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J11517-001

Moroz L.I.

## KEY ASPECTS OF THE INTERACTION OF MARKETING-MANAGEMENT OF PERSONNEL IN THE ACTIVITY OF ENTERPRISES

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**INTRODUCTION.** In the market conditions of economic management the management of the activity of enterprises is based on economic independence of suppliers, producers and buyers, as well as on the equality of partners and financial and material responsibilities of the parties for the execution of economic obligations.

Marketing approach to the management of the activity of domestic enterprises requires them to form an effective marketing policy, especially in the field of sales, where there are directly combined the interests of a producer and a consumer, as well as the interests of the entire industrial and production personnel of an enterprise [1-3].

Nowadays the relation between marketing and management of industrial and commercial activity of an enterprise forms new approaches to the management of an organization, one of which is the marketing of personnel that aims at long-term providing enterprise with human resources. These resources create a strategic potential of an enterprise, by means of which there is possible the solution of specific target-oriented tasks in personnel marketing, which are considered in two aspects [4]:

- personnel as internal and external customers of an enterprise in order to optimally use personnel resources by creating maximum normal working conditions that promote its efficiency and the cultivation of every employee in partnership and loyal attitude to an enterprise;

- personnel as a special function of human resources management that is aimed at detecting and covering the needs of an enterprise for human resources.

Thus, marketing concept of personnel management is characterized by the determination of the requirements on personnel, its social requirements for professional activity and ensuring meeting these requirements and needs with the help of the means, which are more effective than the competitors' ones.

The thing that the administration of enterprises ignores the role and the place of marketing and marketing-management in the management of an enterprise is the reason for most disadvantages of its activity.

This leads to the need to establish the interrelation and interaction of the activity of marketing specialists and managers of an enterprise in order to clearly identify and evaluate each specific need of a consumer for the purpose of improving efficiency of the activity and further innovative development of an enterprise, that confirms the relevance of the article and of the issues considered in it.

**RESULTS AND DISCUSSION.** Nowadays the success in the activity of enterprises is achieved only if personnel management is a constituent part of the general development strategy of each enterprise according to marketing concept [5, 6].

Traditional marketing, which is aimed at a consumer, has the external environment as a field of application and personnel management means the impact on

employees, which act as the element of internal environment of an enterprise.

Personnel management as the function of the management of an enterprise and its industrial and commercial activity should unite, coordinate, interconnect and integrate all other functions into organic whole.

Activity on personnel management of an enterprise should include the following directions and problems:

- planning of industrial and production personnel of enterprise;
- the development of the plan of meeting the needs for personnel of an enterprise and the expenses necessary for this;
- the recruitment of personnel with the aim of creating a reserve of potential candidates for all positions of an enterprise;
- the assessment of candidates for jobs and the selection of the best candidates from the reserve, created in the course of the recruitment of personnel of an enterprise;
- the determination of wages and compensation to employees;
- the development of the structure of wages and benefits in order to attract, hire and keep the personnel;
- career guidance and adaptation of the personnel when admitting to the units of an enterprise;
- the development of the understanding of the things the enterprise expects from the personnel and what work receives the deserved appraisal;
- training of personnel according to designed programs with the purpose of its efficient production activity and promotion;
- the assessment of labor activity of personnel of an enterprise and the development of the methods of its evaluation, notifying the employees of this;
- the development of justified grounds and methods of transfer of personnel to positions of an enterprise according to their merits and responsibility.

Thus, the relationship between managers and marketing specialists of an enterprise and suppliers allow quickly and accurately estimating the cost of the order of particular goods for a particular consumer, taking into account the technological process, which is specifically designed for the execution of this order.

The receipt of additional urgent order, when at an enterprise there is already the formed and operating production system, is the example of effective relationship between managers and marketing specialists. Despite all the attractiveness of a new order for an enterprise and marketing specialists, it can lead to non-fulfillment of previously accepted orders in time and possible financial loss for an enterprise. In this case in the resolution of the issue and taking managerial decision on new orders there is involved the personnel management, which decides on the feasibility of a new development, and the existing and potential customers, the experts of the field of research and development and engineering activities, patent specialists, inventors act as the main source of new ideas.

The marketing specialist, who takes orders, may not know about the specifics of technological process and its individual operations, as well as about the specifics of materials and semi-finished products, which are necessary for the production of a

new product, but he should take an order and determine its value. The interrelation and synchronization of the activities of managers and marketing specialists with the demands of customers ensure the ability to rapidly detect the advantages of properties of the products, which were ordered. Marketing specialists make decisions on the selection of products and sales markets, but these decisions are isolated from production units, therefore the activities of both managers and marketing specialists of an enterprise requires the interaction with its planning and production units.

The task of all units of an enterprise –is to understand the needs of customers with the need to create a demand for these products. Management, production, sales and customer service must be performed in the relevant units of an enterprise, but provided that managers and marketing specialists have the appropriate knowledge throughout the chain of production and sales of products. Managers should always solve the problems of effective management and optimal combination of all management and production constituents, avoiding pointless expenses in order to profit. This requires the availability of information at all levels of an enterprise.

Nowadays the key moment in managing professional development of both managers and marketing specialists should be the organization of interrelated processes of the formation of personality with their competitive abilities, which include vocational training, education and qualified training of personnel. It should be a continuous compatible comprehensive process, which includes also advanced training of employees and further development of their career. It is possible to achieve efficient results of productive and commercial activity of enterprise only if there is a purposeful development of the ability to manage both production process and personnel of an enterprise, an objective attitude to the introduction of new methods of the activity of an enterprise, where all employees should find themselves in one team. Thus, when taking effective decision operations manager should know that in this system there is clearly implemented the operations function, that is a set of actions of processing resources, which are obtained from external environment, that was promoted by the activity of marketing specialists and logistics specialists and the final function - receiving products and providing services to customers in external environment, the field where there are involved the marketing specialists again. They carry out an analysis of the external environment of an enterprise that requires careful tracking of the processes, which take place there, as well as the assessment of factors and establishing links between them both at the beginning of the production process and while selling products.

Traditional production units spend little time on the interaction, for example with plan and economic department or with construction department, which is responsible for the creation of new samples of goods for consumers [7]. Therefore, in the current economic conditions the task of all personnel and enterprise units –is to understand customer needs and to produce only the products that are in the demand of consumers–thus, there is created the environment of an enterprise, in which new ideas and new products become the constituent parts, that create a positive image of an enterprise for the customers.

At the present stage of the development of market relations doing business and entrepreneurial activity only on the basis of personal relations of the administration

and its own experience should remain in the past. Marketing research is a communication channel of enterprises for the communication with their external environment. They are intended to help marketing specialists and managers in their joint activity, which is connected with planning, solving specific or periodic problems of the management as well as with the control of all industrial and commercial activities.

The administration also makes a decision on the role of marketing in enterprise management system.

If marketing is the concept of management, then the part of its essentially important managerial functions is delegated to marketing service that takes such decisions: determination of marketing purposes, selection of target markets, development of marketing complex, control of marketing activity.

The main tool of influence of the chief of an enterprise and his marketing service on the target market is specifically defined marketing complex and the organization of interaction of all employees of an enterprise. Well-operating enterprise has clear and simple structures but any organization can become unmanageable if it consists of conflicting units. Therefore the chief should be ware of both the inflexibility of structures and their complexity. Good chiefs give their subordinates enough autonomy so that they can more fully reveal their talent. But autonomy will not lead to anarchy if it is combined with sufficient control on the part of the administration. The impact on decision making model by the agent of management, namely a chief of an enterprise, which delegates basic managerial principles to his subordinates with further look at himself and his actions from some distance away is considered by reflexive management [8].

Reflexive interaction between the chief and employees occurs through the reflection in the mind of each other [9]:

- in the chief's mind- of himself, that is the way his own actions and goals are formed and ideas of his inner potential;
- in the chief's mind - of the actions and inner potential of employees;
- in the employees' mind - of the demands of the chief and his actions;
- in the employees' mind - of their own actions and themselves.

The formation of the model of reflexive management of an enterprise requires the selection of the most efficient reflexive qualitative features of a chief that will allow improving managerial decision making process. They, first of all, should include professional and psychological abilities of a chief [10-12].

