP is performed by such factors as the volume of performed scientific and technical works, expenses for R&D, volume of sold goods, and provided services—as the correlation coefficient of indicators is above 0.9. The indicator “expenses for technological innovations” is strongly connected to GRP, as the correlation coefficient is above 0.7 (Table 4).

Multiple R —multiple correlation coefficient equals 0.98. The determination coefficient $R^2 = 0.97$ —this means that the created regression explains 97% of scatter of the values of variable Y as to the average. Standard deviation of approximation for the received model constitutes 11.72510557, which shows its precision.

The sense of dispersion analysis consists in dividing the general dispersion of the studied quality into separate components, predetermined by the influence of specific factors and in verifying the hypotheses on significance of influence of these factors on the studied quality. Comparing the dispersion components to each other with the help of F -criterion, it is possible to determine the share of variability of the resulting quality that is caused by the action of regulating factors (Table 5).

Multivariate factor model of GRP for Kirov Oblast has the following form:

$$Y = 36.5946 + 0.02872X_1 + 0.10903X_2 - 0.0002X_3 + 0.0048X_4 - 0.51801X_5$$

Coefficient 36.5946 shows the GRP if all variables in the viewed models are equal to 0. The next coefficients of the linear equation show their influence on GRP.

Table 3 Correlation of innovative activity factors

	y	X_1	X_2	X_3	X_4	X_5
y	1	–	–	–	–	–
X_1	0.961369602	1	–	–	–	–
X_2	0.959606086	0.991562124	1	–	–	–
X_3	0.881554182	0.892010148	0.866270334	1	–	–
X_4	0.907593455	0.853876772	0.844701383	0.8181107321	1	–
X_5	0.592754446	0.713421224	0.726165538	0.553282707	0.615774693	1

Table 4 Regression statistics

Indicator	Value
Multiple R	0.988678852
R -square	0.977485872
Normed R -square	0.949343211
Standard error	11.72510557
Observations	10

Table 5 Dispersion analysis

	<i>df</i>	SS	MS	<i>F</i>	Significance <i>F</i>
Regression	5	23,875.30141	4775.060282	34.73324306	0.00216791
Left	4	549.9124022	137.4781006		
Total	9	24,425.21381			

	Coefficients	Standard error	<i>t</i> -statistics	<i>P</i> -value	Lower 95%	Upper 95%	Lower 95%	Upper 95%
<i>Y</i>	36.5946	15.39212	2.3774931	0.076196	-6.140720	79.33007	-6.14072	79.33007
<i>X</i> 1	0.02872	0.103004	0.2788824	0.794159	-0.257259	0.314712	-0.25725	0.314712
<i>X</i> 2	0.10903	0.102093	1.0680359	0.345675	-0.174417	0.392496	-0.17441	0.392496
<i>X</i> 3	-0.0002	0.009475	-0.0267246	0.979959	-0.026561	0.026055	-0.02656	0.026055
<i>X</i> 4	0.0048	0.002182	2.2208266	0.090529	-0.001212	0.009090	-0.001212	0.0109090
<i>X</i> 5	-0.51801	0.264557	-1.9580337	0.121829	-1.252540	0.216516	-1.252540	0.216516

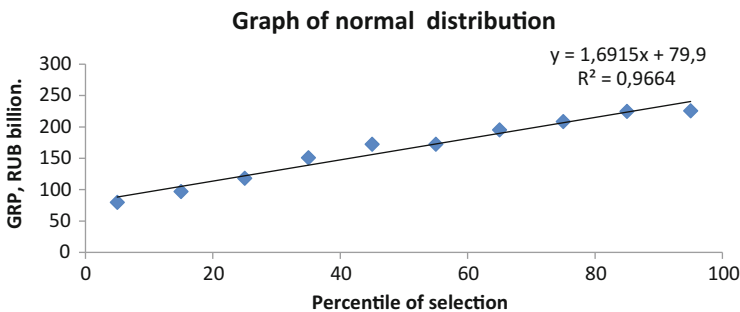
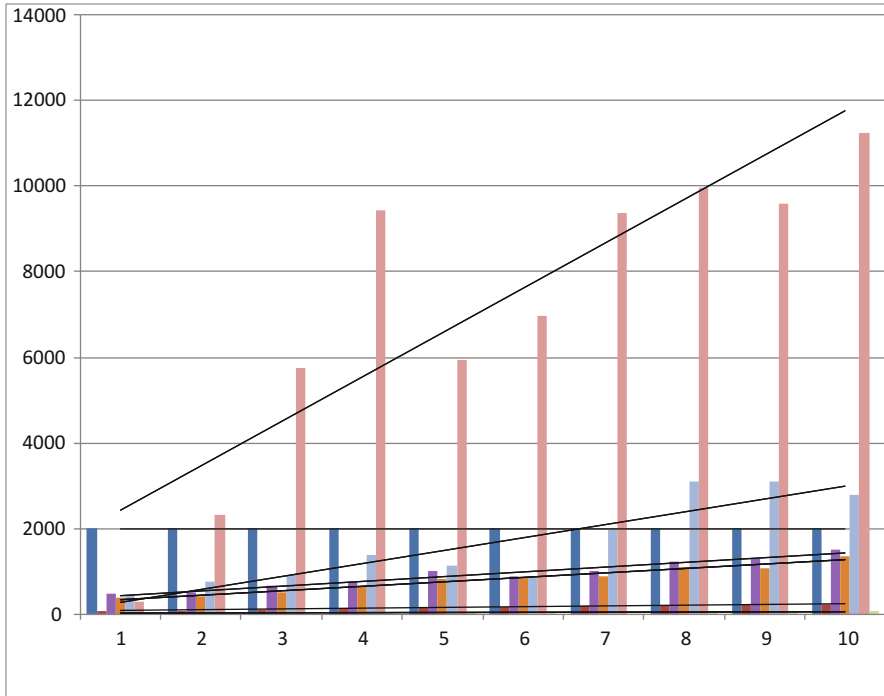


Fig. 2 Diagram of scatter and regression line (trend) of influence of innovative activity factors on GRP of Kirov Oblast

The regression coefficient—0.51801—shows that with the additional volume of investments into fixed capital as to the type of activities, “Scientific R&D” leads to reduction of GRP by RUB 0.51801 billion, which is not logical. For the development of regional economy, the coefficient 0.10903—“Internal expenses for R&D”—is very important.

The value of *F*-criterion constitutes 34.733324306 and significance level—0.00216791; therefore, the built regression is very significant. The received *p*-value shows that the observed results could not be received for a random selection from such totality, so we reject the hypothesis on lack of dependence and think that there’s one significant dependence.

Figure 2 shows that $b_0 = 79.9$, and $b_1 = 1.6915$ —therefore, equation of linear regression for this data has the following form: $y = 79.9 + 1.6915x_i$. Therefore, inclination $b_1 = +1.6915$. This means that with increase of variable *X* by 1, average



- GRP, RUB billion.
- Volume of performed scientific and technical works, RUB million.
($y=110.08x+339.87$, $R^2 = 0.9504$)
- Internal expenses for R&D, RUB million ($y=101.68x+254.35$, $R^2 = 0.9621$)
- Organizations' expenses for technological innovations, RUB million
($y=302.03x-13.333$, $R^2 = 0.8101$)
- Sold innovational goods, works, and services, RUB million
($y=1,036x+1,390.5$, $R^2 = 0.7767$)
- Investments into fixed capital for the activity type "Scientific R&D", RUB million
($y=4.6379x+16.847$, $R^2 = 0.4028$)

Fig. 3 Linear dependence of innovative activity factors on GDP. Red bars GRP, RUB billion. Violet bars volume of performed scientific and technical works, RUB million. ($y = 110.08x + 339.87$, $R^2 = 0.9504$); orange bars internal expenses for R&D, RUB million ($y = 101.68x + 254.35$, $R^2 = 0.9621$); blue bars organizations' expenses for technological innovations, RUB million ($y = 302.03x - 13.333$, $R^2 = 0.8101$); brown bars sold innovational goods, works, and services, RUB million ($y = 1036x + 1390.5$, $R^2 = 0.7767$); grey bars investments into fixed capital for the activity type "Scientific R&D", RUB million ($y = 4.6379x + 16.847$, $R^2 = 0.4028$)

value of variable Y grows by 1.6915 points. In other words, increase of expenses for R&D leads to increase of the annual volume of GRP by RUB 79.9 billion. Thus, inclination is the share of annual volume of GRP that depends on the volume of investing into R&D. Shift $b_0 = 79.9$ (RUB million) is the average value of variable Y with $X = 0$. As expenses for R&D cannot equal zero, the shift could be considered a share of yearly GRP that depends on other factors. It should be noted that the shift of variable Y goes beyond the limits of the range of variable X . Therefore, the parameter b_0 should be interpreted attentively.

Analysis of the data of Fig. 3 allows to conclude that functions of linear dependence of single factor model shows that the coefficient of determination has the largest value with the indicator “Internal expenses for R&D”—0.9621, and “Volume of performed scientific and technical works”—0.9504, which shows that these two factors influence formation of Kirov Oblast’s GRP the most.

4 Discussion

According to the traditional ideas of economic development, the sources of the region’s well-being are land, natural resources, geographical location, cheap labor resources, and production capacities. However, presence of natural resources, cheap workforce, and financial and technological resources does not provide advantages in competitive struggle in the global market (Sosunova 2010). Successful development of region is influenced by innovative activity of this territory’s subjects.

Y.V. Trifonov and A.A. Veretennikova offer to divide all approaches to evaluation of the level of effective development of territory into two large groups: analysis of preconditions and analysis of results (Trifonov 2013).

Development of the regional socio-economic system is predetermined by multiple factors which are peculiar for the following qualities:

- Complexity, which means that development of the system is influenced by all factors
- Independence determined by natural factors which express conditions of existing of any life activities
- Priority of action of factors which determines the dominating role of one or several factors of development. There a lot of various classifications of factors of regions’ development. According to A.V. Buzgalin and V.V. Radaev, factors are divided into three groups: natural and climatic, production and economic, and socio-cultural (Podkuyko 2015).

L.A. Sosunova and E.A. Serper view a region during modeling as an open system, divided into three interacting sub-systems: economic, natural, and social. Economic sub-system includes traditional production and non-production sectors and non-traditional types of activities aimed at restoration or improvement of the state of natural and social sub-systems. Dynamics of natural and social sub-systems

is described similarly. Territorial distribution is not taken into account. The flows of import and export are not set beforehand but are formed by a certain strategy of development in view of existing economic ties (Sosunova 2010).

Thus, an effort was made for application of the correlation and regression analysis for the purpose of evaluating the influence of innovative activity factors on GRP. Based on the selected statistical data, trend models on the basis of linear dependence were built, their adequacy and precision were determined, and the model of influence of innovative activity factors on GRP was built. It is determined that average error of approximation for the received model constitutes 11%, which proves its precision.

5 Conclusions

The offered methodology of evaluating the quality of regulating influence through the key factors of economy development on the basis of cluster regression analysis allows for determination of the factors that influence the quality of territory's management and formation of GRP, as well as increase of the ranking of regions' investment attractiveness. The performed analysis allows finding out that development of innovative activity of Russian regions requires attraction of investments resources into the spheres that pose the largest innovative activity and that are capable to change not only the structure of GRP but to increase the volume of this indicator.

The results of the research show the possibility for practical application of correlation and regression analysis and consideration of models in the evaluating the influence of the factors on formation of GRP.

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Financial Policy of Modern Russia as a Direction of Global Crisis Management

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Abstract The purpose of the article is to determine perspective directions of modernization of modern Russia's financial policy in the interests of global crisis management. The methodology includes qualitative analysis with the help of induction, deduction, systemic analysis, analysis of causal connections, and the method of correlation analysis of indicators of financial policy and crisis in Russia in 2007–2016. Information and analytical platform of the research includes materials of statistical and analytical reports from Russian and international organizations: the International Monetary Fund, the Ministry of Finance of the Russian Federation, the World Economic Forum, the World Bank, etc. The authors determine the sense of financial policy's influence on economy of modern Russia through the prism of crisis and prove that prevention of future economic crises and overcoming of their negative consequences require modernization of modern Russia's financial policy, for which the corresponding practical recommendations are offered.

JEL Codes F63 • G01 • G18 • H12

1 Introduction

Financial nature of the recent global economic crisis puts the financial sphere to the foreground in the context of global crisis management. Russia is among the countries that suffered the most from the recent crisis, in particular, its influence manifested in reduction of rate of economic growth, reduction of business activity, growth of unemployment and inflation, etc.

This shows the necessity for correction of the strategy of state regulation of national economy and predetermines high actuality of determining perspective

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_72

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directions of modernization of financial policy of modern Russia for the purpose of global crisis management—which is the goal of this article.

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

Theoretical basis of the research consists of the materials of theoretical research that contain fundamental substantiation of necessity and principles of realization of global crisis management by such scholars as Skiter et al. (2015), Popkova and Tinyakova (2013), Kravets et al. (2014), Dzhandzhugazova et al. (2015), Fenger and Quaglia (2016), and Ma and Zhang (2016).

The authors also use the results of applied research in the sphere of development and realization of financial policy by the example of different countries, by such authors as Georgiadis and Mehl (2016), Nisticò (2016), Evans (2016), Andreeva and Shevchik (2016), and Popkova et al. (2016).

Methodological apparatus of this work is based on qualitative analysis with the help of such scientific methods as induction, deduction, synthesis, problem analysis, systemic analysis, analysis of causal connections, and correlation analysis, the results of which are given in Table 1.

3 Results

Based on the data of Table 1, we conduct a series of automatized calculations within quantitative analysis to determine a high level of correlation of the indicator of Russian economy crisis (annual growth of GDP) and indicators of financial policy (state debt, tax load, index of involvement into international trade, national currency rate, and volume of direct foreign investments).

Qualitative analysis showed that economic crisis influences the financial sphere, but the state of affairs in this sphere could provoke crisis as well. This growth of openness of economy together with growth of tax load inevitably leads to reduction of direct foreign investments and reduction of business and innovational activity of domestic entrepreneurship, which provokes the growth of state debt and reduction of national currency rate due to monetary measures for its payment.

Therefore, prevention of future economic crises and overcoming their negative consequences require modernization of financial policy of modern Russia on the following directions. It is necessary to ensure balance of national and territorial budgets in the sphere of budget policy. This supposes refusal from the strategy of budget deficit and increase of the state debt.

In order to avoid negative social consequences related to reduction of state expenses for realization of socially important programs and projects, positive and

Table 1 Dynamics of indicators of financial policy and crisis in Russia in 2007–2016

Indicators	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Annual growth of GDP (%)	8.535	5.248	-7.821	4.504	4.048	3.518	1.279	0.707	-3.727	-0.761
State debt (\$ billion)	52.0	44.9	40.6	37.6	34.0	34.7	54.4	62.7	41.6	30.8
Tax load (%)	32.9	33.8	34.1	35.0	36.2	37.4	38.5	40.3	41.4	42.6
Index of involvement into international trade (scores 1–6)	2.10	2.40	2.60	2.80	3.00	3.10	3.30	3.50	3.60	3.70
RUB/USD rate	35.78	37.99	43.84	40.78	41.49	40.31	45.03	66.45	73.30	63.87
Volume of direct foreign investments (\$ billion)	63.4	65.2	66.7	68.3	69.4	70.5	71.3	70.6	64.2	52.8

Source: compiled by the authors on the basis of the International Monetary Fund (2017), Ministry of Finance of the RF (2017), MetriInfo (2017), World Economic Forum (2017), and World Bank (2017)

negative financial flows of the state budget should be balanced with emphasis on growth of incomes. In view of development of shadow economy and due to growth of load on business, it is expedient to take certain countermeasures related to reduction of this load and increase of tax revenues into the budget not by means of taxes but by means of fighting shadow economy.