One of the features of a professional chief is the ability to focus attention and interests of employees on the goals of an enterprise. It is necessary to give a lead in cultivating devotion so that people identify themselves with an enterprise. This facilitates the management of common industrial and commercial activities of an enterprise.

The administration and marketing service should manage marketing researches, assortment policy, introduction of new products, sales, advertising and service for today and in the future goods and services of an enterprise to be purchased at prices that ensure not only the cost recovery but also the opportunities for further normal development of an enterprise.

Thus, reflexive management of marketing means:

- correctly assigned, by the administration, task of marketing, in order to optimally link opportunities of market situation with scientific and production, sales and service potential of an enterprise;
- the administration, taking into account its experience, should properly assess the condition of market and of an enterprise, effective methods of calculation, accurate forecast of trends of the development of marketing environment;
- to properly plan all the activities of marketing and to effectively organize them in order to achieve the specified purposes;
- to develop the most optimal system of marketing that provides a full consumer's satisfaction and an achievement of the goals of an enterprise;
- to effectively control, analyze and evaluate all marketing activity of an enterprise, constantly adjusting its goals, means and methods;
- to timely carry out operations intervention in the course of marketing processes due to changing circumstances and situations;
- to stimulate an efficient work of the entire personnel, involved in marketing, in order to receive maximum efficiency;
- to provide marketing specialists and managers with objective and comprehensive information on external and internal marketing environments of an enterprise.

**CONCLUSIONS.** In modern conditions of economic management the marketing-management of personnel of enterprises should have the decisive role in the conscious, purposeful influence on their industrial and commercial activity, as well as on managerial decision making, organizing and monitoring their implementation.

Therefore the solution of both operations and strategic tasks of the activity of enterprise, demands a precise organization of conducting all kinds of works, which include both socio-psychological and economic analysis and planning of activities of individual units and an enterprise as a whole, using all sources of information as well as the aspects of marketing and reflexive management, from its personnel.

Currently in production and commercial activity of an enterprise an essential place is given to managerial (or internal) accounting, which includes the identification, collection, registration, generalization, analysis and transfer to internal users of the information which is necessary for enterprise management and the adoption of effective managerial decisions on the basis of marketing.

Nowadays production and commercial activity of enterprises deal with the necessity to meet consumer needs, so the task of managers and marketing specialists of an enterprise is to clearly identify, to study in details and to assess each specific need of a customer.

Thus, the effectiveness of the results of joint activity of marketing-management of personnel of an enterprise, first of all, is determined by clearly established marketing strategy, which is characterized by volume, completeness, accuracy, relevance, timeliness, substantiveness and accessibility of information for its perception, and the interaction between managers and marketing specialists of an

enterprise serves as the means of substantiation and taking managerial decisions, on which there is dependent the probability of the thing whether there will be adopted the optimal variant of marketing decision on the purchase or sale of products of an enterprise and its further innovation development.

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**J11517-002**

**Pakhomov A.V., Pakhomova E.A., Porkhovnyuk O.N.**  
**THE MANAGEMENT STRATEGY ASSESSMENT OF AN**  
**INVESTMENT PORTFOLIO OF SOVEREIGN FUND**

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*Introduction.* Sovereign funds are a rather new element of world financial architecture, an important component of a public sector of the world economy.

Sovereign funds as participants of the world financial market can become the main driving force of the international investments financed by gold and foreign exchange reserves, the state budgets or the export income.

Formation, placement and expenditure of means of sovereign funds make impact on an external and internal balance of the national economy. The accounting of macroeconomic factors allows the state to use sovereign funds as an instrument of regulation of economy, an increase of stability of rate of national currency and stabilization of social and economic development of the country in general.

The Reserve fund and National welfare fund of Russia can make an important competitive advantage. In order to make Russia overcome the consequences of a global financial and economic crisis and further successfully develop it is necessary to invest rationally and effectively the means of the Russian sovereign funds of welfare in the next years.

At this stage it is impossible to analyze the strategy of management of an investment portfolio of sovereign funds of Russia (the index of transparency of data on disclosure of information of Russia makes five points from ten).

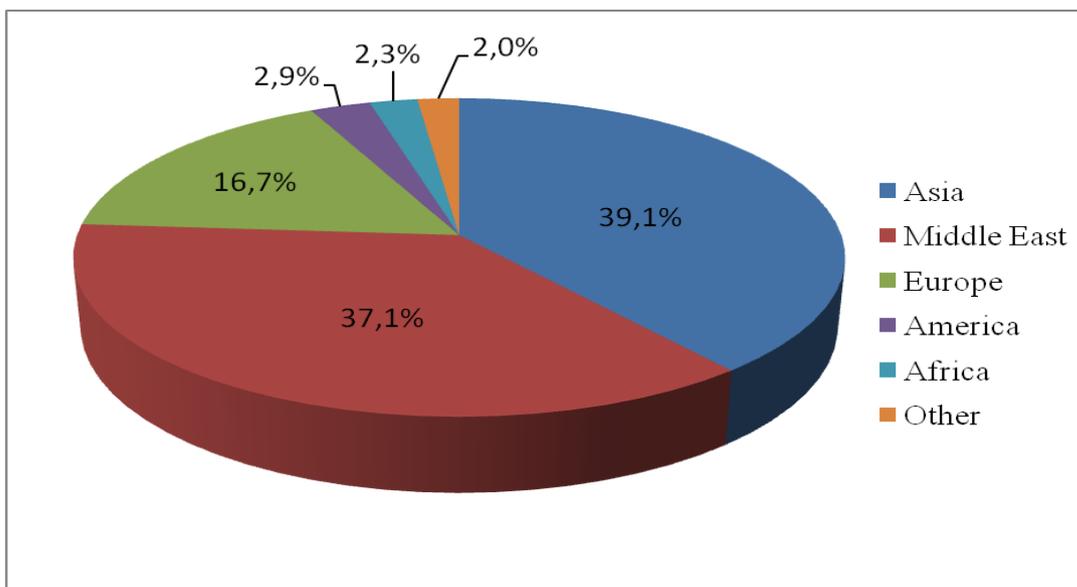
Therefore studying of the best practices of work of world sovereign funds is crucial.

In this work the assessment of the strategy of management of an investment portfolio of a sovereign fund (on the example of the State Global Pension fund of Norway, further – GPFN «Global») for the purpose of definition of opportunities of its adapted use in modern Russian conditions is given.

*1. The general characteristic of sovereign funds*

Sovereign funds of welfare started being created in the 1950s. In 2000-2007 the high prices of raw material resources and a significant growth in positive balance of trade balance of some countries promoted an increase in the number of sovereign funds of welfare and volume of the means which are saved up in them. By the end of the 90th sovereign funds of welfare existed at least in 15 countries or certain regions of the states. At the beginning of 2009 the number of funds exceeded 30 [4]. On January 14, 2015 the list of the countries which have sovereign funds of welfare increased up to 75.

The geographical distribution of the data of funds is presented in fig.1 [7].



**Fig. 1 Geographical distribution of sovereign funds of welfare**

In 2008 the total volume of the resources which were saved up in all sovereign funds of welfare made from 2,5 to 3,5 trillion US dollars. By the present moment the total volume of the means exceeds 7 trillion US dollars.

Thus, the forecast of the analyst of Morgan Stanley Investment Bank Stephen Jena practically comes true. According to this forecast the total volume of the assets which are saved up in all sovereign funds of welfare can increase from 2,6 trillion US dollars in 2008 up to 9,7 trillion US dollars in 2015. By the end of 2014 the saved-up assets exceeded the total volume of the world gold and foreign exchange reserves – 7,9 trillion US dollars [6].

Sovereign funds play a significant role in the world financial system. The cumulative size of assets exceeds the volume of means under control of all hedge funds and exchange funds. The essential equity in assets of data of structures is made by "sovereign money", therefore position in world stock markets depends on effective management of sovereign funds.

The list of 15 countries which have the largest sovereign funds of welfare is given below (tab. 1) [7].

**Table № 1**

**Countries that have the largest sovereign funds of welfare (at the beginning of December, 2014)**

№	Countries and regions	Fund Name	Assets (bln. dollars of the USA)
1	Norway	GPFN «Global»	893
2	The UAE – Abu Dhabi	Investment Authority Abu Dhabi	773
3	Saudi Arabia	SAMA Foreign Holdings	757,2
4	China	China Investment Corporation	652,7

5	China	SAFE Investment Company	567,9
6	Kuwait	Kuwait Investment Authority	548
7	China (Hong Kong)	Hong Kong Monetary Authority Investment Portfolio	400,2
8	Singapore	Government of Singapore Investment Corporation	320
9	Qatar	Qatar Investment Authority	256
10	China	National Social Security Fund	201,6
11	Singapore	Temasek Holdings	177
12	Australia	Australian Future Fund	95
13	The UAE – Abu Dhabi	Abu Dhabi Investment Council	90
14	Russia	Reserve Fund	88,9
15	Russia	National Welfare Fund	79,9

Over the last 5 years many countries kept the leading positions in the list of the largest sovereign funds of welfare. Such regions as China, Abu Dhabi and Saudi Arabia strongly strengthened the positions. The index of transparency of these regions on disclosure of information on a ten-mark scale is approximately from 4 to 6 points.

In comparison with 2009 Russia went down from the sixth place of the rating to the fifteenth place, thereby finishing the list of the largest funds. The index of transparency remains at the level of five points.

On the first place in the rating there is Norway. The index of transparency of this country reaches the maximum point.

In this work for the analysis of GPFN "Global" is chosen not only because Norway is on the first place in the list of the largest sovereign funds but also because GPFN "Global" and sovereign funds of Russia possess some similarity. The main sources of formation of the data of funds is the oil and gas income of the budget [1–3].

## 2. General characteristic of GPFN «Global»

The GPFN «Global» was set up in 1990. Despite its name, the fund has no formal pension liabilities. No political decision has been made as to when the fund may be used to cover future pension costs, and the probability of large withdrawals from the fund is limited [10]. This makes the fund truly long-term.

GPFN «Global», as well as the majority of other sovereign funds, allows to maintain a balance of public finances even in adverse conditions when due to the reduction of prices the income is reduced by fuel, and expenses increase due to the deterioration of the population age structure or an increase in unemployment. These means can also be used for the solution of economic problems which can arise in the future because of ageing of the population.

The fund is an integrated part of the government's annual budget. Its capital inflow consists of all government petroleum revenue, net financial transactions related to petroleum activities, net of what is spent to balance the state's non-oil budget deficit.

This means the fund is fully integrated with the state budget and that net allocations to the fund reflect the total budget surplus, including petroleum revenue.

Fiscal policy is based on the guideline that over time the structural, non-oil budget deficit shall correspond to the real return on the fund, estimated at 4 percent. The amount of contributions to fund is defined annually in the course of the adoption of the budget by the parliament. In the long-term period assets are used for financing of social expenses of the state when the population ageing takes place [10].

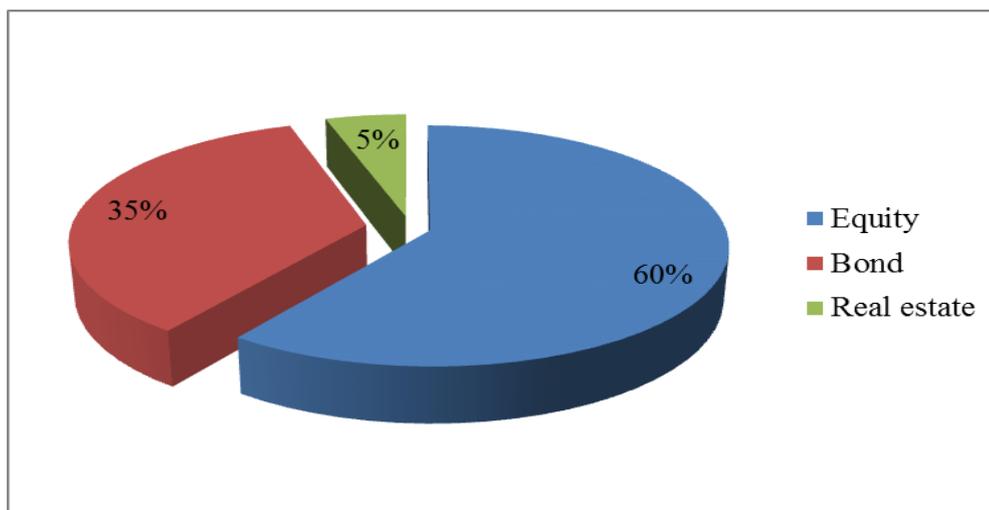
The Ministry of Finance is responsible for management of GPFN «Global» (actually they are operated by the Central bank of Norway), however it can't be disposed of its means without the decision of the Norwegian parliament.

The ministry regularly transfers petroleum revenue to the fund. The capital is invested abroad, to avoid overheating the Norwegian economy and to shield it from the effects of oil price fluctuations. The fund invests in international equity and fixed-income markets and real estate. The aim is to have a diversified investment mix that will give the highest possible risk-adjusted return within the guidelines set by the ministry.

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Management of such a portfolio means art to dispose a set of different types of securities that they not only kept the cost, but also brought in the constant income which doesn't depend on any risks. The strategic distribution of assets in an investment portfolio of GPFN «Global» is presented in fig. 2. The restrictions set by the Ministry of Finance on assets on September 30, 2014 [8]:

- equity: 50–70% of the market value of the fund,
- real estate: 0–5% of the market value of fund.



**Fig. 2 An Investment portfolio of GPFN «Global»**

The actual distribution of assets in GPFN «Global» is presented in tab. 2. As it was mentioned earlier, GPFN «Global» is on the first place in a rating of the largest sovereign funds of the world that testifies its productive management (tab. 2) [9].

**Table № 2.**

**The data from the current appointment of ministers in fund on 30.09.14.**

Asset Class	Strategic Benchmark	Actual Benchmark
Fixed Income	38,7	37,6
Equity	60	61,1
Real estate	1,3	1,3
Total	100	100

We will apply the classical theory by G. Markovits [5] describing the process of formation of an optimum investment portfolio to check a correctness of the used strategy of management of the portfolio of GPFN «Global».

3. *The application of the model by G. Markovits to an investment portfolio of the Pension fund of Norway*

Initial data for this task:

$$\text{class of assets: } A = \{a_1, a_2, \dots, a_n\}, \tag{1}$$

$$\text{vector of average (mathematical expectation) profitabilities: } m = m_1, m_2, \dots, m_n, \tag{2}$$

$$\text{the covariance matrix: } C = (c_{ij})_{i,j=1}^n, c_{ij} = cov(R_i, R_j). \tag{3}$$

The vector  $m$  and matrix  $C$  represent estimation of the market by the investor.

The purpose of the investor is the choice of an optimum portfolio from class assets  $A$ . Let  $\pi$  – the portfolio uniting two or more valuable papers or an asset. The portfolio  $\pi$  can be presented in the form of a  $n$ -dimensional vector  $x = (x_1, \dots, x_n)$  or a vector of scales, in which component  $x_i$  – "the relative weight" of an asset or a equity

of the seed capital invested in an asset  $a_1$ .

The criteria of a choice of an optimum portfolio correspond to the characteristics of assets. The investor uses two criteria:

1) average profitability of a portfolio:

$$E_{\pi} = E[R_{\pi}] = \sum_{i=1}^n m_i \times x_i = (m, x), \tag{4}$$

where  $R_{\pi}$  – the realized profitability of a portfolio:

$$R_{\pi} = x_1 \times R_1 + x_2 \times R_2 + \dots + x_n \times R_n, \tag{5}$$

$R_1, R_2, \dots, R_n$  – the realized relative profitability for assets  $a_1, a_2, \dots, a_n$ ,

2) the risk of a portfolio is defined as dispersion:

$$V_{\pi}[R_{\pi}] = \sum_{i,j=1}^n x_i \times x_j \times cov(R_i, R_j). \tag{6}$$

G. Markovits's model considers as the admissible ones only portfolios with non-negative components:

We use the statistical data on profitability of a portfolio of GPFN «Global» for

$$x_i \geq 0, i = 1, 2, \dots, n. \tag{7}$$

September 30, 2014 [11].