In the sphere of tax policy, it is necessary to ensure creation of a favorable tax climate for growth of business and innovational activity. The above recommendations for reduction of taxes (with emphasis on corporate tax) help to achieve this goal. In the sphere of customs policy, it is necessary to make economy more open with preservation of national economic security. This supposes continuation of the successful process of Russia's integration into the world economy with moderate rates with periodic reconsideration of regulation mechanisms to avoid quick arrival of transnational corporations in Russian markets and ousting domestic companies from them.

In the sphere of monetary policy, it is necessary to establish a stable currency exchange rate that is profitable for society and business. We think that Russian government has decreased the ruble rate too much. Acting in the interests of domestic manufacturers entering the world markets, it decreased the volume of real income of the Russian population, i.e., according to the Keynes's theory, reduces the volume of internal investments into the economy and bereaves it of additional chances for growth and development. That is why it is necessary to increase the ruble rate.

In the sphere of investment policy, it is necessary to form and support favorable investment climate. This requires creation of an effective platform for cooperation between the state and private business with emphasis on the system of provision of state services (consultations in the sphere of tax and financial accounting, registration of business, etc.). Transparent and strong institutional platform will surely attract investors to Russian markets.

A general scheme of modernization of financial policy of modern Russia in the interests of global crisis management is presented in Fig. 1.

As seen in Fig. 1, as a result of realization of the offered recommendations on modernization of modern Russia's financial policy, financial restoration and quick global-oriented development of entrepreneurship are ensured, as well as growth of its innovational activity and economy on the whole, which increases the level and rate of development of national economic system and raises its sustainability, thus stimulating achievement of the goals of global crisis management.

4 Conclusions and Recommendations

Thus, the results of the performed research proved the offered hypothesis and showed not only the possibility but the necessity for modernization of the financial policy of modern Russia in the interests of global crisis management. The offered recommendations constitute the basis of the work's practical significance.

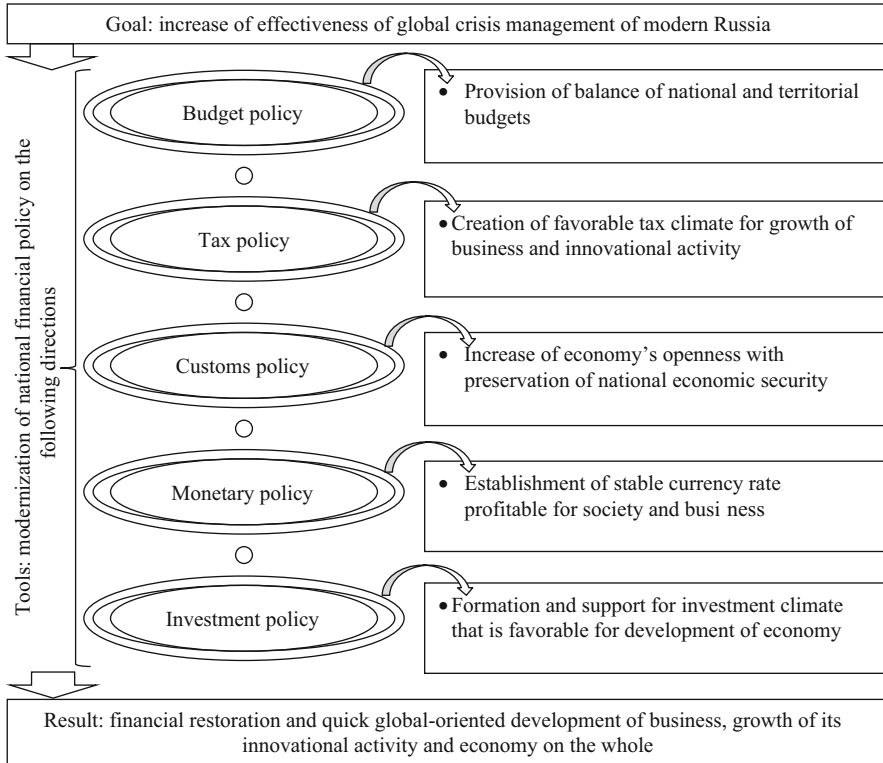


Fig. 1 Financial policy of modern Russia in the interests of global crisis management (Source: compiled by the authors)

Fundamental scientific value of this article is determined by development of the concept of state regulation of economy, financial sustainability, and global crisis management.

Of course, foundation on experience of modern Russia predetermines narrow character of directions of the authors' conclusion application, which is a limitation of this research. Further full-scale applied studies by the example of various countries on the offered theoretical platform are a perspective direction of further scientific research in the sphere of study of possibilities and perspectives of increase of effectiveness of global crisis management with the help of modernization of national financial policy.

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Sustainable Development of Russian Regional Economy for Provision of Food Security: Successful Experience and New Approaches

Larisa V. Popova, Natalya N. Skiter, and Tatiana A. Dugina

Abstract The purpose of the article is to study successful experience and to develop new approaches to provision of food security in modern Russia through increase of sustainability of regional economy's development. Methodology of conduct of scientific research is based on the use of the method of quantitative (statistical) research, as well as the method of induction, deduction, systematization, and formalization. The authors determined presence, essence, reasons, dynamics, and depth of the problem of food security in modern Russia and distinguished peculiarities and drawbacks of subsidizing approach to solving the problem of food security in modern Russia. The main conclusion consists in proving the fact that regional economy of modern Russia is peculiar for the problem of food security. The main reason for emergence of the problem of food security in modern Russia is unsustainable development of regional economy. The subsidizing approach used for solving it over the recent years does not allow closing the gap between the volume of production and consumption of food in Russian economy. The authors developed new approaches to solving the problem of food security in modern Russia oriented at achievement of sustainability of regional economy's development.

JEL Codes F52 • Q01

1 Introduction

The economy of modern Russia is in a difficult situation. Apart from economic instability, caused by the influence of coming global financial crisis, it is in unfavorable geopolitical situation caused by economic sanctions. Against this

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background, topicality of provision of national security, one of the directions of which is food security, grows.

The working hypothesis of this research is the author's idea that the reason of emergence of the problem of food security of modern Russia is unsustainable development of regional economy. The authors seek the aim of study of successful experience and development of new approaches to provision of food security in modern Russia through increase of sustainability of development of regional economy. For achievement of the set goal, the work solves the following tasks:

- Determination of presence, essence, causes, dynamics, and depth of the problem of food security in modern Russia
- Determination of peculiarities and drawbacks of the approach to solving the problem of food security in modern Russia that is currently used
- Development of new approaches to solving the problem of food security in modern Russia, oriented at achievement of sustainability of development of regional economy

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

Within the current scientific paradigm, sustainability of development of regional economy is balance of development of its economic, social, and ecological spheres. Conceptual provisions of sustainability of economic systems, including at regional (meso-)level, are given in works of such scholars as Dzhandzhugazova et al. (2015), Kravets et al. (2014), Popkova et al. (2013), Skiter et al. (2015), etc.

Food security of economic system of any level is the possibility for independent satisfaction of existing internal demand for food products. During its study, the volume of production and consumption of food within the system is compared, and the difference is compensated by means of import. Theoretical and methodological issues of provision of food security are reflected in the materials of the research by Abdulkadyrova et al. (2016), Borch and Kjærnes (2016), Wegren et al. (2016), etc.

As a result of literature review, it is necessary to note that despite the high level of elaboration of certain aspects of the studied problem, it is not analyzed in this formulation and, therefore, is not solved. In other words, perspectives of provision of food security are not viewed in the context of sustainable development of regional economy, which, in our opinion, is a significant gap in modern economic science, which should be filled by this paper.

The methodology of this research is based on the use of the method of quantitative (statistical) and qualitative analysis, as well as the methods of induction, deduction, systematization, and formalization. The information and empirical basis of the research consists of the materials of official reports of the Federal State Statistics Service of the Russian Federation for 2015, provided on its official website and in the annual edition "Regions of Russia. Socio-economic indicators."

3 Results

In order to determine the presence of the problem of food security, let us analyze the dynamics of production and consumption volume for federal districts in modern Russia (Table 1).

As seen in Table 1, over the whole studied period, there was an observed excess of the volume of food consumption over its production volume—both at the level of each federal district and at the level of Russian economy on the whole. Thus, in 2005, only 79% of the total food consumption in Russia was provided by domestic production. In 2010, this volume reduced to 64% and in 2015 to 54%, i.e., the threshold of food security was exceeded.

This shows that modern Russia is peculiar for the presence of the problem of food security, which deepens with time and is expressed in excess of the volume of food consumption over food production. Based on qualitative analysis of practice of economic activities in regions of modern Russia, we have come to the conclusion that the main reason of this problem is their unsustainable development.

In particular, economic interests of development of domestic regions dominate over socioecological ones. Thus, due to unfavorable geographical, market, and institutional conditions, development of agriculture is usually commercially unattractive for regional entrepreneurial structures, i.e., it is not profitable from the economic point of view.

At the same time, from the social point of view, agriculture is a perspective means for solving social problems, e.g., unemployment. A large number of qualified specialists in the sphere of agriculture create preconditions for development of this sphere of economy. However, due to unfavorable economic environment, these specialists are unemployed or have to retrain.

From ecological point of view, development of agriculture is also very interesting for modern Russian regions. Industrial direction of most territories of Russia is a reason for reduction of the level of cleanliness of the environment. Agriculture's reorientation of regional economy would allow reducing the tension of ecological problems.

Therefore, economic, social, and ecological interests of Russian regions in the context of development of agriculture often contradict each other, and commercial component dominates during solving this problem. At present, a subsidizing approach to solving the problem of food security in modern Russia is used. The essence of this approach consists in the fact that ineffectiveness of the work of market mechanism is compensated by means of state interference into economic processes.

Its most important peculiarity is artificial correction of business climate in the market through provision of subsidies to domestic agricultural enterprises and creation of preferential economic conditions with the help of protectionist policy. Subsidizing approach is characterized by existence of serious drawbacks, among which are the following:

Table 1 Dynamics of volume of food production and consumption for the federal districts of the Russian Federation in 2005–2015

Federal district of the Russian Federation	Volume of production and consumption of food, RUB million								
	2005			2010			2015		
	Production	Consumption		Production	Consumption		Production	Consumption	
Central	292,952	361,669		579,935	892,208		1,096,654	2,069,158	
Northwestern	73,976	94,841		137,171	217,732		210,917	405,610	
Southern	208,111	273,830		427,259	689,127		653,021	1,166,109	
North Caucasian	104,073	125,389		205,337	348,029		341,517	588,822	
Volga	355,588	433,644		580,982	867,137		1,011,323	1,872,820	
Ural	97,487	121,859		173,650	251,667		266,996	503,766	
Siberian	201,468	272,254		386,838	604,434		543,890	1,066,451	
Far Eastern	47,306	59,881		96,579	148,583		146,092	292,184	
Total for Russia	1,380,961	17,433,67		2,587,751	4,018,917		4,319,047	7,964,921	

Source: Federal State Statistics Service (2015a, b)

- Putting the financial load for provision of favorable conditions of business onto the state and, as a consequence, large load onto the state budget
- Weak innovational development and, as a result, low effectiveness of the use of resources in the production process
- Bringing the competition in the market to minimum, which leads to ineffective satisfaction of society's needs (potential of products' quality is not realized, and prices are too high)

Based on the study of successful world experience of solving the problem of food security, we determine that in the long term, subsidizing approach leads to domestic manufacturers losing the capability to compete with foreign rivals and to gradual disappearance of internal production under the influence of globalization and integration.

That's why for the purpose of effective solution of the problem of food security in modern Russia, this article offers to use the following approaches, oriented at achievement of sustainability of development of regional economy.

The first approach is a stimulating one. It supposes state stimulation of development of market infrastructure of entrepreneurship in the food sphere. The mechanism of work of stimulating approach is given in Fig. 1.

As seen in Fig. 1, with the help of such tools as tax stimulation of food companies and stimulation of competition in the food sphere, the state, represented by the federal tax service, the federal anti-monopoly service, and other regulating bodies of public authorities, stimulates the increase of commercial attractiveness of agriculture.

This leads to establishment of favorable business climate in the food sphere and development of domestic food production. As a result, the gap between the volume of consumption and production of food decreases, and the problem of food security is solved. At that, the main principles of management are bringing the state interference into market processes down to the minimum and saving the budget assets.

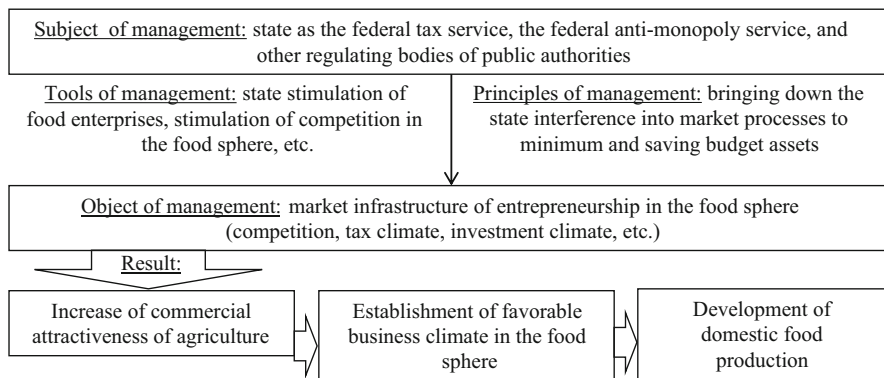


Fig. 1 Mechanism of work of stimulating approach to solving the problem of food security in modern Russia

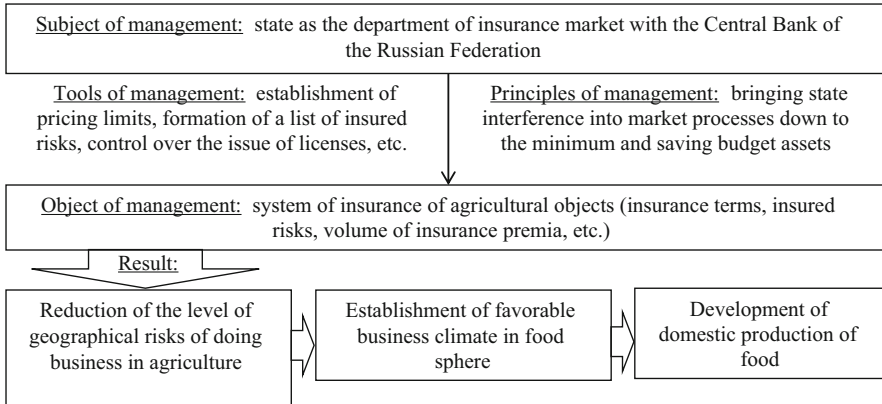


Fig. 2 Mechanism of work of insurance approach for solving the problem of food security in modern Russia

The second approach is insurance. It is aimed at state regulation of the system of insurance of agricultural objects, i.e., it is oriented at insurance companies that insure the activities of food enterprises. The mechanism of work of insurance approach is shown in Fig. 2.

As seen in Fig. 2, through establishment of pricing limits, formation of a list of insured risks, control over the issue of licenses, and other tools of management of the system of insurance of agricultural objects, the state, represented by the department of insurance market with the Central Bank, stimulates the reduction of the level of geographical risks of doing business in the sphere of agriculture, which, similarly to the stimulating mechanism, leads to solving the problem of national food security in modern Russia.

4 Conclusions and Recommendations

As a result of the research, it is possible to conclude that the regional economy of modern Russia is peculiar for the problem of food security. The subsidizing approach, which has been used for solving it over the recent years, does not allow reducing the gap between the volume of production and consumption of food in national economy and even leads to its growth.

It should be noted that both offered approaches allow achieving the goals of import substitution in the food sphere with market means, and the role of the state is brought down to supporting the work of the market mechanism. This is their main advantage, as compared to subsidizing approach, as it allows minimizing the level of state interference into market processes and saving the assets of the state budget.

As a result of realization of the offered approaches, contradiction between economic, social, and ecological interests of regions' development is eliminated,

and their sustainable development is reached. Selection of the approach to solving the problem of food security, optimal for each specific region of Russia, should be conducted on the basis of problem analysis in the sphere of food security of the region. Under the condition of domination of market factors, it is expedient to use the stimulating approach, and in case of domination of geographical causes of emergence of this problem, the insurance approach is preferable.

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Creation of Innovations-Oriented Clusters in the Sphere of Agro-industrial Complex as a Perspective Direction of Foreign Economic Cooperation of Russia and Europe

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Abstract The purpose of the article is to verify the offered hypothesis and to determine possibilities and perspectives of strengthening and development of foreign economic cooperation of Russia and Europe through creation of innovations-oriented clusters in the sphere of agro-industrial complex. For that, the authors determine the role and meaning of innovations in supporting the competitiveness of the sphere of agro-industrial complex and development of Russian and European economies and substantiate expedience of the use of cluster approach to foreign economic cooperation of Russia and Europe in the sphere of agro-industrial complex. The authors use methods of regression and correlation analysis and apply the method of logical analysis, evaluation of statistical information, analysis of causal connections, and general scientific methods of the research: synthesis, induction, deduction, and formalization. As a result of the research, the authors come to the conclusion that creation of innovations-oriented clusters in the sphere of agro-industrial complex is a perspective direction of foreign economic cooperation of Russia and Europe. The authors develop recommendations and offer perspective mechanisms for creation of innovations-oriented clusters in the sphere of agro-industrial complex in Russia and Europe, given the structural and logical scheme of strengthening and development of foreign economic cooperation of Russia and Europe through the creation of innovations-oriented clusters in of agro-industrial complex.

JEL Codes F02 • O32 • Q16 • Q17

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E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_74

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1 Introduction

In the age of postindustrialization of economic systems of the countries of the world, traditional sectors of economy—industry and agriculture—are ousted and replaced by the service sphere, which is accompanied by active development of financial sphere, service sphere, and high-tech sphere. Nevertheless, traditional sectors haven't yet lost their significance for the economy, which was shown by the recent financial crisis. It led to manifestation of dangers for the new economic mode and showed the necessity for well-balanced sectorial development of economic systems.

Agro-industrial complex is a basis for provision of national and food security and, accordingly, sustainability of economy's development, which is especially necessary during crisis, when economic ties disappear, and the necessity for provision of internal needs of society by domestic business strengthens. Thus, topicality of development of agro-industrial complex grows; its intensive vector could be international cooperation in this sphere for exchange of knowledge, technologies, and resources.

This work offers a hypothesis that creation of innovations-oriented clusters in the sphere of agro-industrial complex is a perspective direction of foreign economic cooperation of Russia and Europe. The purpose of the article is to verify this hypothesis and to determine possibilities and perspectives of strengthening and development of foreign economic cooperation of Russia and Europe through creation of innovations-oriented clusters in the sphere of agro-industrial complex. This goal is achieved by solving the following tasks:

1. Determining the role and meaning of innovations in support for competitiveness of the agro-industrial complex and development of Russian and European economies
2. Substantiation of expedience of the use of the cluster approach to foreign economic cooperation of Russia and Europe in the sphere of agro-industrial complex
3. Developing recommendations for the creation of innovations-oriented clusters in the sphere of agro-industrial complex in Russia and Europe

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

Innovations are generally accepted and the popular source and accelerator of economic development in all spheres of economic activities. Innovational components of agro-industrial complex is studied in a number of works by Kuksa (2014), Emerick et al. (2016), Hailu (2016), Monty et al. (2016), Bezrukova (2014), Parahina et al. (2014), etc.

Clustering is also viewed by most researchers as a leading mechanism of stimulation of the development of economic systems and sectorial markets. Theoretical foundations of formation and development of economic clusters, as well as applied aspects of their management, are shown in the works by Agarkova et al. (2016), Dzhandzhugazova et al. (2015), Zhukenov (2014), Kravets et al. (2014), Popkova et al. (2013), Skiter et al. (2015), etc.

Based on the study of recent publications on the topic of this paper, it is possible to state that despite high popularity of the ideas of innovational development and clustering of economy, they are rarely combined within the research by modern theoreticians and practitioners. In view of agro-industrial complex, such studies are very rare, which is a serious gap of modern economic science—so this paper is to fill this gap.

In order to determine the role and meaning of innovations in support of competitiveness of the agro-industrial complex and development of Russian and European economy, the authors use methods of regression and correlation analysis. The authors determine the dependence between the index of innovational activity in the sphere of agro-industrial complex according to the Global Innovation Index (x), added value in agro-industrial complex according to the World Bank (y_1), and GDP according to the International Monetary Fund (y_2).

The objects of the research are Russia and from Europe—Germany, as the leading economy of the EU, and Albania, as the largest agrarian economy of Europe. For the purpose of determination of country and time dynamics, the data for 2005, 2010, and 2015 are used. Estimate indicators (which are calculated automatically) include coefficient of correlation (r^2) and coefficient b in the model of paired linear regression of the type $y = a + bx$.

In the process of substantiation of expedience of using a cluster approach to foreign economic cooperation of Russia and Europe in the sphere of agro-industrial complex, the authors use the method of logical analysis, evaluation of statistical information, and analysis of causal connections. The work also uses general scientific methods of research—synthesis, induction, deduction, and formalization.

3 Results

Let us determine the role and meaning of innovations in support for the competitiveness of agro-industrial complex and development of Russian and European economies. For that, let us use the data of Table 1.

Based on the data of Table 1, the following models of paired linear regression were obtained:

For countries:

- $y_1(\text{Russia}) = 1.56 + 6.76x$
- $y_2(\text{Russia}) = 8.02 + 3.89x$

Table 1 Summary for regression and correlation analysis

Indicators	Values of indicators for countries and periods											
	Russia					Germany					Albania	
	2005	2010	2015	2005	2010	2015	2005	2010	2015	2005	2010	2015
Index of innovational activity in the sphere of agro-industrial complex (points)	25.14	38.10	38.41	15.62	19.46	29.13	12.63	20.31	31.14			
Added value in agro-industrial complex (USD billion)	32.5	50.9	54.9	19.6	22.1	16.5	15.1	21.4	22.3			
GDP (USD billion)	2314.0	3031.0	3679.1	2804.7	3279.7	3842.6	19.3	27.3	32.4			

Source: World Bank (2016), Dutta et al. (2015), International Monetary Fund (2016)

This shows that with the increase of the value of index of innovational activity in the sphere of agro-industrial complex of Russia by 1 point, the added value in agro-industrial complex grows by \$6.76 billion, and GDP by \$3.89 billion. Correlation coefficient constitutes 99.3%.

- $y_1(\text{Germany}) = 2.97 + 5.27x$
- $y_2(\text{Germany}) = 7.32 + 4.17x$

This shows that with the increase of the value of index of innovational activity in the sphere of agro-industrial complex of Germany by 1 point, the added value in agro-industrial complex grows by \$5.27 billion, and GDP by \$4.17 billion. Correlation coefficient constitutes 99.1%.

- $y_1(\text{Albania}) = 3.68 + 6.11x$
- $y_2(\text{Albania}) = 6.92 + 8.45x$

This shows that with increase of the value of activity index in the sphere of agro-industrial complex of Albania by 1 point, the added value in agro-industrial complex grows by \$6.11 billion, and GDP by 8.45 billion. Correlation coefficient constitutes 99.7%.

For the periods:

- $y_1(2005-2015) = 4.23 + 7.92x$
- $y_2(2005-2015) = 5.86 + 6.34x$

This shows that with the increase of the value of index of innovational activity in the sphere of agro-industrial complex by 1 point on average for the viewed countries, the added value in agro-industrial complex grows by \$7.92 billion, and GDP by \$6.34 billion. Correlation coefficient constitutes 99.4%.

The performed calculations show that the connection between the studied indicators for all countries and period is strong and direct, on the basis of which it could be concluded that innovations are very important for supporting the competitiveness of agro-industrial complex and development of Russian and European economies.

Let us determine the expediency of using the cluster approach to the foreign economic cooperation of Russia and Europe in the sphere of agro-industrial complex. Clustering is actively used by leading countries of the world for activation of the processes of economic growth and development. For example, wine clusters in Chile and Hungary, high-tech cluster in the USA, and car-building clusters in Austria and Hungary largely determine the character, rate, and direction of economic development of these counties. In the USA, clusters provide more than 60% of GDP and more than 50% of the population's employment. According to the 2015 data, there are more than 2000 economic clusters in the world (Bocharova, 2013).

This proves the high effectiveness of using the cluster approach as a tool of stimulating the development of economic systems. Clusters are in high demand in the sphere of agro-industrial complex, as they allow solving a lot of problems of its development, among which are complexity of organization of technological process within separate enterprises; high-risk component, caused by dependence on the geography

factor; high competition; and insignificant market which complicates the achievement of high indicators of profitability and attraction of financing, investments, etc.

It should be noted that there are certain preconditions for cooperation between Russia and Europe in the sphere of agro-industrial complex. In particular, Russian agro-industrial complex actively uses imported equipment—primarily, European. Russia is one of the main sales markets for European products in the sphere of agro-industrial complex. There is already close interdependence of Russia and Europe in the sphere of agro-industrial complex, within which the satisfaction of Russian demand for food products requires its import from Europe which, in its turn, is interested in support for its food manufacturers that depend on export to Russia.

Transnational clusters in agro-industrial complex would allow simplifying and accelerating the process of development of this sphere and providing more favorable conditions for further development of cooperation of Russia and Europe in its context. The following recommendations for the creation of innovations-oriented clusters in the sphere of agro-industrial complex in Russia and Europe are offered.

Firstly, it is expedient to develop cooperation in the sphere of scientific research of agro-industrial complex. This will ensure the development of technologies and equipment in the sphere of agro-industrial complex and development of innovational products in the sphere of agro-industrial complex by joint efforts of Russia and Europe.

Secondly, it is necessary to expand investment flows in innovations-oriented clusters in the sphere of agro-industrial complex. This will become a basis for the financing of modernization of technologies and equipment in the sphere of agro-industrial complex and development of joint manufacture of innovational products by Russia and Europe in the sphere of agro-industrial complex. Here the key role belongs to European investors.

Thirdly, the development of marketing of innovations in the sphere of agro-industrial complex is very important. This will create favorable conditions for the promotion of innovational technologies and equipment in the sphere of agro-industrial complex and start of sales of innovational продукции in the sphere of agro-industrial complex. Here, the leading role belongs to Russian sales networks that work in the B2C and B2B markets of the agro-industrial complex.

Logics and supposed results of realization of the offered recommendations, as corresponding mechanisms of cluster cooperation, are reflected in Fig. 1.

As is seen from Fig. 1, as a result of realization of the offered recommendations and actions of the developed mechanism, Europe will get more profitable conditions of promotion and sales of products in the sphere of agro-industrial complex, and Russia better satisfaction of demand for the products of AIC. Both parties will have the increase of effectiveness of manufacture of AIC products.

Reduction of transaction costs will take place by means of clustering, and reduction of transformation costs and growth of efficiency by means of the creation and implementation of innovations. The increase of national food security in the sphere of agro-industrial complex will be achieved: in Russia, by means of development of production, and in Europe, by means of stabilization of sales and stimulation of production. This will stimulate strengthening and development of

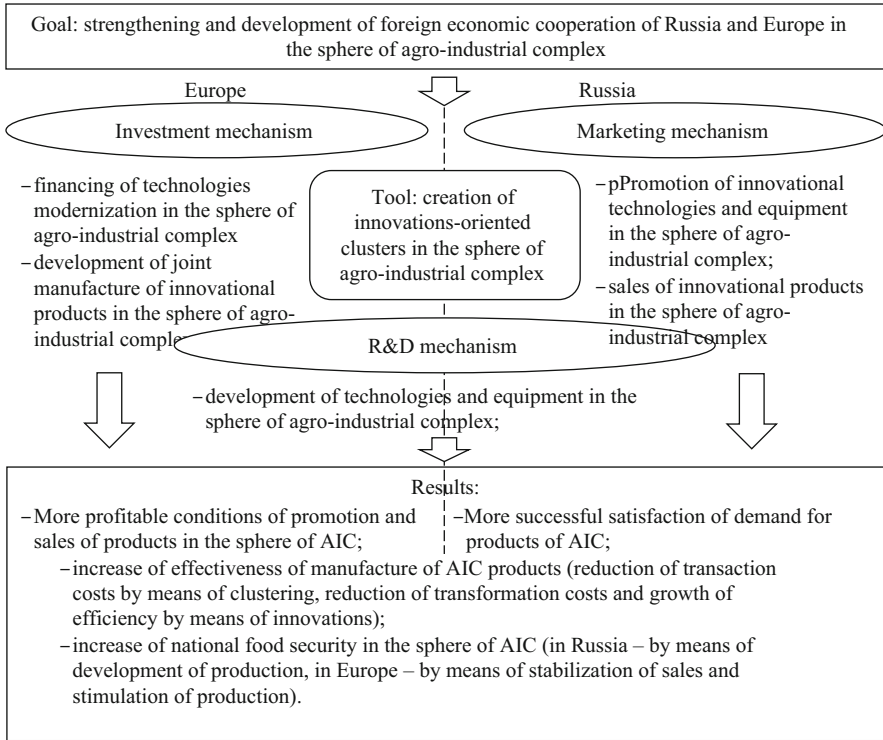


Fig. 1 Structural and logical scheme of strengthening and development of foreign economic cooperation of Russia and Europe through the creation of innovations-oriented clusters in the sphere of agro-industrial complex

foreign economic cooperation of Russia and Europe in the sphere of agro-industrial complex.