We will calculate the expected profitability of portfolios (tab. 3-5). In G. Markovits's model the expected profitability pays off as the mathematical expectation of relative profitabilities calculated on selection of the actual data for the last 15 years (1999-2013). For a portfolio of Real Estate we will make calculation for the last three years (proceeding from limitation of data).

**Table № 3**

**Calculation of the expected profitability of a portfolio of actions (E)**

Year	Profitability of a portfolio, %
1999	34,81
2000	-5,82
2001	-14,6
2002	-24,39
2003	22,84
2004	13
2005	22,49
2006	17,04
2007	6,82
2008	-40,71
2009	34,27
2010	13,34

2011	-8,84
2012	18,06
2013	26,28
the expected profitability	7,64
dispersion	454,42
deviation	21,31

**Table № 4****Calculation of the expected profitability of a portfolio of bonds (*F*)**

Year	Profitability of a portfolio, %
1999	-0,99
2000	8,41
2001	5,04
2002	9,9
2003	5,26
2004	6,1
2005	3,82
2006	1,93
2007	2,96
2008	-0,54
2009	12,49
2010	4,11
2011	7,03
2012	6,68
2013	0,1
the expected profitability	4,82
dispersion	13,72
deviation	3,7

**Table № 5****Calculation of the expected profitability of a portfolio of real estate (*R*)**

Year	Profitability of a portfolio, %
2011	-4,37

2012	5,77
2013	11,79
the expected profitability	4,4
dispersion	44,46
deviation	6,66

We receive a vector of the expected profitabilities:

$$m = \{m_1, m_2, m_3\} = \{7,64; 4,82; 4,40\}. \tag{8}$$

We will calculate a matrix of covariances proceeding from the statistical the data. For calculation of values  $cov(E, F)$ , a dispersion in a square  $(E, E)$  and  $(F, F)$  we use data for 15 years, for values  $cov(E, R)$ ,  $cov(F, R)$  and dispersions in a square  $(R, R)$  we use the data only for the last three years (proceeding from limitation of the data).

$$C = \begin{pmatrix} C_{11} & C_{12} & C_{13} \\ C_{21} & C_{22} & C_{23} \\ C_{31} & C_{32} & C_{33} \end{pmatrix} = \begin{pmatrix} 454,42 & -3,09 & 98,87 \\ -3,09 & 13,72 & -17,2 \\ 98,87 & -17,24 & 44,46 \end{pmatrix} \tag{9}$$

In our case the market consists of three assets:

$$A = \{E, F, R\} \tag{10}$$

where  $E$  – Equity,  $F$  – Fixed Income,  $R$  – Real Estat.

Each portfolio is described by a vector

$$x = (x_1, x_2, x_3), \tag{11}$$

meeting a condition

$$x_1 + x_2 + x_3 = 1. \tag{12}$$

And,  $x_1, x_2, x_3$  – nonnegative.

Let  $\pi_1, \pi_2, \pi_3$  – individual portfolios, which a composed only of assets of the same species ( $\pi_1$  consists of asset  $E$ ,  $\pi_2$  consists of asset  $F$ ,  $\pi_3$  consists of asset  $R$ ). They correspond to unit vectors:  $a_1 = (1, 0, 0)$ ,  $a_2 = (0, 1, 0)$ ,  $a_3 = (0, 0, 1)$ .

$Q_1, Q_2$  and  $Q_3$  – estimates of these portfolios on the criteria plane  $(E, V)$ .

where,  $V$  – portfolio risk, a  $E$  – profitability.

The class of all portfolios from three assets in G. Markovits's model geometrically represents a two-dimensional simplex  $\Delta_3$  in space  $R^3$ . In other words, it is an equilateral triangle in space with tops in single points of axes.

Segments  $a_1a_2, a_1a_3, a_2a_3$  on the criterial plane  $(EV)$  will be arcs of parabolas  $Q_1Q_2, Q_1Q_3, Q_2Q_3$ .

Segment  $a_1a_2$  is defined parametrically as  $(t, 1-t, 0)$ , where  $0 \leq t \leq 1$

Segment  $a_1a_3$  is defined parametrically as  $(t, 0, 1-t)$ , where  $0 \leq t \leq 1$

Segment  $a_2a_3$  is defined parametrically as  $(0, t, 1-t)$ , where  $0 \leq t \leq 1$

Get formulas for arcs of parabolas  $Q_1Q_2, Q_1Q_3, Q_2Q_3$ .

Arc these parabolas will pass through the point:

$Q_1 = (7,64;454,42)$  (Assessment of the portfolio in one asset  $E$ );

$Q_2 = (4,82;13,72)$  (Assessment of the portfolio in one asset  $F$ );

$Q_3 = (4,40;44,47)$  (Assessment of the portfolio in one asset  $R$ ).

The formula for arc  $Q_1Q_2$ :

$$\begin{cases} V_t = c_{11} \times t^2 + 2 \times c_{12} t \times (1-t) + c_{22} \times (1-t) \times (1-t), \\ E_t = m_1 \times t + m_2 \times (1-t). \end{cases} \quad (13)$$

where  $0 \leq t \leq 1$ .

Substituting the original data (from the covariance matrix), we obtain:

$$\begin{cases} V_t = 454,42 \times t^2 + 2 \times (-3,09) \times t \times (1-t) + 98,87 \times (1-t) \\ E_t = 7,64 \times t + 4,82 \times (1-t). \end{cases} \quad (14)$$

Substituting the original data (from the covariance matrix), we obtain:

$$\begin{cases} V_t = 474,32 \times t^2 - 33,62 \times t + 13,72, \\ E_t = 2,82 \times t + 4,82. \end{cases} \quad (15)$$

The formula for arc  $Q_1Q_3$ :

$$\begin{cases} V_t = c_{11} \times t^2 + 2 \times c_{13} t \times (1-t) + c_{33} \times (1-t) \times (1-t), \\ E_t = m_1 \times t + m_3 \times (1-t) \end{cases} \quad (16)$$

where  $0 \leq t \leq 1$ .

Substituting the original data (from the covariance matrix), we obtain:

$$\begin{cases} V_t = 454,42 \times t^2 + 2 \times 98,87 \times t \times (1-t) + 44,46 \times (1-t)^2, \\ E_t = 7,64 \times t + 4,40 \times (1-t). \end{cases} \quad (17)$$

Simplifying the expression, we get:

$$\begin{cases} V_t = 301,15 \times t^2 - 108,97 \times t + 44,46, \\ E_t = 3,24 \times t + 4,40. \end{cases} \quad (18)$$

The formula for arc  $Q_2Q_3$ :

$$\begin{cases} V_t = c_{22} \times t^2 + 2 \times c_{23} \times t \times (1-t) + c_{33} \times (1-t) \times (1-t) \\ E_t = m_2 \times t + m_3 \times (1-t). \end{cases} \quad (19)$$

where  $0 \leq t \leq 1$ .