4 Conclusions and Recommendations

As a result of the performed research, it is possible to conclude that the offered hypothesis is proved, and it is shown that the creation of innovations-oriented clusters in the sphere of agro-industrial complex is really a perspective direction of foreign economic cooperation of Russia and Europe, as it allows strengthening their international relations and solving the problems of food security.

Fundamental significance of the results of this work consists in the development of theory and methodology of innovational economy and development of conceptual provisions of cluster approach to economic growth. Applied value of this article is determined by possibility and expedience of the use of the offered recommendations and developed mechanisms of creation of innovations-oriented

clusters in the sphere of agro-industrial complex in the interests of strengthening and development of foreign economic cooperation of Russia and Europe.

It should be noted that the received results are somewhat limited by the generalized character of the prepared recommendations. That's why further perspectives of development of the theory of foreign economic cooperation of Russia and Europe are related to the detailed description and development of specific measures for creation of innovations-oriented clusters in the sphere of agro-industrial complex.

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Foreign Economic Activities of Subjects of SME in the Context of Cooperation of Russia and Europe

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Abstract The authors seek to study the problems and perspectives of development of foreign economic subjects of small and medium entrepreneurship in Russia in the context of its cooperation with European countries. Methodological basis of the research includes the method of analysis of statistical information and methods of regression and correlation analysis. The authors study the level and dynamics of development of foreign economic activities of subjects of small and medium entrepreneurship in Russia and Europe, determine key barriers on the path of development of foreign economic activities of subjects of small and medium entrepreneurship in Russia and study of successful European experience in overcoming them, and determine perspectives and develop recommendations for development of foreign economic activities of subjects of small and medium entrepreneurship in the context of cooperation of Russia and Europe. The main conclusion from the performed research is substantiation of the hypothesis that subjects of small and medium entrepreneurship in modern Russia are peculiar for low activity in the sphere of conduct of foreign economic activities, new perspectives of increase of which are opened within cooperation with European countries.

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This is reflected in the proprietary scheme of development of foreign economic activities of subjects of small and medium entrepreneurship in the context of cooperation between Russia and Europe.

JEL Codes O24 • L53 • F02

1 Introduction

Under the conditions of globalization, focus of economic systems on internal economic processes contradicts the interests of their growth and development. Openness and active foreign economic activities become a guarantee of their effective functioning, as they allow obtaining profits and advantages from international division of labor. In this article, we seek to study the problems and perspectives of development of foreign economic activities of subjects of small and medium entrepreneurship in Russia in the context of its interaction and cooperation with countries of Europe.

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

Conceptual platform of conduct of foreign economic activities by subjects of small and medium entrepreneurship is set in the works of Sushchenko and Trunina (2016), Vasyuk (2015), Sakharova et al. (2015), Dzhandzhugazova et al. (2015), Kravets et al. (2014), etc. Applied aspects of the studied problem are reflected in scientific publications of Kandogan (2014), Aničić et al. (2016), Dikova et al. (2016), Popkova et al. (2013), Skiter et al. (2015), etc.

Small enterprises include business structures with <50 employees and turnover and balance cost of less than EUR 10 million. Medium enterprises include business structures with <250 people, turnover of less than EUR 50 million, and balance cost of less than EUR 43 million (Eurostat 2016).

In Russia, small and medium enterprises are distinguished by the criterion of their participation in the capital of the subjects of the Russian Federation, municipal entities, public and religious organizations (associations), charity and other funds (for legal entities), average number of employees, and revenues from product sales. Microenterprises include business structures with <15 employees and revenue from product sales of less than RUB 120 million.

Small enterprises include business structures, share of which in their capital does not exceed 25%, with <100 employees and less than RUB 800 million of turnover. Medium enterprises include business structures, share of which in their capital

does not exceed 49%, with <205 employees and less than RUB 2000 million of turnover (Rosstat 2015).

Methodological basis of the research includes:

- Method of analysis of statistical information
- Method of regression and correlation analysis

3 Results

In order to determine the level and dynamics of development of foreign economic activities of subjects of small and medium entrepreneurship in Russia and Europe, let us use the statistical information, given in Fig. 1.

In Russia, despite the positive dynamics, the share of subjects of small and medium entrepreneurship that conduct foreign economic activities is rather low. In 2015, it constituted 15%. The results of sociological survey of representatives of subjects of small and medium entrepreneurship in Russia as to the main factors that limit their business activity in 2015 show that their development is hindered by the following reasons (Rosstat 2015):

- Lack of financial assets (43%)
- Insufficient demand for this type of services (42%)
- Existing level of taxation (36%)
- Lack of highly qualified personnel (21%)
- High interest rate of commercial credit (14%)

This shows low involvement of subjects of small and medium entrepreneurship in Russia in foreign economic activities and their potential interest in them, as they open access to necessary volume of cheap financial resources and highly qualified personnel, global demand, and more favorable tax regimes.

Let us analyze the experience of Russia and Europe in development of foreign economic activities of subjects of small and medium entrepreneurship. For that, let us use Table 1.

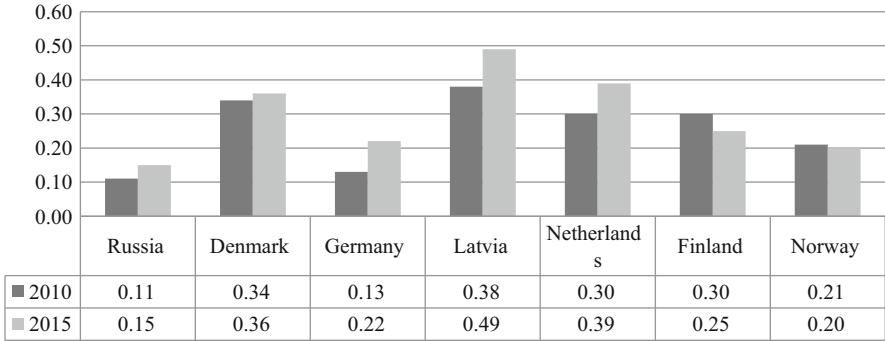


Fig. 1 Dynamics of share of subjects of small and medium entrepreneurship that conduct foreign economic activities in Russia and countries of Europe in 2010 and 2015 [Source: Eurostat (2016) and Rosstat (2015)]

Table 1 Development of foreign economic activities of subjects of small and medium entrepreneurship in Russia and Europe

Indicator	Year	Countries						
		Russia	Denmark	Germany	Latvia	Netherlands	Finland	Norway
Share of SME that conduct foreign economic activities (%)	2010	0.11	0.34	0.13	0.38	0.30	0.30	0.21
	2015	0.15	0.36	0.22	0.49	0.39	0.25	0.20
Share of SME in economy (%)	2010	0.19	0.97	0.98	0.96	0.97	0.98	0.98
	2015	0.24	0.99	0.99	0.99	0.99	0.99	0.99
Share of SME showing high innovational activity (%)	2010	0.05	0.31	0.25	0.10	0.23	0.39	0.21
	2015	0.09	0.38	0.43	0.17	0.42	0.41	0.38
Index of economic freedom (%)	2010	0.48	0.73	0.73	0.67	0.74	0.68	0.67
	2015	0.51	0.75	0.74	0.70	0.75	0.72	0.71

Using the data of Table 1, we built the following models of paired linear regression:

- $y = 0.22 + 1.96x_1$. According to this model, growth of the share of subjects of small and medium entrepreneurship in economy (reduction of market competition and corresponding increase of the level of competition in sectorial markets) by 1% ensures growth of the share of subjects of small and medium entrepreneurship that conduct foreign economic activities by 1.96%.
- $y = 0.41 + 2.95x_2$. According to this model, growth of the share of subjects of small and medium entrepreneurship that show high innovational activity

(actively implement leading technologies into their work for optimization of business processes) by 1% ensures growth of the share of subjects of small and medium entrepreneurship that conduct foreign economic activities by 2.95%.

- $y = 0.71 + 2.15x_3$. According to this model, growth of the value of economic freedom index (increase of the level of favorableness of business activity) by 1% ensures growth of subjects of small and medium entrepreneurship that conduct foreign economic activities by 2.15%.

Therefore, the key barriers on the path of development of foreign economic activities of subjects of small and medium entrepreneurship in Russia are high market concentration and low level of competition in sectorial markets, low innovative activities and low global competitiveness of subjects of small and medium entrepreneurship, and unfavorable business climate. They have been successfully overcome in Europe.

Interaction and cooperation of Russia and Europe open new perspectives in the sphere of development of foreign economic activities of subject of Russian small and medium entrepreneurship, as they create possibilities for integration of their economic systems. Logical scheme of development of foreign economic activities of objects of small and medium entrepreneurship in the context of interaction and cooperation of Russia and Europe is shown in Fig. 2.

As seen in Fig. 2, the following directions of integration are offered: integration of Russian and European markets which stimulates increase of demand by means of expansion of sales markets, integration of entrepreneurial structures which ensures growth of accessibility of financial and human resources, and integration of public authorities which stimulates unification of the policy in the sphere of entrepreneurship support.

4 Conclusions and Recommendations

Thus, the T hypothesis was proven—subjects of small and medium entrepreneurship in modern Russia are peculiar for low activity in the sphere of conduct of foreign economic activities, new perspectives of increase of which are opened within cooperation and interaction with countries of Europe. For maximal and full use of advantages of integration, we offer to use the following recommendations:

- Reduction of customs barriers between Russia and Europe
- Stimulation of support for domestic manufacturers
- Interaction and cooperation in scientific sphere
- Support for realization of cluster initiatives in entrepreneurship
- Exchange of experience in the sphere of stimulation of development of entrepreneurship
- Joint realization of supporting projects

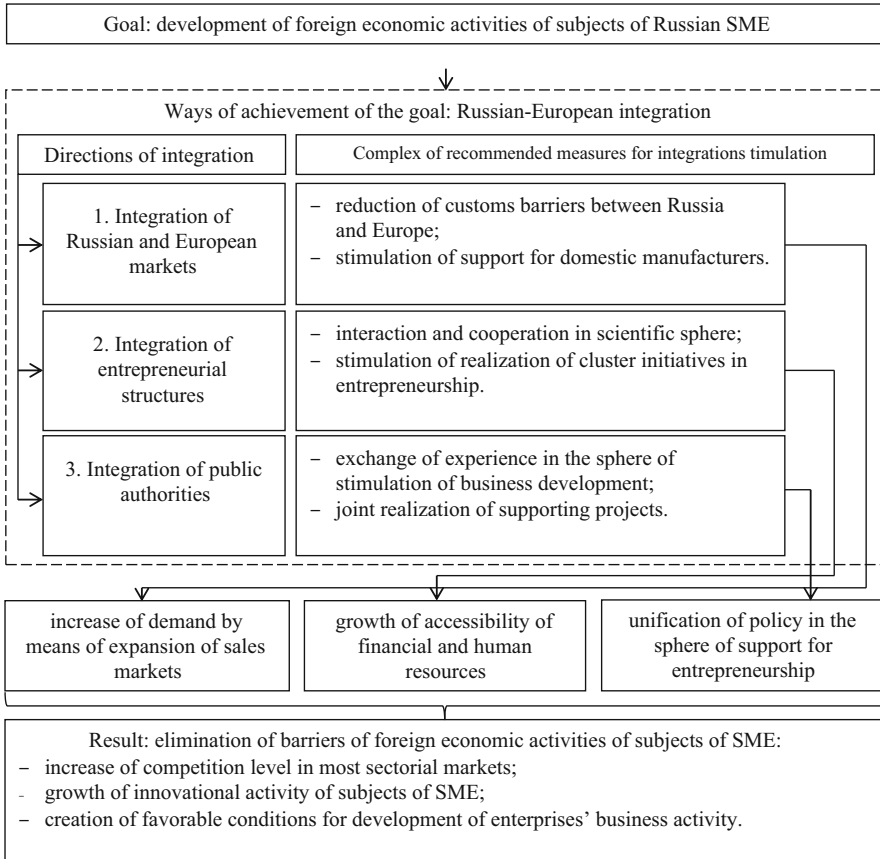


Fig. 2 Logical scheme of development of foreign economic activities of subjects of small and medium entrepreneurship in the context of interaction and cooperation of Russia and Europe

As a result, barriers for foreign economic activities of subjects of small and medium entrepreneurship are eliminated. In particular, the level of competition in most sectorial markets and innovational activity of subjects of small and medium entrepreneurship grow, and favorable conditions for development of business activity of enterprises are created, which ensures development of foreign economic activities of subjects of Russian small and medium entrepreneurship.

It is necessary to note that despite wide coverage of the performed research, its results are limited by the character of advantages of interaction and cooperation between Russia and Europe. It leads to development of foreign economic activities of subjects of small and medium entrepreneurship in Russia. At that, advantages for Europe are not viewed in this research. That's why it is expedient to study them and show them in further works on this problem.

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Marketing Tools of Joint Crises Fighting in Socioeconomic Sphere of Russia and Europe

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Abstract The authors seek the goal of studying the perspectives of the use of marketing tools for joint crises fighting in socioeconomic sphere of Russia and Europe. The authors determine the dynamics of development of the recent financial crisis in economic systems of Russia and Europe and of their current state with the help of statistical analysis and perform evaluation of application of directive measures in fighting economic crisis with the help of the proprietary methodology, which supposes calculations by a special formula and of the correlation analysis. As a result of the research, the authors come to the conclusion that further attempts of overcoming the crises in socioeconomic sphere of Russia and Europe are not expedient due to their low effectiveness. This requires the use of the developed marketing model of joint crises fighting in socioeconomic sphere of Russia and Europe which allows involving entrepreneurial structures into the process of crises fighting in socioeconomic sphere and realizing marketing measures in the sphere of crisis management at macro- and microlevel simultaneously.

JEL Codes F02 • H12 • M31

1 Introduction

The accumulated experience of functioning of economic systems in the conditions of market economy and formation of strong scientific base led to change of expectation of countries of the world as to stable and sustainable economic growth and development in the long term for readiness to periodic emergence of economic crises. However, the whole world makes active attempts to overcome consequences of crisis in order to fight it.

The working hypothesis of this research is based on proprietary hypothesis that further attempts of directive crises fighting in socioeconomic sphere in Russia and Europe are not expedient due to their low effectiveness. This requires the use of

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marketing tools and involvement of entrepreneurial structures into the process of crises fighting in socioeconomic sphere, as well as realization of marketing measures in the sphere of crisis management at macro- and microlevels at the same time. In this article, the authors seek the aim of studying the perspectives of the use of marketing tools for joint crises fighting in socioeconomic sphere of Russia and Europe.

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

Conceptual issues of study of crises in socioeconomic sphere are viewed in publications of Fischbacher-Smith and Fischbacher-Smith (2016), Chaawa et al. (2016), Takagi (2016), and Hunter et al. (2016). Scientific and methodological studies, devoted to development of tools of crises fighting in socioeconomic sphere, include the works of Koh et al. (2016), Christensen et al. (2016), Boin and Lodge (2016), and Boin (2016).

The applied studies, devoted to adaptation of universalized methodologies of crises fighting in socioeconomic sphere to the economic practice of real economic systems and evaluation of effectiveness of their use by the example of various counties, include the works by Dzhandzhugazova et al. (2015), Kravets et al. (2014), Popkova et al. (2013a, b), Skiter et al. (2015), Davydyants et al. (2012), Zabaznova and Patsyuk (2016), and Zabaznova et al. (2014).