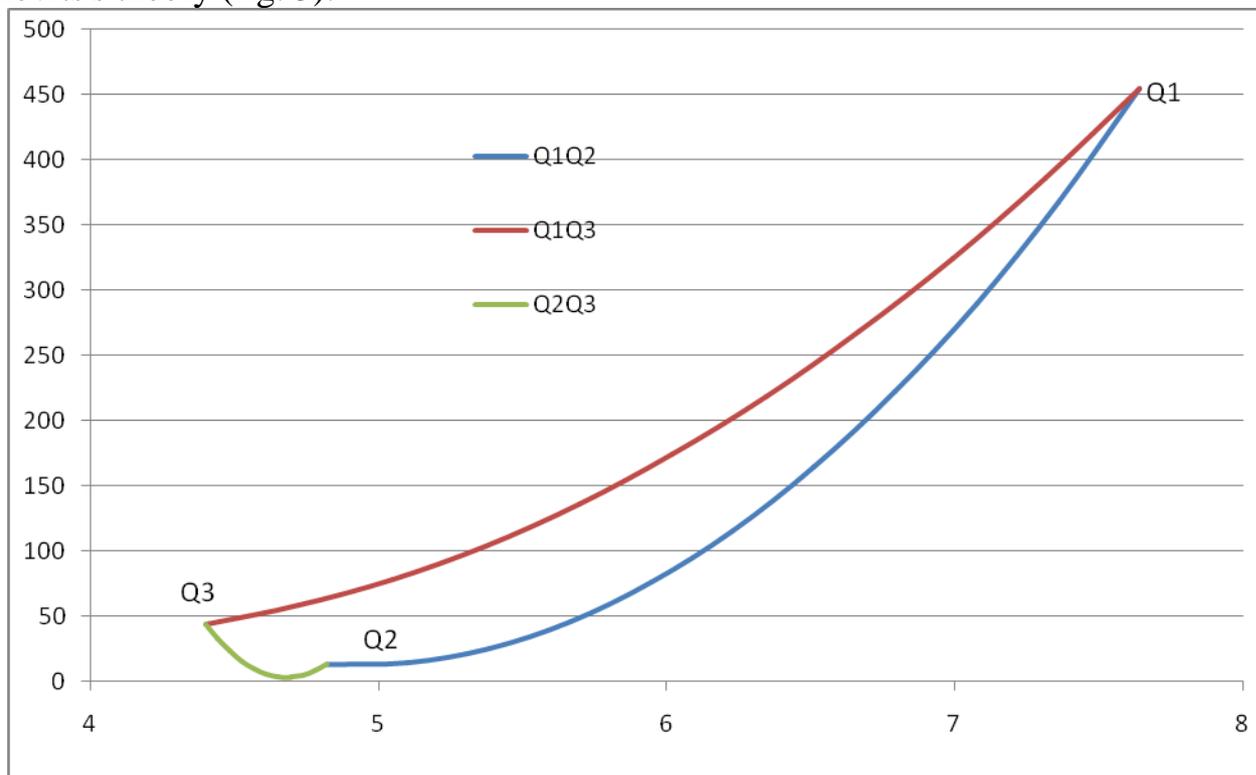
Substituting the original data (from the covariance matrix), we obtain:

$$\begin{cases} V_t = 13,72 \times t^2 + 2 \times (-17,24) \times t \times (1-t) + 44,46 \times (1-t)^2 \\ E_t = 4,82 \times t + 4,40 \times (1-t). \end{cases} \quad (20)$$

Simplifying the expression, we get:

$$\begin{cases} V_t = 92,66 \times t^2 - 123,41 \times t + 44,46, \\ E_t = 0,42 \times t + 4,40. \end{cases} \quad (21)$$

The results of the calculations which are caused on the criteria plane testify that the right lower bound of the schedule isn't convex that won't be coordinated with G. Markovits's theory (fig. 3).



**Fig. 3 Estimation of portfolios on the criteria plane (E,V)**

For receiving a convex border of estimates on the criteria plane it is necessary to find minimum on arc of  $Q_1Q_3$ ,  $Q_1Q_2$  and to connect their piece of an arc which will be an assessment of linear combinations of portfolios, to the corresponding minimum on arcs  $Q_2Q_3$  and  $Q_1Q_2$ .

$$V_t = t^2 \times (c_{22}^{-2} \times c_{23} + c_{33}) + 2 \times t \times (c_{23} - c_{33}) + c_{33}. \quad (22)$$

$$V'_t = 2 \times t \times (c_{22}^{-2} \times c_{23} + c_{33}) + 2 \times c_{23} - 2 \times c_{33}. \quad (23)$$

For this purpose we will make the following: we will find an assessment  $Q_1^*$  with the lowest risk on the arc  $Q_2Q_3$  (the lowest point is graphical), we will find an assessment  $Q_2^*$  with the lowest risk on the arc  $Q_1Q_2$  (the lowest point is graphically). We will carry out the search  $Q_1^*$ . function minimum for what it is necessary to differentiate equality:

We will find  $t_1^*$ , at which  $V'_t = 0$ :

$$2 \times t_1^* \times (c_{22}^{-2} \times c_{23} + c_{33}) + 2 \times c_{23} - 2 \times c_{33} = 0. \quad (24)$$

$$t_1^* = \frac{C_{33} - C_{23}}{C_{22}^{-2} \times C_{23} + C_{33}}. \quad (25)$$

We substitute values:

$$t_1^* = \frac{44,46 - 17,24}{13,72 - 2 \times (-17,24) + 44,46} = 0,665, \quad (26)$$

To this value of parameter  $t_1^*$  there corresponds the portfolio:

$$\pi_1^* = (\pi_{11}^*; \pi_{12}^*; \pi_{13}^*) = (0; 0,665; 0,334). \quad (27)$$

We substitute values  $t_1^*$  in a formula for finding  $Q_1^*$ :

$$Q_1^* = (3,377; 4,678). \quad (28)$$

We will carry out the search  $Q_2^*$  similar to the search  $Q_1^*$ , for what we will find a function minimum, having differentiated equality:

$$V_t = t^2 \times (c_{11}^{-2} \times c_{12} + c_{22}) + 2 \times t \times (c_{12} - c_{22}) + c_{22}, \quad (29)$$

$$V_t' = 2 \times t \times (c_{11}^{-2} \times c_{12} + c_{22}) + 2 \times c_{12} - 2 \times c_{22}, \quad (30)$$

$$t_2^* = \frac{C_{22} - C_{12}}{C_{11} - 2 \times C_{12} + C_{22}}, \quad (31)$$

We substitute values:

$$t_2^* = \frac{13,72 - 3,09}{454,42 - 2 \times (-3,09) + 13,72} = 0,035. \quad (32)$$

To this value of parameter  $t_2^*$  there corresponds the portfolio:

$$\pi_1^* = (\pi_{11}^*; \pi_{12}^*; \pi_{13}^*) = (0,035; 0,945; 0). \quad (33)$$

We substitute values  $t_2^*$  in a formula for finding  $Q_2^*$ :

$$Q_2^* = (13,125; 4,919). \quad (34)$$

Calculate the arc  $Q_1^*Q_2^*$ . We will construct a linear combination of the portfolios  $\pi_1^*$  and  $\pi_2^*$ . The segment  $\pi_1^*\pi_2^*$  is defined parametrically:

where  $0 \leq t \leq 1$ .

$$t \times \pi_1^* + (1-t) \times \pi_2^*, \quad (35)$$

In the vector entry, this segment will look as:

$$x_1 = t \times \pi_{11}^* + (1-t) \times \pi_{21}^* = (1-t) \times \pi_{21}^*, \quad (36)$$

$$x_2 = t \times \pi_{12}^* + (1-t) \times \pi_{22}^*, \quad (37)$$

$$x_3 = t \times \pi_{13}^* + (1-t) \times \pi_{23}^* = t \times \pi_{13}^*, \quad (38)$$

where  $0 \leq t \leq 1$ .

Now we will construct a score for the segment  $\pi_1^*\pi_2^*$  as a function of parameter  $t$ :

$$E_t = m_1 \times x_1 + m_2 \times x_2 + m_3 \times x_3 = m_1 \times (1-t) \times \pi_{21}^* + m_2 \times (t \times \pi_{12}^* + (1-t) \times \pi_{22}^*) + m_3 \times t \times \pi_{13}^* \tag{39}$$