For evaluation of effectiveness of applying directive measures for fighting economic crisis, this work uses specially developed proprietary methodology, which supposes calculations by the following formula:

$$\text{Edir}_n = (\text{GDP}_{n+1} - \text{GDP}_n) / \text{SEov}_n \quad (1)$$

where Edir—effectiveness of application of directive measures for fighting economic crisis

GDP—gross domestic product

SEov—total state expenses for overcoming the economic crisis

n —studied year

The received values of Edir are treated in the following way. If $\text{Edir} > 1$, it shows high effectiveness of application of directive measures in fighting economic crisis in this country in the studied period. If $\text{Edir} \leq 1$, the effectiveness is low. Also, it is possible to distinguish the separate interval: $\text{Edir} \leq 0$, in which effectiveness is zero or negative.

Also, while solving this issue, the authors use the method of correlation analysis—in order to determine dependence between the value of the index of vulnerability and crisis of economy (Ivc) (y) and total state expenses for economic crisis fighting (x), calculating the correlation coefficient (r^2). For the connection to be strong, the value of this coefficient should be $< 95\%$.

3 Results

Let us view dynamics of development of the recent financial crisis in economic systems of Russia and Europe and their current state (Fig. 1).

In order to determine the reason for long duration of the depression, we performed evaluation of effectiveness of use of directive measures for fighting economic crisis in selected countries, the initial and estimate data and results of which are given in Table 1.

It is worth mentioning that even at the stage of overcoming the crisis (economic growth), effectiveness remains low. Thus, in 2015, effectiveness of application of these measures in Russia constituted 0.02; in Croatia, 0.04; in Finland, 0.04; and in Greece, -0.05. This shows that directive methods of crisis management should not be used at any phase of economic cycle. To additionally verify this conclusion, we performed regression and correlation analysis, the results of which (and the data for 2015) are given in Table 2.

As seen in Table 2, the received values of correlation coefficients for the studied countries are low (lower than 95%), which shows the lack of clear and significant connection between the values of the index of vulnerability and crisis of economy (Ivc) and total state expenses for economic crisis fighting.

The performed analysis of experience of directive crises fighting in socioeconomic sphere in Russia and Europe showed low effectiveness of this approach, which confirms the offered hypothesis that further attempts of directive crises fighting in socioeconomic sphere in Russia and Europe are not expedient due to their low effectiveness.

As an alternative to the directive approach, this work offers two-level marketing model of crises fighting in socioeconomic sphere. It supposes the use of marketing tools at micro- and macrolevel. At microlevel, marketing activity of entrepreneurial

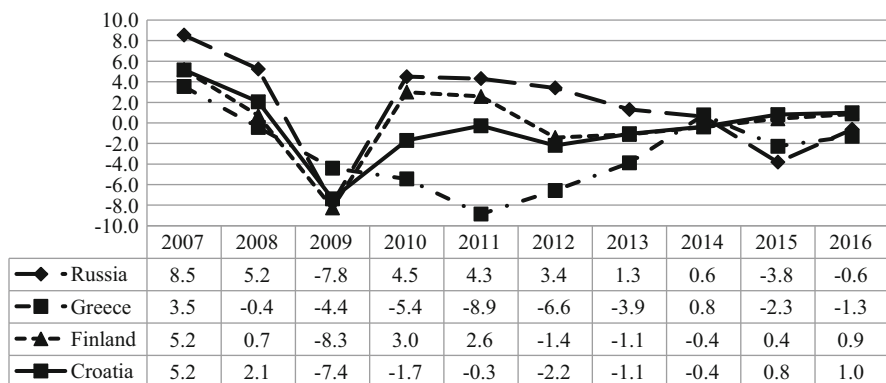


Fig. 1 Dynamics of growth of GDP of Russia, Greece, Finland, and Croatia in constant prices in 2007–2016. Source: International Monetary Fund (2016)

Table 1 Initial and estimate data and results for evaluating the effectiveness of application of directive measures for fighting economic crisis in Russia, Greece, Finland, and Croatia in 2007–2015

Countries	Indicators ^a	2007	2008	2009	2010	2011	2012	2013	2014	2015
Croatia	GDP	388.38	396.36	367.09	360.84	359.83	351.96	348.21	346.96	349.77
	SEov	69.91	91.16	84.43	82.99	82.76	80.95	80.09	79.80	80.45
	Edir	0.11	-0.32	-0.07	-0.01	-0.10	-0.05	-0.02	0.04	0.04
Finland	GDP	388.38	396.36	367.09	360.84	359.83	351.96	348.21	346.96	349.77
	SEov	69.91	95.13	88.10	86.60	86.36	84.47	83.57	83.27	83.95
	Edir	0.11	-0.31	-0.07	-0.01	-0.09	-0.04	-0.02	0.03	0.04
Greece	GDP	276.50	275.27	263.17	248.83	226.77	211.87	203.62	205.20	200.54
	SEov	49.77	74.32	71.06	67.18	61.23	57.21	54.98	55.40	54.15
	Edir	-0.02	-0.16	-0.20	-0.33	-0.24	-0.14	0.03	-0.08	-0.05
Russia	GDP	653.64	687.95	634.29	662.83	691.33	714.84	724.13	728.47	700.61
	SEov	137.27	247.66	228.34	238.62	248.88	257.34	260.69	262.25	252.22
	Edir	0.25	-0.22	0.12	0.12	0.09	0.04	0.02	-0.11	-0.02

Source: International Monetary Fund (2016), Khokhlova (2016)

^aUnits of indicators measurement: GDP and SEov—USD billion, Edir—point from 1

Table 2 Results of correlation analysis of application of directive measures for fighting economic crisis in Russia, Greece, Finland, and Croatia in 2007–2015

Indicators	Croatia	Finland	Greece	Russia
Ivc, point from 1 (for 2015)	10.14	10.25	10.09	10.12
SEov, USD billion (for 2015)	80.45	83.95	54.15	252.22
r ² (%)	28	34	16	19

Source: Khokhlova (2016), Eurostat (2016)

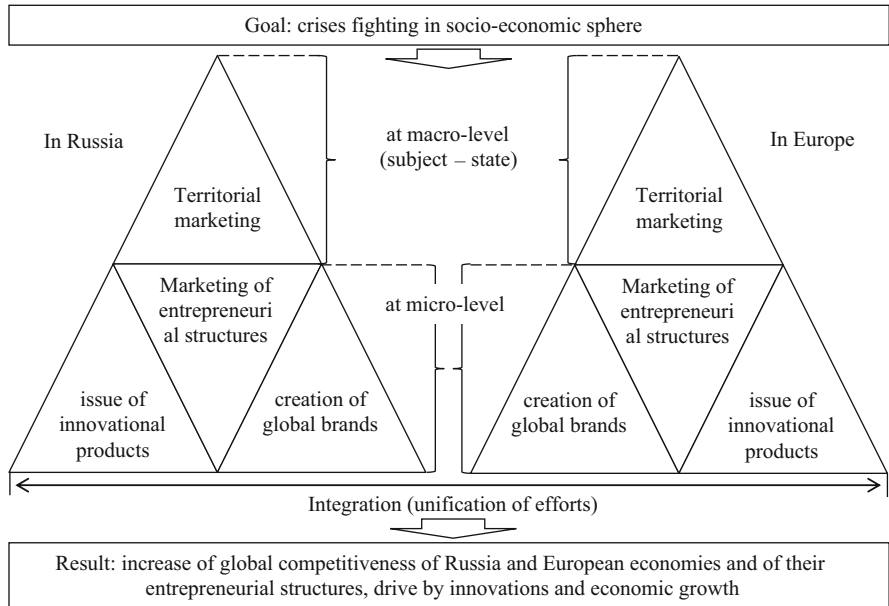


Fig. 2 Marketing model of joint crises fighting in socioeconomic sphere of Russia and Europe

structures, oriented at the issue of innovational products and creation of global brands, should be evaluated.

At macrolevel, the tools of territorial marketing should be used, which supposes formation and strengthening of the brand of economic system on the whole and creation of favorable and attractive conditions for economic activities on its territory. The model is presented in Fig. 2.

As seen in Fig. 2, as a result of realization of this model, global competitiveness of Russian and European economies is achieved, as well as of their entrepreneurial structures, driven by innovations. Due to foreign economic cooperation of Russia and Europe within the offered model, it is possible to use marketing and integration mechanisms of crises fighting in socioeconomic sphere, which creates additional synergetic effect, increasing the efficiency of its realization.

4 Conclusions and Recommendations

As a result of the performed research, it is possible to conclude that the working hypothesis was proved. Analysis of empirical data shows that directive approach does not lead to emergence of the proper effect in Russia and Europe, and crises fighting in socioeconomic sphere require marketing tools simultaneously at macro- and microlevel of economy, as well as integration mechanism.

The developed marketing model of joint crises fighting in socioeconomic sphere of Russia and Europe develops provisions of the concept of marketing, concept of economic integration, and concept of crisis management, which determines its theoretical significance. Practical significance of the offered model consists in the possibility for its applications for increase of effectiveness of crises fighting in socioeconomic sphere in Russia and Europe.

The work is of complex character, but it is limited by narrowness of countries' selection for the research. Therefore, during further research, it is expedient to expand the selection and analyze the correctness of the received conclusions and offered recommendations by the example of other countries.

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Main Trends in Development of Kazakhstan National Innovative System Under the Current Conditions

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Abstract The developed countries' experience shows dependence of effectiveness of the national economy on its innovative development. Formation of the National Innovative System (hereinafter "NIS") is the primary objective for countries taking into account availability of correlation dependences between innovation of the national economy and quality of life of the people. Building of a national innovative system has become a political task and requires extensive analysis for Kazakhstan aiming to enter the top 30 most competitive countries.

1 Introduction

In accordance with the USA approach, in a narrow sense, an innovative system is considered as a scientific and technological system including, above all, institutes generating new knowledge. The European school envisages not only production but

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also dissemination, acquisition, and application of knowledge through the processes of training between economic subjects, experiments, and improvement of technologies and products during their usage. It is proposed to conduct the research of the NIS in dynamics as a process of transformation step by step of one complex of institutes to another one or as a process of radical institutional changes.

The aim of building an innovation system is connected with its function to provide the economic growth of the country by production of knowledge.

Innovative system is an open system that is closely connected with other several systems such as production system, financial system, labor market, or system of industrial relations and dependent on their positive effect. The main objective of the innovative system is to make a contribution to increment the growth of the economy by production of knowledge that is especially useful for *modernization and renovation of the system of production, products, services, and processes*. The capability of the innovative system to implement its own modernizing function also depends on the positive effects of its *environment* such as the system of education, science, legislation, and culture. It can be concluded that for correct analysis of innovative system we should understand it as an *open system* closely connected with several other systems.

The interdependence of the NIS elements supposes the following: private sector develops technologies based on own researches and masters innovations. A government provides support for production of fundamental knowledge and strategic technologies and takes part in building of infrastructure and favorable institutional conditions for innovative activities of private companies.

2 Latest Research and Publication Analysis

Analysis of Latest Publications The concepts of innovative systems arose in the west in the 1980s and actively were developed in the 1990s of the last century by such scientists as Freeman (1987), Freeman and Soete (1990), Metcalfe (1995), Lundvall (1992, 2000), Lundvall et al. (2006), Kaukonen and Nieminen (2000), Nelson (1993), and Patel and Pavitt (1994).

Goal of Research The analysis of the publications has demonstrated the existence of various definitions of the NIS proving that up to now there is no unified point of view on the essence, structure, and functions of the NIS, which, to a largely extent, is determined by national peculiarities. The goal of this research is to reveal tendencies in building the national innovative system, stages, and specific features, conduct comparative analysis of innovative activity, and identify the issues and ways of its development in Kazakhstan.

Object of the Research

The object of the research is the tendencies of development of national innovative system, as an object of the research, the organizational, economic, and

administrative communications and the relations arising in development of national innovative system in modern conditions of globalization act.

Methods for the Research

In the course of research and the analysis of information methods of the comparative, logical analysis, a method of generalization and system approach was applied.

Key Research Findings

The NIS national peculiarities are connected with the role of the government and private sector and large and small business in production of knowledge, proportion of fundamental and applied researches and development works, dynamics of development, and industry-specific structure of innovative activities.

In Kazakhstan, the innovative system has built two stages. During the first stage (2003–2009), the law “on state support of innovation activities,” the first strategy of industrial and innovative development up to 2015, and programs for building national innovative system of the Republic of Kazakhstan for 2005–2015 have been developed, and technology parks, first experimental design bureaus, and parks of innovation technologies have been created.

During the second stage (2010–2014), legal framework has been further formed; infrastructure programs and mechanisms have been developed, and first significant results have been obtained. Years 2015–2019 will be the third stage of the NIS development in Kazakhstan (Seitkassimov et al. 2015; Ivanova et al. 2006; State Program of Forced Industrial and Innovative Development of the Republic of Kazakhstan 2010; Yegemberdieva et al. 2012).

Among peculiarities of building the NIS in Kazakhstan, it is worthy to note that due to feudality of development and agrarian specification Kazakhstan rather did not have the basis for creation of innovations. And Kazakhstan has to build newly the innovative system. There are also pluses: there is no need to adopt an old infrastructure. During the last period, a new institutional structure of the NIS has been built.

The NIS structure of Kazakhstan includes development institutions, design bureaus, technological parks, and special economic zones.

According to the efficiency analysis of Kazakhstan, innovative system conducted based on the data provided by the Committee for Statistics of the Ministry of National Economy of the Republic of Kazakhstan, currently, there are eight regional technological parks in the oblasts with total area coverage of 87.3% including share of innovative companies of 50% (National Science Report 2014).

The government’s interest is shown in the maximization of economic effect of innovation activities and necessity for arrangement of monitoring the innovative process based on the principles of system, interaction, and building feedback with subjects of these activities.

State support of domestic science is carried out by increasing of expenditures for formation of the innovative system’s elements. They have been increased from 1.9 up to 66.4 billion tenge from the state budget for 2000–2014 (see Table 1) (Science and Innovative Activities of Kazakhstan 2010–2014 2015).

Table 1 Key indicators of the science status and development

	2010	2011	2012	2013	2014
Gross domestic product (bln tenge)	21,815	27,571	30,347	35,275	39,040
Domestic expenditures for researches and development works in current prices (mln tenge)	33,466	43,351	51,253	61,672	66,347
In % to gross domestic product	0.15	0.16	0.17	0.17	0.17
Number of organizations conducting researches and development works	424	412	345	341	392
Number of staff engaged in researches and development works (by the end of the year)	17,021	18,003	20,404	23,712	25,793
Including researchers	10,870	11,488	13,494	17,195	18,930
Including doctors of science	1341	1486	1065	1688	2006
PhD	59	95	131	218	330
Candidates of science	3012	3286	3629	4915	5254
Profile doctors	–	–	719	605	596
Fixed assets of organizations engaged in researches and development works (mln tenge)	22,811	29,527	37,950	–	–
Average monthly nominal salary of the employees by type of economic activity, tenge in researches and development works	103.571	121.39	148.53	153.56	171.62
In higher education	71.05	87.4	102.0	110.0	117.0

During the recent years, share of the expenditures for science has been 0.17% of the country's GDP, while share of the expenditures should be 1–1.5% of the GDP for developing countries as recommended by the International Academic Council. In Russia, this indicator is 1.3% of the national GDP; in China, 1.4%; in Germany, 2.5%; in the USA, 3.8%; and in Japan, 3.3%. Unfortunately, Kazakhstan comes short in this indicator not only to developed countries but also to some developing ones. Researches have noted that Kazakhstan is still at the fourth technological mode which indicates low science effectiveness in Kazakhstan and its weak relations with real economy.