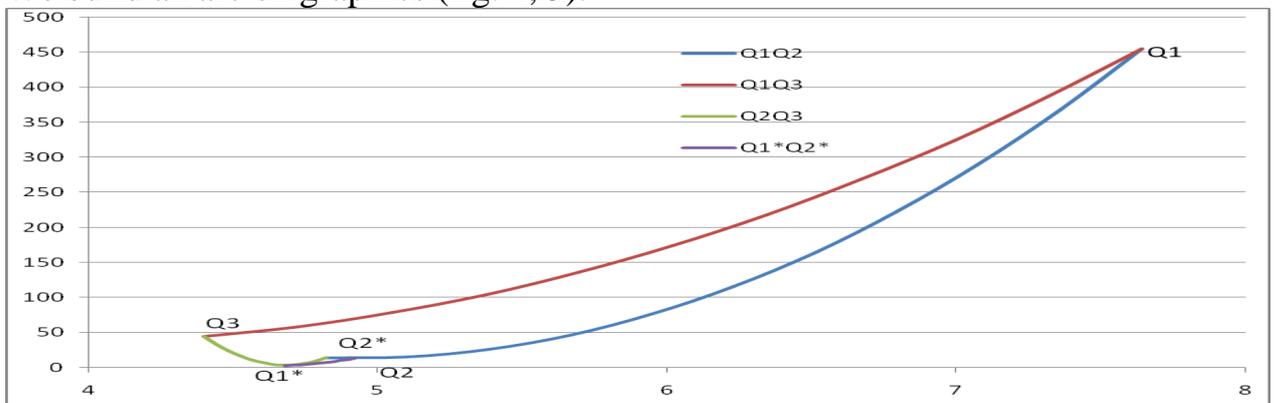
Get the formula for  $V_t$ :

$$V_t = c_{11} \times ((1-t) \times \pi_{21}^*)^2 + c_{22} \times (t \times \pi_{12}^* + (1-t) \times \pi_{22}^*)^2 + c_{33} \times (t \times \pi_{13}^*)^2 + 2 \times c_{12} \times (1-t) \times \pi_{21}^* \times (t \times \pi_{12}^* + (1-t) \times \pi_{22}^*) + 2 \times c_{13} \times (1-t) \times \pi_{21}^* \times t \times \pi_{13}^* + 2 \times c_{23} \times (t \times \pi_{12}^* + (1-t) \times \pi_{22}^*) \times t \times \pi_{13}^* \tag{40}$$

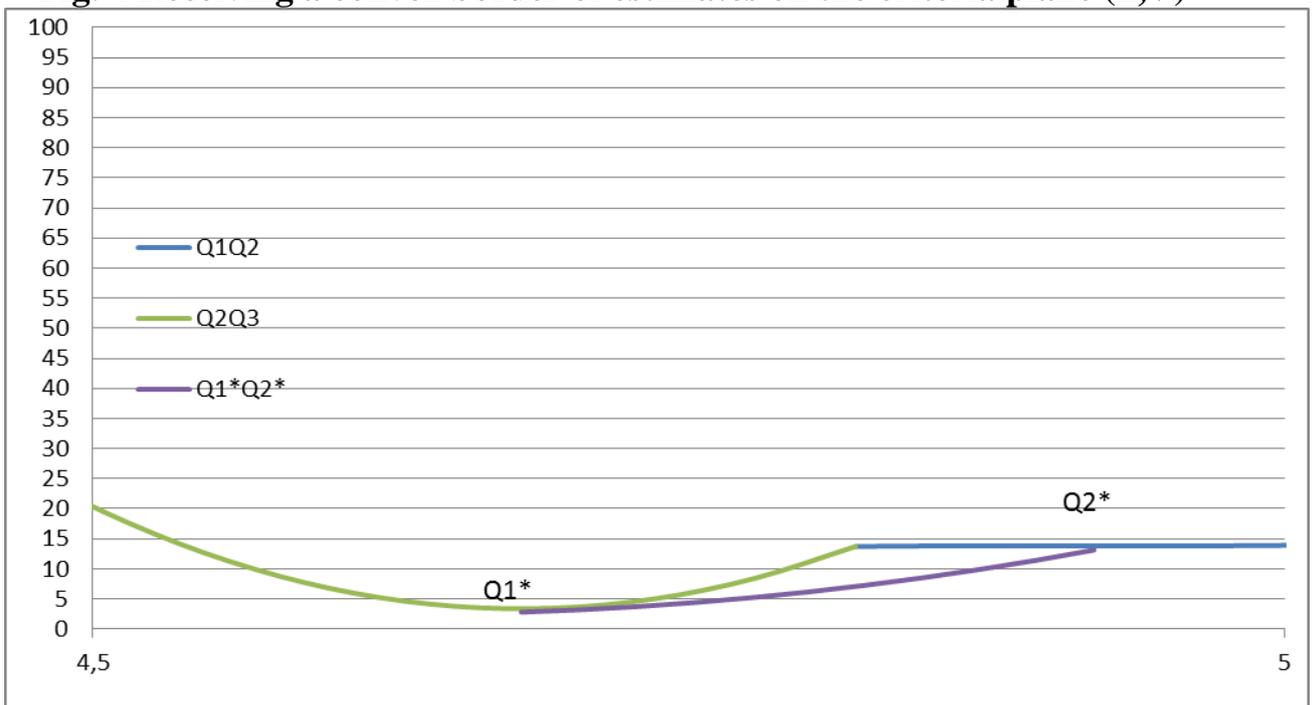
Simplify the expression:

$$\begin{cases} V_t = 7,22t^2 - 17,53t + 13,12 \\ E_t = -0,24t + 4,92 \end{cases} \tag{41}$$

We build an arc on graphics (fig. 4, 5).



**Fig. 4 Receiving a convex border of estimates on the criteria plane (E, V)**



**Fig. 5 The increased schedule fragment**

The border of estimates received by us on the criteria plane  $Q_1^*Q_2^*$  is convex. Thus, the effective border of a criteria set is the arc  $Q_1^*Q_2^*$ .

From the point of view of restrictions on the admissible portfolios from the Ministry of Finance of Norway there are limitations:

$$\begin{aligned} 0,5 &\leq x_1 \leq 0,7 \\ 0,0 &\leq x_3 \leq 0,05. \end{aligned} \quad (42)$$

Given these limitations for making the investment portfolio, let consider the strategy of obtaining the target return level not below the long-term rate of return of the Fund's investments (4%) with minimum risk [10]. The closest portfolio corresponding to this strategy will be:

$$(0,5; 0,5; 0,0). \quad (43)$$

Thus, in the presence of these constraints, the optimal portfolio should consist of half stocks and half bonds.

### Conclusions

The paper presents a modification of this model, we consider the optimal portfolio taking into account the specifics of the sovereign Fund and imposed by government restrictions.

According to the calculated results, the equity of stocks in the optimal portfolio GPFN "Global" should be 50%. The remaining 50% of the invested funds must be in bonds. The portfolio does not imply real estate investments.

The results slightly differ from the real data of the actual distribution of assets in the investment portfolio GPFN "Global", because the Ministry of Finance still allows investments up to 5%. This is possibly due to the desire to reduce inflation risk in the case of a decline in profitability as a result of a sharp jump in inflation. Obviously together with rising prices the real estate prices will rise the real estate prices, which partly compensates for losses caused by inflation. However, the deviation from the model we consider in part valid real estate investments (5%) relatively differs from investments in financial assets, dictated by the model (50%), which gives grounds the conclusion about the estimated and actual results.

Given the leading position of Norway in the ranking of the largest sovereign wealth funds, the calculations can help to understand patterns of sustainable economies with the aim of the adapted application of this experience to the conditions of Russia.

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**J11517-003**

**Idrisova Z.N., Romanova O.V., Lazovski S.E., Sitdikov A.T.**  
**DETERMINANTS TRANSFORMATION OF BANKS:**  
**COST OF CAPITAL AS A FACTOR OF M&A**  
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Modern trends in the restructuring of financial services related to the processes of mergers and acquisitions. Mergers and acquisitions (M & A) are the kinds of reorganization of enterprises to change the legal status of one or more subjects. This is a special type of investment, based on the principles of voluntary consent of all participants in the process and mutual benefit with the integration of business and capital, transfer of ownership to the change of control of the business (Corporate Control). A prerequisite for registration of mergers is the emergence of a new legal entity on the basis of previous companies, acquiring full control over the assets of the former company.

Low interest rates, high liquidity, high stock prices have pushed the development of the world market of mergers and acquisitions in 2014, when the volume of M & A transactions reached a record volume - 3340000000000. USD. Against the background of a 47% reduction in particular stands out the volume of transactions in the Russian market of mergers and acquisitions (M & A) in 2014 to 71% (volume of 17.3 bln. dollars.) with predominant participation of Russian buyers (82% of transactions).

However, the activity of Russian companies in the sector M & A outside the country for 2014 reached 5.4 billion. US., Which is 92% higher than a year earlier.