According to Table 2, effectiveness of researches and development works was growing from 2010 to 2013, and in 2014, reduction is observed by the number of applications submitted and copyright documents issued.

Important indicators of innovative activities by OECD assessment are number of publications and their citation. According to country rating by the number of publications in Web of Science base for 2010–2014, Kazakhstan is at the 94th place (2523) against the first place of the USA (2,763,847); the number of publications per 1 mln persons is 157 (Table 3).

Share of scientific publications of Kazakhstani researchers in the world is only 0.02%, while the USA has 22%; China, 10.2%; Japan, 6.1%; and Russia about 2% (Science and Innovative Activities of Kazakhstan 2010–2014 2015). Based on the data of the Committee for Statistics of the Ministry of National Economy of the

Table 2 Effectiveness of R&D

	2010	2011	2012	2013	2014
Applications for inventions submitted	1850	1600	1468	2036	2012
In % to the previous year		86	92	139	99
Copyright documents for invention issued	1868	1887	1400	1500	1504
In % to the previous year		101	74	107	100
Invention activity coefficient	1.16	1.0	0.09	0.12	0.11
Dependency ratio	0.09	0.13	0.98	0.12	0.16
Applications for granting utility model patent submitted	133	143	182	208	203
Utility model patents issued	116	123	126	163	165
Invention activity coefficient	0.08	0.09	0.11	0.12	0.12
Dependency ratio	0.49	0.83	0.65	0.63	0.46
Applications for design copyright documents submitted	250	257	238	361	300
Design copyright documents issued	260	270	274	280	282
Invention activity coefficient	0.15	0.16	0.17	0.17	0.17
Dependency ratio	0.68	0.89	1.0	1.62	1.8
Applications for selection patents submitted	65	164	105	79	152
Selection patents issued	79	50	67	122	97
Invention activity coefficient	0.04	0.1	0.06	0.05	0.11
Dependency ratio	0.08	0.025	0.18	0.045	0.39

Notes: (1) Invention activity coefficient—number of domestic invention patent applications submitted in Kazakhstan per 10,000 persons (National Innovative System and State Innovative Policy of the Russian Federation 2009)

(2) Dependency ratio—proportion of number of foreign and domestic invention patent applications submitted in Kazakhstan (National Innovative System and State Innovative Policy of the Russian Federation 2009)

Table 3 Dynamics of research activity of Kazakhstan compared with other countries^a, units

	Total number of citations				
	2010	2011	2012	2013	2014
Azerbaijan	1410	1339	1125	849	143
Belarus	3964	3300	2049	2198	467
Kazakhstan	772	397	154	776	164
Kyrgyzstan	228	96	45	188	18
Russia	82,266	46,182	12,503	—	9379
Tajikistan	121	52	12	70	13

^a2010–2013—according to Scopus (Elsevier) database; 2014. According to InCites (Thomson Reuters) database

Republic of Kazakhstan, the number of innovatively active enterprises increased in 2014 by 3.4 times compared to 2010 in Kazakhstan (Table 4).

According to the National Science Report (National Science Report 2014), 4878 R&D was implemented in 2013. The most part of which was registered by the following industries: economics (8.6%); medicine (6.7%); agriculture, forestry, and education (by 6.6%); law sciences (5.6%); and chemical technology (5.1%) (Fig. 1).

Table 4 Key indicators of innovative activities

	2010	2011	2012	2013	2014
Total enterprises (units)	10,937	10,723	21,452	22,070	24,068
Number of enterprises with innovations by all types (units)	572	762	1622	1744	1970
Level of innovation activity (in %)	5.2	7.1	7.6	8.0	8.1
Number of enterprises with product and process innovations (units)	467	614	1215	1062	1303
Level of innovation activity (in %)	4.3	5.7	5.7	4.8	5.4
Share of innovative products in total volume of industrial production (in %)	0.65	0.85	1.25	1.64	1.5

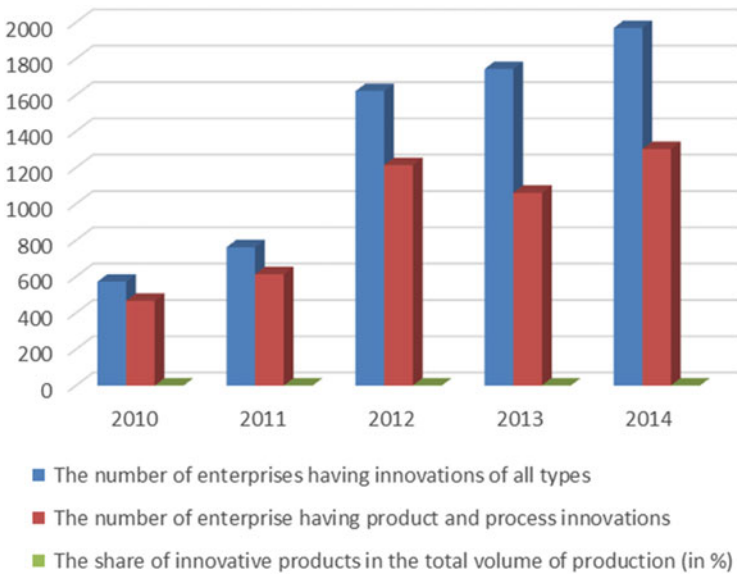


Fig. 1 Share of innovational products

The number of enterprises with product and process innovations grew by 2.8 times for 2010–2015. Innovative products were manufactured to the amount of 4 million dollars of the USA. And share of products newly implemented or significantly technologically modified was more than 91%.

3 Findings and Perspectives of Further Researches: Conclusions

Kazakhstan as an established state at a new stage of own development in terms of global challenges of the twenty-first century is needed in cardinal renewal of the driving force of development based on implementation of new massive industrialization. Neo-industrialization shall become the key content of modern industrial policy oriented at rate of growth, a scale-up of social and economic development of the country at the cost of increase of labor efficiency based on innovations.

However, the NIS of Kazakhstan still has a number of weaknesses, the main of which are the following:

- Low level of financing of science with ineffective control for the resources allocated due to the lack of coordination of industry-specific authorized and innovative organizations
- Lack of legal framework regulating relations of science, education, and manufacturing
- Low share of private sector in science development

4 Recommendations

Based on the experience of many world countries, Kazakhstan has defined the vision and plan of further actions related to innovations in the concept of innovative development up to 2020. Under this concept, it is supposed to promote generation of innovations in Kazakhstan, provide further development of leading innovative clusters, develop perspective technological directions, strengthen regional innovative systems, provide use of raw potential of the country to attract newest technologies, and create high-tech productions.

Neo-industrialization in Kazakhstan shall provide combination of own scientific and technical resources and external technology sources. In this regard, it is useful to use the experience of China, India, Brazil, and others that skillfully use possibilities provided by globalization of technological development by implementation of the strategy for regional transfer and inclusion in global technological chains (National Innovative System and State Innovative Policy of the Russian Federation 2009; Dnishev and Alzhanova 2013).

It is also necessary to create the following to solve the tasks of innovative development of the country's economy:

- System of financing that encourages real benefits from inputs and more efficient interaction between two sectors—science and real economy
- Powerful science and technological complex in scientific researches and technologies in priority areas
- Development of institutional structure

In general, formation of the NIS is a crucial stage of building a national economy which is based on acquisition and use of new knowledge. This concept combines the key elements of scientific, creative, and innovative activities of the country. Thus, the NIS enables to look at the process of building an economy of a new type systematically and, in particular, at changes of the principles of human resources management.

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Marketing Mechanisms of Overcoming the Barriers of Interaction and Cooperation of Russia and Europe

Zhanna V. Gornostaeva, Ekaterina S. Alekhina, and Yulia S. Chernysheva

Abstract The authors aim to determine the correctness of the hypothesis and study of marketing mechanisms of overcoming the barriers for interaction and cooperation of Russia and Europe. Methodology of the research includes the method of horizontal, vertical, and trend analysis, method of problem analysis, and methods of synthesis, formalization, deduction, and induction. The authors substantiate the expedience of interaction and cooperation of Russia and Europe and determine the barriers for their strengthening and development. As a result of the research, the authors have to the conclusion that a perspective method of overcoming the consequences of financial crisis in Russia and Europe is their interaction and cooperation in economic sphere, which could be a new direction of integration and a source of growth for Europe and innovations—for Russia. However, various barriers exist on the path of their strengthening and expansion, which could be overcome by marketing mechanisms and corresponding marketing model.

JEL Codes M31 • F15 • F21 • F40 • O32

1 Introduction

The recent global financial crisis showed the contour of the European economic policy. Russian economy is also damaged by the consequences of the crisis, which showed unattractiveness of the used model of “overcoming” development. This led to proclamation of the state course for modernization and building of innovational economy.

This predetermined selection of the problem of the research, which consists in determination of perspective means of overcoming consequences of the financial crisis in Russia and Europe. We offer to seek the goal of determination of

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© Springer International Publishing AG 2017

E.G. Popkova (ed.), *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management*, Contributions to Economics,
DOI 10.1007/978-3-319-60696-5_78

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correctness of this hypothesis and study of marketing mechanisms of overcoming the barriers for interaction and cooperation of Russia and Europe.

2 Theoretical, Informational and Empirical, and Methodological Grounds of the Research

Various aspects of interaction and cooperation are reflected in multiple publications of modern scholars. Thus, the work (Klepitskij 2016) emphasizes differences in anti-monopoly law that hinder unification of markets of Russia and Europe. The study (Fadeev 2015) points out differences in approaches to conduct entrepreneurial activities.

The article (Zaynutdinov 2015) views sanction barriers on the path of economic cooperation of Russia and Europe. The work (Colby and Solomon 2015) analyzes catalyzing and restraining factors of this interaction and (Engelbrekt and Nygren 2014) seeks methods of their management. At that, all authors agree that interaction and cooperation of Russia and Europe are important and necessary for their development.

Conceptual and methodological provisions of the theory of marketing are set in fundamental studies of such authors as Kennedy (2016), Choi and Williams (2016), Homburg et al. (2015), Popkova et al. (2013), etc. Applied aspects of marketing activities of market agents in the context of various economic conditions and economic systems are studied in the works of the applied character of Daukseviciute and Simkin (2016), Mishra (2016), Chiang (2016), Dzhandzhugazova et al. (2015), Kravets et al. (2014), Skiter et al. (2015), etc.

Marketing supposes management of economic (Urbaniec and Vachevskiy 2012), informational (Romanenko and Chaplay 2016), and social (Uzea and Fulton 2014) ties and relations and, therefore, presence of the following mechanisms:

- Economic marketing mechanism for balancing the interests of economic agents through the system of market stimuli (price, quality, service, etc.)
- Informational marketing mechanism which ensures interaction and exchange of information of economic agents through the system of marketing communications (collection of feedback, direct marketing, PR, etc.)
- Social marketing mechanism, within which the management of consumer preferences and consumer behavior is conducted through loyalty programs, advertising, branding, etc.

The methodology of this research includes the method of horizontal, vertical, and trend analysis; with the help of which, the authors determine the expedience of interaction and cooperation of Russia and Europe. The objects of the research are economies of Russia and the EU. Time scale: 2000–2014.

3 Results

To determine expedience of development of interaction and cooperation of Russia and Europe, let us analyze their current state and dynamics for the recent years. For that, let us use Tables 1, 2, 3, and 4.

In addition, Russia and Europe are close investment partners. According to the 2014 data, volume of investments from Russia into the economy of the EU constituted \$69.3 billion. This accounts for 58.28% of all investments of Europe. The volume of investments from the EU into Russia's economy constituted \$86.2 billion. This accounts for 81.21% of all investments of Russia (Eurostat 2016a; Rosstat 2015). Therefore, interaction and cooperation between Russia and Europe are highly expedient.

The performed problem analysis allowed determining the following main barriers for interaction and cooperation between Russia and Europe in economic sphere:

- High custom barriers, related to conduct protectionist policy and restraining mutual foreign economic operations of Russia and the EU
- Information deficit, caused by weak connections between Russia and European markets and hindering full-scale and highly effective achievement of mutual investment flows of Russia and the EU
- Differences in social institutes and consumer preferences, related to sociocultural peculiarities and hindering integration of entrepreneurial structures of Russia and Europe

For the purpose of overcoming the determined barriers, we developed the proprietary model of overcoming the barriers of interaction and cooperation of Russia and Europe, presented in Fig. 1.

Table 1 Dynamics of foreign economic cooperation of Russia and the EU in 2000–2014

Indicators	2000	2005	2009	2010	2011	2012	2013	2014
Share of the EU in Russian export (%)	56.86	62.01	59.48	58.86	56.84	57.45	56.58	53.67
Share of the EU in Russian import (%)	58.06	52.98	49.63	46.36	46.94	46.86	46.55	44.32
Share of Russia in EU's export (%)	7.54	8.23	7.89	7.81	7.54	7.62	7.51	7.12
Share of Russia in EU's import (%)	15.07	13.75	12.88	12.03	12.18	12.16	12.08	11.50

Source: Eurostat (2016b), Rosstat (2015)

Table 2 Vertical analysis of foreign trade turnover of Russia and the EU in 2000–2014

Indicators	2000	2005	2009	2010	2011	2012	2013	2014
Export from Russia into the EU (%)	20.30	24.59	32.27	31.52	33.13	33.27	33.40	32.61
Import into Russia from the EU (%)	79.70	75.41	67.73	68.48	66.87	66.73	66.60	67.39
Volume of foreign trade turnover between Russia and the EU (\$ million)	63,699.90	171,735.50	223,819.80	290,047.00	369,732.90	383,543.70	385,194.70	345,075.60

Source: Eurostat (2016b), Rosstat (2015)

Table 3 Horizontal analysis of foreign trade turnover between Russia and the EU in 2000–2014

Indicators	2005/ 2000	2009/ 2005	2010/ 2009	2011/ 2010	2012/ 2011	2013/ 2012	2014/ 2013
Export from Russia into the EU (%)	3.27	1.71	1.27	1.34	1.04	1.01	0.87
Import into Russia from the EU (%)	2.55	1.17	1.31	1.24	1.04	1.00	0.91
Volume of foreign trade turnover between Russia and the EU (%)	2.70	1.30	1.30	1.27	1.04	1.00	0.90

Source: Eurostat (2016b), Rosstat (2015)

Table 4 Trend analysis of foreign trade turnover between Russia and the EU in 2000–2014

Indicators	2005/ 2000	2009/ 2000	2010/ 2000	2011/ 2000	2012/ 2000	2013/ 2000	2014/ 2000
Export from Russia into the EU (%)	3.27	5.58	7.07	9.47	9.87	9.95	8.70
Import into Russia from the EU (%)	2.55	2.99	3.91	4.87	5.04	5.05	4.58
Volume of foreign trade turnover between Russia and the EU (%)	2.70	3.51	4.55	5.80	6.02	6.05	5.42

Source: Eurostat (2016b), Rosstat (2015)

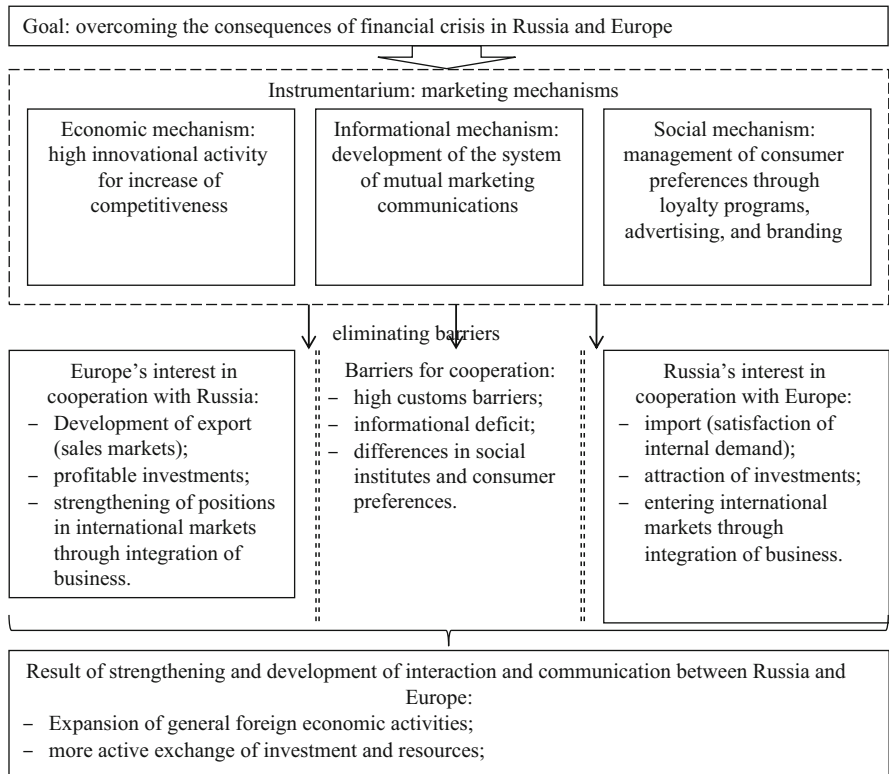


Fig. 1 Marketing model of overcoming the consequences of financial crisis in Russia and Europe through elimination of barriers for interaction and cooperation of Russia and Europe

4 Conclusions and Recommendations

Thus, the offered hypothesis is proved—interaction and cooperation between Russia and Europe in economic sphere allow them to overcome consequences of financial crisis through development of entrepreneurship and innovations. For their expansion and strengthening, the corresponding marketing model is offered, based on marketing mechanisms of overcoming the barriers for interaction and cooperation of Russia and Europe.

As a result of the performed research, it is necessary to state the fact that due to strict limitation of its volume, barriers for interaction and cooperation of Russia and Europe and marketing mechanisms of their overcoming are shown briefly, which limits the possibilities for practical application of the developed model. That's why during further research, it is necessary to reflect the sense and action of the offered mechanisms in detail.

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Experience of Moral Philosophy in Formation of Economic Theory

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Abstract The most important function of moral philosophy is substantiation of ethic foundation of human economic activities. However, philosophy, as a theoretical form of ideology, does not simply declare general moral postulates that determine economic activities but test the problem of anthropological and gnoseological preconditions of certain economic theories. These preconditions are the totality of implicit ideas of what human is. These preconditions are a basis of subject reflection of a certain theory, but they are not subject to critical reflection of economists. The purpose of the research is consideration of the role of moral philosophy in thematization of anthropological and gnoseological preconditions of economic theory. The purpose of the research is to study the significance of the theory of justice of John Rawls and, in particular, of the offered theoretical construct “just individual” as one of the possible variants of “homo economicus.”

JEL Codes B40 • B41

1 Introduction

Methodological literature of recent decades actualized the discussion of philosophical foundations of social knowledge—in its widest interpretation. These problems were further reconsidered in the literature on the methodology of economic science (Boldyrev 2011; Filatov 2003; Kizilova 2005; Avtonomov 2013, 2015; Shestakov 2015; Boumans 2005; Mäki 2009). Acknowledging heuristic results of these theoretical developments, it should be noted that contribution of moral philosophy (especially, of its modern examples) in consideration of essence and functional

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purpose of anthropological and gnoseological preconditions of economic theories wasn't given full credit. Here we speak of inspiring theoretical heritage of John Rawls, which is given in his book *A Theory of Justice* (Rawls 1995).

2 Methods

The author is guided by the fact that various types of economic analysis are based on different philosophical systems. Within these settings, the author founds on methodological ideas of J. Schumpeter, according to which economic approach has dual nature: *economic* analysis as immanent basis has explicit or implicit *philosophical and sociological* component. The work also takes into account methodological views of V.V. Leontyev, according to which pluralistic methodology, related to transition from one type of interpretation to another, possesses larger heuristic potential than orientation at any methodological platform. During consideration of theoretical constructions of the type "homo economicus," the method of "ideal types" of M. Weber was used. A peculiarity of the author's methodological instrumentarium is demarcation of *subject* and *reflexive* levels of economic research. The first level (selecting the means for achieving goals) is the object of study of social sciences, including economic theory, while the second (goals of human and metaphysical value of the latter) is the subject of philosophy.

3 Results

John Rawls, making social justice the object of thorough study, focuses on the ration of *economic* and *noneconomic* factors of social being—constituting elements of social architectonics. The author puts two basic principles in the foundation of just society, which level the individuals' rights. Firstly, it is the principle of equal freedom, ensuring "advantages for all." According to it, the situations which suppose full freedom are determined by the philosopher through three main criteria: (1) availability of free subjects of action, (2) certain limitations in the context of which these subjects are qualified as free from them, and (3) actions which could or could be not performed by individuals. The researcher emphasizes that the condition for full and adequate realization of the principle of equal freedom could be economic environment organized in the form of free market system, though private form of property for production means is not mandatory.

Another foundation for just distribution of benefits is the principle of equal accessibility. According to this principle, everything that could be a benefit for a human should be open for any member of the society. Here we speak of equal access to material benefits and open access to any offices or other social positions in society. The above principles, according to Rawls, form the ethical foundation on which any joint economic activities of humans should be based if it is to be

considered just and fair. In terms of our analysis, special attention should be paid to the philosopher's principle of difference or inequality of individuals, according to which the ideas of freedom and justice, formulated according to realia of modern society, do not suppose equal prosperity for everyone. In this regard, social inequality comes from immanent essence of the human: people are not equal as to their talents, capabilities, and skills. So the very fact of inequality does not always contradict justice: *just* forms of inequality are possible and real.

However, all the above does not exclude the fact that society should and *could be* built on the moral and just basis. Thus, a just question arises: how does the author treats such notions as justice and fairness? The author of the book founds on the idea that justice is inherent for most people. The subject of just society is moral individual qualified by the author as "subject of claims," and the capability to be moral personality is acknowledged by the philosopher as the necessary condition for realization of the ideal of equal justice in society. The above allows concluding that the viewed concept of justice, as fairness, states that if there are minimal requirements to the condition for being moral personality, such human is given maximum possible guarantees of justice.

This relates to differences within the capability to understand justice: someone's lesser capability is not an argument in favor of limitation of such person's claims for justice. Accordingly, larger capability for justice (in other words, developed skills in application of principles of justice) is considered just one of many natural talents. Obvious privileges, granted by these capabilities, fall under the above principle of difference, but they do not contradict the fundamental principle—equal freedom. The same could be said about justice as fairness: the latter guarantees the society that any characteristics within general attribute of morality should be qualified as any other natural (in this sense—random) talents. That's why, being guided by justice, members of society should understand that not all individuals can independently ensure more or less decent life. Here we speak of the handicapped and disabled, sick, and other categories of people, who cannot live decently without help. That's why it would be fair if social transfers were aimed for these categories of citizens. The scholar proves that social injustice is justified and fair only when it brings profit to the least successful members of the society. According to the above, the problem of inequality is further specified by Rawls: inequality should be related to offices and position, accessible to everyone (Rawls 1995: 103).

At that, it is impossible not to see that the analyzed theoretical construct ("private individual") in author's interpretation is not only moral but also rational. While according to its first characteristics, individual should strive for maximally effective help for the poor, the second specifies the sphere of application of the first. It is obvious that rationally organized economic activities should take into account the very fact of limitation of social resources: unlimited help can destroy the mechanism of benefits production. This means that the most capable (and, therefore, most successful) individuals stimulate the increase of the level of well-being of society on the whole (including the least successful citizens). As a consequence, the theory of just distribution of benefits should be supplemented by another principle—rational effectiveness. The philosopher interprets it in the sense that

any social configuration is effective only if it is impossible to change for the benefit of some people without harming the others (Rawls 1995: 71).

4 Discussions

Not every effective economic behavior is just. There are many examples that confirm this thesis. Serfdom in Russia is very effective for a specific group (landowners), being totally unjust due to this very reason. This part of Rawls' thinking shows that two previous principles which express requirements of social justice are built on the principle of rational effectiveness, specifying and reducing the environment of its application. The philosopher says that "the problem consists in <...> finding the concept of justice which would distinguish the effective distribution that would be also just" (Rawls 1995: 71). As we see, rationally organized economic behavior of individual is also limited by two other conditions of the theory. The viewed model of rationality may coexist with the fact of inequality, but it cannot exist with limiting principles of justice. It is the problem of just and effective distribution that the scholar tries to solve theoretically—compounding two basic principles of economic life and social structure. It may seem that it became possible due to the requirements of "formal equality of possibilities" (i.e., legal guarantees of equality) which is overlaid on the principle of effectiveness. The scholar formulates such equality of possibilities as equal and legal rights of access to all beneficial social positions (Rawls 1995: 75).

The above theoretical requirement concerns the so-called concept of natural freedom. However, it is not enough for just distribution. This concept should be expanded by means of liberal concept of justice ("requirement for careers' openness to talents," in authors' terms), which is not limited by legal guarantees of equal access but requires equal and real access to initial economic possibilities and chances. According to this concept, the people with the same resource of possibilities with the equal wish to realize it should have equal perspectives of success, regardless of their initial position in the social system. The possibilities for changes of socioeconomic position of such people and, accordingly, their social expectations should not depend on belonging to any class.

As we can see, liberal political system has to minimize the influence on final distribution of such random factors as luck and unequal starting positions in social hierarchy. Surely, neither social system can be a scheme of cooperation into which people enter voluntarily; each person finds himself in a specific position in a certain society, and the nature of this position influences his life perspectives. At that, according to Rawls, society that corresponds to the principles of justice as fairness comes close to the ideal society, based on voluntary scheme. On the whole, the principle of effectiveness could be qualified as one of the most important attributes of modern "homo economicus" which expresses the very sense of this rationality model.

5 Conclusion

Generalizing the distributive theory of Rawls, it is possible to distinguish five basic principles of just distribution of social and property benefits in society. The first two are generally recognized requirements of market economy: (1) principle of equal freedom and (2) principle of equal access. Apart from them, the philosopher introduced three more principles: (3) difference (inequality) of individuals, (4) “fairness” (as limitation of the principle of difference), and (5) rational effectiveness (as foundation of economic justice). The ideal type of economic behavior, which corresponds to the above requirements, is assigned to “just individual.” This anthropological model is the variant of “homo economicus” that is offered by the viewed concept. Inherent attributes of the above theoretical construct are *morality* and *rationality* (treated as a foundation of effectiveness). Interpreting the distribution theory, it is possible to build a pyramid of its main principles, where each following one narrows and specifies the application of the previous one. Certain actions, which are theoretically possible, for example, only within the first principle, are not allowed within the second. Thus, pyramid should be based on the principle of difference as the most important condition for social and economic justice. Then goes the principle of justice which narrows down the sphere of its application and is a guarantor of social justice. At last, the principle of rational effectiveness, being on the top of the pyramid, overlaps the previous one and eliminates a range of contradictory actions. Here we can speak of dialectical dependence of interdependence and mutual limitation of principles of this theory—similar to the ratio of effective rationality, on the one hand, and requirements of equal access and freedom, on the other hand.

It should be reminded that Rawls is not economist. His work does not contain any models or calculations that show how distribution of goods could be realized in view of the offered understanding of justice. Rawls just outlines general limits of solving the problem of combination of inequality, fairness, and justice in modern pluralistic and market society. That’s why the above approach is not only economic: the author conducts the research in the spirit of philosophic economy. In order to imagine how individuals could see the offered just society without inevitable aberrations, caused by different social positions, the author suggests a thinking experiment, which was called “veil of ignorance.” Within this experiment, all secondary and external reasons of social injustice are “put in brackets,” leaving the human in the situation of choice and agreement on the principles of justice. This initial situation of justice as fairness is equaled by the researcher to natural state of human in classical theory of social agreement—the only difference is that modern scholar does not localize this situation historically, treating it as abstract and theoretical hypothesis. As a result, idealized individual within the above theoretical operation is very moral and rational at the same time, without any reason for possible contradiction of the above characteristics. The relations between individuals in this case are rationally transparent and very simple.

It seems obvious that in any *real* society, there is larger or smaller number of privileged subjects satisfied with their position and income. They may not agree to change the existing social institutes and implement principles of justice as fairness. However, it is possible to suppose that the people who compile and sign the initial social contract that defines the future social architectonics cannot predict their status in this society—whether they will have privileged position in upper groups or stay with the lower. This hypothetical situation of uncertainty is called “veil of ignorance.” In this situation, people must accept the society, built on the principles of justice as fairness, and conclude corresponding social agreement. In a certain sense, theoretical construct “veil of ignorance” is not that far from modern social order. It could be interpreted not in the terms of thinking experiment but in the form of hyperbola which represents modern tendencies in hypertrophied form. The thing is that with modern level of social mobility which provides unpredictability of possible positions and statuses of an individual, the latter is doomed to be under a “veil of ignorance.” In this sense, his future is not guaranteed, and social status is not stable, as it was in the traditional society with its tough social limits.

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Influence of State Tax Monitoring on the Russian Federation's Economic Policy Implementation

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Abstract The paper presents a methodological approach to arranging targeted system observation of the key tax tactics and strategy implementation indicators, being among the main sources of information support for the national economic policy. The study also provides state tax monitoring parameters, affecting Russian public management efficiency. The following theoretical-practical approaches to tax monitoring in Russia reflect the research results:

1. The definition of “tax system development monitoring (or state tax monitoring, STM)” is given.
2. The STM objectives and tasks are elaborated.
3. The STM system elements are identified and their hierarchical connections and interdependences built.
4. The STM subjects are classified by the authority distribution feature.
5. The special service's (department's), arranging and conducting STM, place and role in STM are identified.
6. The main principles of STM functioning are determined with the help of algorithmic methods.
7. The system of STM statistic indicators, necessary for assessing the tax system's condition and development, is presented.