Regionally, the largest volume of transactions fell to the states of Europe, both in terms of acquisition of assets, and in terms of their sales. The difference is that in 2013, foreign investors were interested in the 75% of transactions with Russian assets in Russia, and in 2014 - 41% of the Russian assets abroad. Quantitatively, the share of bank transactions is about 7% of the total number of transactions M & A, in value terms the share of the banking sector accounts for more than 50% of M & A deals in Russia.

In the global market trends in the banking sector are reviewed three stages. The first involves the integration of national banks and the creation of large national corporations, the second - a large international transactions, and the third - the creation of the world's financial institutions that operate in the largest markets. Dynamics of Russia's transformation over can be attributed to the first stage.

Stimulate the banks contribute to the consolidation of the introduction of international standards, stricter requirements on the part of the regulator and reduce the liquidity of credit institutions. The nature of mergers and acquisitions in the banking sector in Russia, in general, different prevalence of "friendly takeover" that is determined not by personal preferences of owners, but the position of the Central Bank, able to use administrative levers in other situations.

Market expansion is activated through the procedure of liquidation of insolvent credit institutions carried out by joining (absorption). Of the total number of mergers and acquisitions, about half (43%) associated with a preliminary "recovery" of

troubled banks. Formal registration of transactions occur frequently as the purchase and sale of assets experiencing liquidity problems of financial institutions at reduced prices and the subsequent "voluntary" liquidation of the bank's objectives. Such procedures greatly reduce the time and cost of mergers. that, primarily due to the peculiarities of the Russian legislation. The fact that it strictly regulates procedures mergers and acquisitions and does not separately identify the absorption as a form of reorganization of the banking business.

Encourage mergers and acquisitions contribute to increasing the attractiveness of the bank's target factors such as the availability of open correspondent accounts in foreign banks licensed to work with precious metals, representing a credit institution financial statements according to international standards. Also contributes to the initiation of the need to diversify its business in the context of globalization: the expansion of existing regional banking network, development of new regions of presence, as well as expanding the product line. There is an active absorption of small and medium-sized regional banks, which leads to consolidation and concentration of banking capital. Many regional banks or completely cease to exist, becoming part of the parent company (the conversion of purchased bank branch), or continue to operate as subsidiaries of the parent's financial structure within the same banking group with total borrowing of the customer base and the most valuable, capable of generating income assets. In this sense, for the expansion of the retail business may be cheaper to buy the appropriate regional bank, rather than the organization's own retail network through a strategy of organic growth.

However, the Russian practice of mergers and acquisitions, there are examples of organic executing transactions where M & A has created an additional impetus to the further development of both banks, but under one brand. Implementation of the strategy to strengthen the acquired business of the credit institution is more likely in cases where the bank acquirer and the target bank have different specialization or when the absorbent structure has already been positively proven in the market the brand. Another way to implement prospective bank mergers and acquisitions becomes an additional issue of shares and share exchange affiliates. As a result of such transactions the bank can attract a strategic investor to enter the market and international banking capital.

To comply with the new requirements, the newly created through mergers and acquisitions banks will also have to improve the quality of corporate governance, especially in areas such as information disclosure, risk management, as well as the distribution of powers between the key bodies of corporate governance with a reference to the creation of added value, rather than on current consumption. Therefore, consolidation should take place under conditions of a transparent and stable economic environment and increased competition in the banking market.

Thus, the main purpose of acquiring new business through mergers and acquisitions is to create a strategic advantage for the bank account of the accession and integration of new business elements that should be more efficient than their internal development within the bank.

The main advantage of mergers and acquisitions in the banking sector to the growth of the bank from domestic sources may be possible to use the synergies of

cost reduction and diversification of banking products and services, which leads to a more rapid achievement of the Millennium Development Goals to the lending institution and leads to a weakening of competitive pressure by increasing the level of activity, as well as enhances customer base and geographic presence. In such circumstances, the problem becomes significant research prospects of the market and the attractiveness of such transactions management to enhance adaptive capacities of the banking system as a whole.

Effectively carry out M & A transactions involve a number of risks account of different nature. As an indicator of the integral evaluation is proposed to use the weighted average cost of capital. Such a promise is determined by the value of high sensitivity to changes in market conditions, which makes the rate controlled at the level of participants in the transaction. For the purposes of situational management proposes the use of simulation tools for different scenarios of M & A. The main stages of modeling package Ithink version Authoring. Discrete modeling by busting performance levels, forming the weighted average cost, to determine more fully the interests of all parties to the banks of its value.

The presented model analysis of the effectiveness of mergers and acquisitions is easy to implement, relevant, logically sound and has the following strengths:

- The impact of M & A is based on the long-term analysis using the discounted cash flows. That is, the basis is the assumption that the current value of the company - is given to date value of cash flows generated by this company during its economic life, discounted at a certain rate, the associated risks of the company. This approach is consistent with the psychological concept of investment;

- Model allows us to identify important for strategic analysis points: firstly, by calculation to determine whether the received kakaya- benefited from the transaction M & A (a synergistic effect that is common to the merging companies); secondly, to predict the effectiveness of the transaction directly to the company, its initiates.

The sequence and content of the proposed stages of discrete simulation selecting the discount rate and the structure used in the M & A capital maximizes the volume of cash flow will be useful in developing plans for investment activities of the investor and the combined business structure.

J11517-004

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## RE-INDUSTRIALIZATION & NEO-INDUSTRIALIZATION AS THE CONCEPT OF ADAPTIVE DEVELOPMENT OF COUNTRIES IN THE MODERN WORLD ECONOMY

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**Abstract.** *In article investigates the content of the new paradigm of socio-economic development of countries in modern global economy, which is based on the concepts of re-industrialization and neo-industrialization. Using the methods of analysis and synthesis, comparative, structural and logical, the author substantiates the preconditions of the transition to a new paradigm of industrial development, but it also analyzes the content of the concepts of re-industrialization and neo-industrialization in the practice of foreign countries (USA, EU) and the Russian Federation. On the basis of this analysis the author identified the mechanisms of implementation of each of the concepts in Russia and justified their key position in the industrial, scientific-technical and innovation policy of the state.*

**Key words:** *re-industrialization, neo-industrialization, de-industrialization, competitiveness, industrial policy, export diversification, import substitution, scientific-technical and innovation policy.*

The modern social and economic development, conditioned by crisis of financial and structural policy of the world community in general and her subjects in particular shows demand for uncommon approaches to a choice of strategy of maintenance of progressive economic growth and global competitiveness. The last is possible on the basis of use of complementary function of industrial, innovative, scientific-technical and external economic policy which manifestation is a change of system of the international division of labor due to its deepening by means of increase of labor productivity by transition from "demand economy" to "offer economy" on a new industrial and technological platform. Respectively, special relevance is gained by research of interrelation between global competitiveness and changes in a paradigm of its maintenance and development in modern conditions.

The aim of this research is identification of the maintenance of new industrial paradigm of national development and its concepts - reindustrialization and neoindustrialization in practice of foreign countries and in the Russian Federation.

Concepts of reindustrialization and neoindustrialization as conditions of effective economic development gained distribution to the post-crisis period of 2008-2009 against the background of reduction of world demand, and, as a result, world production, and also high need of the leading countries of the world for maintenance of population's employment, dynamism of investment development in real sector of national economies, and also understanding of high extent of deindustrialization of their industry on the basis of economy's globalization and transnationalization.

At the present stage, heads of the leading countries of the world recognized that the financialization world and national economies on the basis of a post-industrial paradigm of development sputtered out and led to deindustrialization of their economies. For the developed countries process of deindustrialization went under the

influence of exogenous factors that was shown in the following tendencies which gained development from the second half of the XX century:

- removal of production from borders of the country of basing by means of development of production's transnationalization and the international outsourcing within minimization of expenses of the companies;
- relocalization of "serial" technologies from the countries of basing (creation) in places of a dislocation transferred productions;
- decrease of number of the industrial and production personnel, including highly skilled;
- diffusion of innovations out of country founder, copying of technological processes and strengthening of the international competition between goods substitutes and analogs.

Strengthening of import, deterioration of trade balance of the countries, growth of budget deficit, increase in dependence on an environment of the world markets, growth of a social inequality, etc. becoming result of the above-named factors.