1 Introduction

The topicality of studying the Russian Federation tax system processes is connected with the direct dependence of the national economy's welfare on the modern condition, operation effectiveness, and perspective development of the tax system. Recently, Russia has faced its economic upturn, but now modern forecasts of the

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Russian Federation's socioeconomic development are gloomy and pessimistic. Besides, as Butrin (2014) points out, the Russian Federation Ministry of Finance and Ministry of Economic Development very often suggest contrary development strategies for 2014–2015. Controversies between these ministries and other state authority bodies affect the Russian economy's development quality, including the tax system development. We can observe the delayed reaction of the tax system changes as a response to the changing state economic policy or sometimes their full disparity.

The tax system is the state's essential administrative and economic tool for managing public economic and social processes. Enhancing the tax system's effective management mechanisms plays undoubtedly a significant role on the modern market economy. It is necessary to investigate, systematize, generalize, and assess the activity of certain tax system's elements in order to understand their development patterns, real opportunities, possible contradictions, and difficulties, hindering the country's economic work on elaborating its development optimal strategy and enhancing the tax system's functioning efficiency. A special system for monitoring, assessing, and forecasting the condition of the state's tax system is used in order to solve these tasks.

This research goal is to develop a conceptual approach to arranging Russia's tax system's development state monitoring in order to assess the effectiveness of achieving tax tactics and strategy target indicators.

The term "monitoring" was widely used in international documents, legislative acts, normative-methodic documents, and science literature. It is different for each specific field. It can either be considered a way on studying the reality, used in many sciences, or as a way of providing the management sphere with various activities and quality information (Ganeeva 2005).

Today, most scholars consider the specially organized and permanently functioning system of making statistic records and collecting and analyzing the received information on the condition and certain objects' changes. Some additional information-analytical studies (surveying) and assessment methods (diagnostics) can be referred to monitoring. In general, monitoring principles can be defined as theoretical imperatives, the implementation of which is to provide effective monitoring and its functions' productivity. It is worth mentioning that some interpretations of monitoring imply just observing an object's or process's changes from their conventional state.

Russian legislature doesn't have a generalized notion of monitoring. However, in particular, "monitoring" is mentioned in more than 6000 documents, adopted by Russian lawmakers on various power levels (according to the information guide "Garant").

The tax yield monitoring is carried out in the following directions: budgetary classification, economic activity, taxpayers' statuses, taxpayers' categories, and local budgets.

"Tax Yield Monitoring" Information System (FTS-65n) also allows to generate and load the data of the first (information on tax incentives, given in accordance with the Russian Federation Legislature) and the second type (information on

administrative-territorial composition) in electronic forms, in order to transmit it further to the FTS Inspection in Russian Federation region.

The analysis shows that the modern tax practice is understood as accumulating the statistical data, used for solving a very small number of tasks, which have no system features and are not used for solving task complexes.

One of the main goals of the state tax monitoring (STM) system is, in our opinion, revealing the most dangerous tendencies in the tax system’s development, based on analyzing certain characteristics indicators. The monitoring used in the tax system should be able to solve at least two tasks: firstly, investigate the real system indicators and, secondly, provide the executive authority bodies with quality information, i.e., the main monitoring application sphere is management or information support to the state bodies for the national economy’s effective management.

In our view, the development of STM is an isolated activity of public authorities for the collection, storage, and processing of statistical information describing the status and assessment of the tax system changes, as well as the analysis and forecast of its development. As the goal of STM, it is worth defining an opportunity to get comprehensive analytical information on the state the tax system required for strategic decision-making for the state’s economic development.

The main goals of the STM contact are defined as the ability to get comprehensive analytical information on the state tax system condition required for strategic decision-making of the state of the economy, including the early detection of potentially dangerous trends in the development of the tax system, based on analyzing the indicators’ certain characteristics. Monitoring, used in the tax system, may solve at least two problems: first, investigate the real activity indicators, and, secondly, to provide the executive and state power bodies with timely and quality information. So, the main area of monitoring practical application is the management or, in particular, information service to the state bodies for the national economy effective management.

In general, the implementation of main objectives of monitoring is illustrated on the diagram in Fig. 1.

The STM objects can make laws on taxes and fees. Tax administration mechanism will not be the STM objects—as a monitoring object, we suggest considering

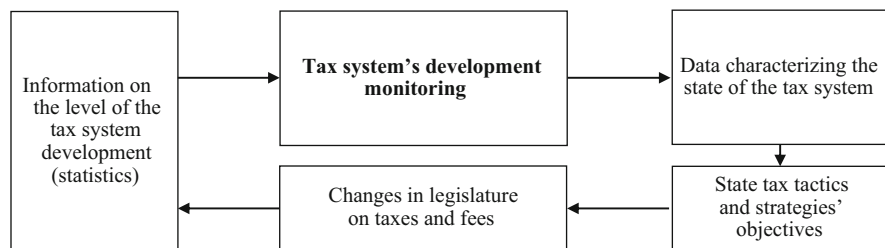


Fig. 1 Realization of the goal of monitoring of tax system’s development. Compiled by the authors

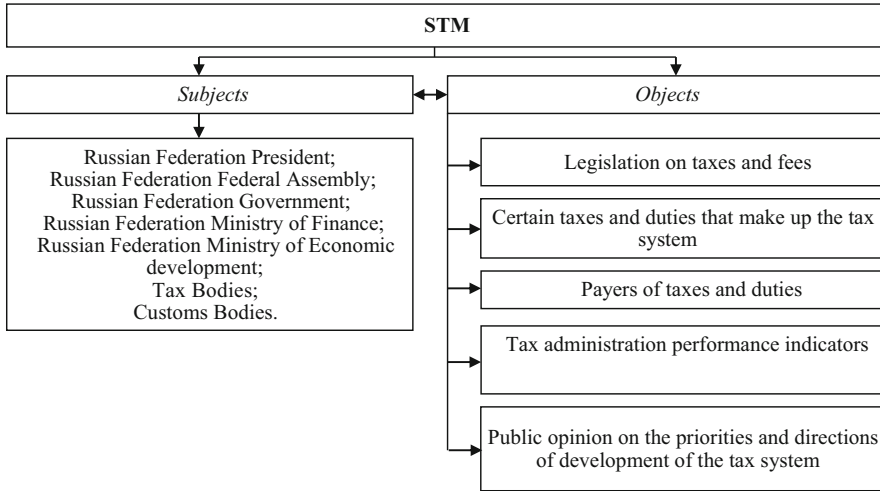


Fig. 2 Subjects and objects of state tax monitoring system. Compiled by the authors

tax administration performance indicators. In our opinion, the tax system development affects not only its members but public opinion. In this regard, we define an additional STM object, which is public opinion with regard to priorities and tax system’s sustainable development directions (Fig. 2).

The STM toolset includes a set of methods, including mathematical, statistical accountancy forms, questionnaires, checklists, and so on, used by monitoring subjects in their activity. Electronic and other technical equipment, information transmission methods used by the tax monitoring subjects, can be regarded as software and hardware platform of the STM system. The tax system development monitoring subjects should serve as public authorities, organizing and monitoring, and objects should be the tax system and public opinion elements, which are observed (Fig. 2).

We believe that the STM system subjects can be roughly classified basing on power division (see Fig. 3). All state power bodies are the subjects of the tax system development monitoring (excluding the subjects which provide information) and are included in the STM management system.

Having studied and analyzed the state authorities’ powers in the financial and tax area, we concluded that monitoring organizational functions can be performed by a special unit, which should exist within the Russian Federation Ministry of Finance (Option 1) or the Ministry of Economic Development (Option 2).

The Tax Monitoring Department shall exercise the following powers:

1. Form the state system for observing the tax system monitoring and for providing the functioning of the system.
2. Collect, make analytical processing, and form state information resources on the state of the Russian Federation tax system’s development.

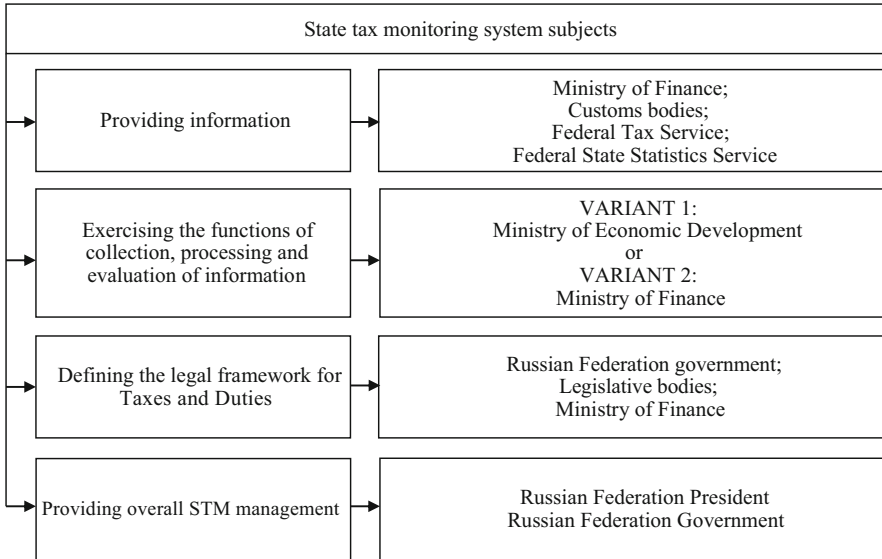


Fig. 3 Classification of state tax reporting subjects on the basis of distributing powers. Compiled by the authors

3. Interact with other divisions and departments of the Ministry of Economic Development, the Ministry of Finance, and of executive power bodies in organizing and monitoring the tax system’s development, forming and providing smooth operation of regional observation systems.
4. Create a unified information system in the established sphere.
5. Generate and maintain a federal database, as well as provide methodological unity and coordinated functioning of information systems during STM.
6. Study the international experience in the sphere of tax monitoring.
7. Involve in the work (including the contractual basis) research and other organizations, as well as individual experts, in order to examine and develop training programs and teaching materials and software and information systems and create information systems in the tax monitoring sphere, subject to keeping the state and other secrets protected by law.
8. Ensure the appropriate storage and protection of information received during the activity of the Information Department, which is the tax secret or confidential information.
9. Perform other functions in the established sphere, if such functions are provided by federal laws and normative regulatory acts of the Russian Federation President or his Government.

The STM Department within its competence organizes Russia’s tax system development monitoring and interacts with other state authorities—STM monitoring subjects (Fig. 4).

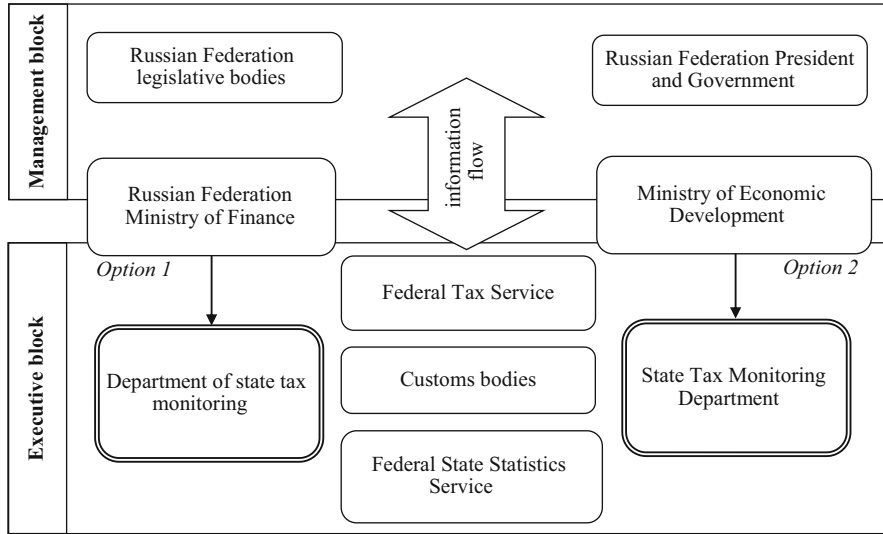


Fig. 4 Interaction of state tax system monitoring subjects. Compiled by the authors

The tax statistics uses various absolute and relative statistical indicators, summary statistics obtained by generalizing the mass data on the socioeconomic phenomena, collected in the process of statistical observation. They make possible to discover the inherent aggregates (general or individual) of these quantitative change patterns (Sherstneva 2008).

To monitor the development of the tax system is necessary to define a set of partial indicators (indicators), reflecting the state of the tax system, to accumulate their values for the analysis of the information received in dynamics in comparison with baseline, and to forecast their values. Only those indicators should be understood under the indicators that are used in the assessment of the tax system and characterized by its stability or critical situation.

We believe that the optimal list of indicators should:

- Contain a limited number of indicators
- Reflect the corresponding positions of the tax system
- Be representative—the ability to reflect fully and adequately, in space and time
- Be methodologically correct—with values, ordered in the hierarchy (e.g., “the more, the better”) indicators
- Be structurally seasoned—no strong imbalances in the quantity and quality indicators in selected positions, which can be achieved via aggregation (formation of composite indicators)

The optimal set of indicators to monitor the development of the tax system in Russia and to meet the above requirements may be considered as a system of indicators. It is necessary to establish a range of acceptable values for each

indicator, the indicator and assess compliant with actual values of the forecasted values. These figures shall be calculated annually, and calculations must be made both on the federal level and at the regional level.

Note that these figures should be viewed as a system, as they are interrelated and interdependent. The discrepancy of values of one of the indicators of its normative values system demonstrates the deviation of the tax system on its plans. In case of divergence of actual and predicted values of the indicators over the limits of tolerance, there is the need to adjust the tax laws.

AAAFFor monitoring the state of the tax system, indicators can be used, those characterizing the state and development of the Russian tax system and meeting the requirements that are presented to it. In our view, these indicators can be used in the following:

- (a) Characteristics of taxes and fees: the share of taxes in GDP, the share of each tax in the consolidated or the federal budget, tax rate levels
- (b) To characterize the tax administration performance indicators: ratio of overall efficiency
- (c) For the characteristics of payer's taxes and fees: corporate profits tax burden and tax burden on citizens

The system considered indicators which characterize the state of development of the tax system in Russia for the period of their predicted values will evaluate the effectiveness and efficiency of the Russian tax system to achieve the directions of the tax strategy and tactics. Analysis of the dynamics of these indicators should be supplemented by evaluative data on the absolute and relative tax burden, as well as other corresponding to tax planning and forecasting purposes.

2 Conclusions

Establishment of monitoring the development of tax system of Russia (STM) is overdue, as it directly affects the improvement of the national economy. For practical realization of this problem, intermediate researches that offer solutions to some local problems in this area are important. In this paper, the results of these decisions are the following:

The author's definition of "monitoring the development of the tax system (STM)"

The aims and objectives of the STM

Identification of STM system elements and building of their hierarchical relationships and dependencies

Selection of the classification features STM subjects, which led to the grouping system entities

Description of the monitoring of the control system of the tax system

The place and role in STM of special service (department), performing the functions of the organization and conducting public monitoring of state tax

Using algorithmic methods, the basic principles of the functioning of the STM

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