For the Russian economy process of deindustrialization is connected with such negative consequences, as:

- reduction of technological level and depth of processing of initial raw materials, equipment of production systems, machine park, equipment and adaptations;
- growth of disqualification work : loss of skills and ability to produce, decrease in qualification level of the personnel, loss of working professions;
- growth of number of loan (import) accessories, knots and details of machines in products of own production [11].

By words of professor Bodrunov S.D. at deindustrialization arises effect "4D":

- production process disorganization (decrease in level of the organization of production and production management);
- degradation of the applied technologies (falling of technological level of production);
- disqualification of work in production;
- simplification of a product of production thus destabilization of a financial and economic condition of production companies, disintegration of industrial structures and communications, and further – many others "de" [1] becoming consequences.

The general decline and loss of the whole directions of a production activity, sectors of production and the industry become economic result of this phenomenon, and the policy of reindustrialization became the solution of the arising negative consequences.

The start to introduction of the concept of reindustrialization was laid by the USA. EU countries and the others followed further.

Proclaimed imperatives of reindustrialization in the USA:

- realization of power strategy for increase of availability and reduction in cost of energy carriers – first of all, for the industry;
- stimulation of so-called "onshoring" ("reshoring"), return to home enterprises of manufacturing industry.

Proceeding from the analysis of practice of the USA within reindustrialization, it

is not simply about revival of productions in the territory (on the basis of slate revolution and, as a result, reduction of power expenses of production, attraction of the highly skilled labor giving advantage in creation of higher value added, economy on logistic expenses through more close location of productions to the consumer), and about the new concept of industrial development under the name "industrial revolution 4.0" which main technological drivers becoming digital and additive technologies, and also a robotics which get into traditional branches and considerably change their shape [7]. However in this context expediently speak about neoindustrialization as a result of transition to new technological way, activation and introduction of grocery, process, technological and administrative innovations.

The policy of reindustrialization in Europe is focused on activation of small innovative business and own hi-tech production. The first direction is realized on the basis of the developed European Commission of the Digital Agenda program which is urged to increase number of the small enterprises occupied in sector of electronic trading [13]. Against the background of expected growth of a common market by 10% a year, up to 2016, the European Commission plans to strengthen protection of the rights for intellectual property, having provided, in particular, support of small and medium-sized enterprises through services of information support concerning protection of such rights. These measures will provide adequate compensation of intellectual and financial investments and by that will push investors and businessmen to initiating reindustrialization.

In addition the European Commission will take part in transformation of the industry of the EU at the expense of the offer of new goods, services and business models among which is called 3D - printing which is used for production of components from plastic and metal in sector of production of cars, space devices and consumer goods that allows to save raw materials, energy and to create the products which are ideally capturing the essence of the XXI century. Also, so-called key highly effective technologies belong here. They find application in many spheres, since corrosion-resistant nanomaterials for construction of bridges and finishing with heat resisting materials for aircraft, once again made Europe a cradle of the new methods of production transferred to Third World countries.

In general, among the most important components of policy of reindustrialization/neoindustrialization abroad, it is possible to call:

- stimulation of interest in non-standard combinations of new technologies;
- development of new ideas, which the existing and developing commercial clusters can use;
- the help to businessmen in inclusion in world chains of deliveries and information streams for the purpose of effective communication of the companies from one part of the world with any other [9].

For the Russian Federation, as for strategy of reindustrialization and neoindustrialization differ and need the justification. Their general moment is high adaptive efficiency to external shocks [11], and also complementary character within industrial, innovative and scientific and technological policy [6].

However, in the author's opinion, step by step character of economic development with deficiencies of the financial, personnel, production, technological

resources immanently inherent in it strengthened by negative influence of the exogenous factors generating dysfunctions in endogenous components of social and economic system needs differentiation of policy of the reindustrialization which is based on restoration and modernization of the national industry taking in view definition of interrelation of functioning of various branches with economic growth and change of the international specialization of the country as export-oriented within an optimum combination of convergent and divergent strategy of technological development; and politicians of neoindustrialization within strengthening of positions of branches of the V technological way with building of elements VI of technological way, including by means of formation of the state vertically integrated corporations in strategically important branches, accelerations of demand for innovations (that restrains a situation of "a trap of technological backwardness" when technologically backward production doesn't show demand for innovations owing to development of economy of demand).

As a result the directions of reindustrialization are the following [11, p. 25].

1. Increase of efficiency of the extracting and power raw sectors, increase in extent of processing of raw materials in timber processing complex, petrochemistry.
2. Infrastructure projects (railway lines, gaso-and oil pipelines, roads).
3. Stimulation of development of export and internal productions — the grocery series providing internal and international competitiveness.
4. Basic and special mechanical engineering for import substitution and providing domestic market with own means of production.
5. Use of patent base of Russia and the technological reserves allowing to support competitive positions of the Russian companies in the world markets.

That means reindustrialization is the direction of industrial policy of the Russian Federation, which at the present stage isn't formed within legal base, and has separate character in the form of road maps and strategy of development of various branches.

Can act as instruments of realization of policy of reindustrialization:

- multiple increase in the state capital investments in modernization of the industry, revision of the existing FTP(Federal Target Programs) and other state programs;
- reorientation of monetary and credit resources of the state to the solution of problems of reindustrialization of economy;
- creation and encouragement of "demand for industrial investments" for business (both state corporations, and the private companies);
- mitigation of monetary policy of the Central Bank of the Russian Federation, purposeful decrease of cost of the loan capital for the industry;
- specification and increase of effectiveness of actions of currency control and deoffshorization of economy [1].

In fact, the policy of reindustrialization has the short and medium-term horizons, their criterion function is focused on restoration of industrial base of future development of national economy taking into account trends of development of world economy.

The most important feature of neoindustrialization is that it, recognizing the importance of an industrial factor in economy and society, focuses a national

economy of the country on hi-tech updating and the highest level of efficiency. As a result of the policy of neoindustrialization, in our opinion, correlates more with scientific and technical and innovative policy of the country. The accent in it is displaced on maintenance of development of hi-tech sectors of economy, mainly with the state participation, and also strengthening of interaction of real sector with science, development in the NIS complex, strengthening of demand for innovations within the country.

As the most important instruments of neoindustrialization has to become, first of all an ensuring introduction of technological and organizational and administrative innovations which already proved the efficiency in other countries that will allow to transfer our economy to new qualitative level.

In general, the analysis of essence, the contents, adaptability which is carried out in work to various national economies of concepts of reindustrialization and a neoindustrialization as factors of maintenance and increase of competitiveness of the countries in world economy at the present stage allowed to draw some conclusions:

- first, by the end of the XX century all countries of the world, against of the background of model's creation of post-industrial development provoked process of the deindustrialization, developing on the way of transfer of production of goods, innovations, the capitals to the third countries, to accumulation of import streams and deformation of branch structure of the housekeeper in real sector of economy;

- secondly, the concept of reindustrialization (new industrialization) in the West proceeds from already reached level of innovative development and provides return of hi-tech productions on the national soil and formation of internal potential of industrial development through a continentalization of transnational business;

- thirdly, in the Russian Federation owing to backwardness of scientific and technical, innovative, economic development of economy, a market maturity, the concept of reindustrialization and neoindustrialization aren't identical according to the contents and mechanisms of realization. So, the concept of reindustrialization is based on restoration and modernization of the national industry taking into account definition of interrelation of functioning of various branches with economic growth and change of the international specialization of the country as export-oriented within an optimum combination of convergent and divergent strategy of technological development. As a result, the industrial policy, and also in total with it policy of diversification of export of the country and import substitution becomes the most important mechanism of its realization. The concept of neoindustrialization focuses a national economy of the country on hi-tech updating and the highest level of efficiency within innovative economy. Respectively, the mechanism of its realization is connected with scientific and technical and innovative policy of the state. Nevertheless, as shows foreign experience (the USA, the EU) the state support of a new paradigm of development has to create conditions for realization of an initiative of increase of competitiveness of national economy in modern conditions "from below", as causes strategic effect for maintenance and strengthening of competitive positions of the countries in global economic system.

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**J11517-005****Firsova SY, Kulikov AV****SYSTEMATIC APPROACH TO ORGANIZATION OF WORK OF ROAD TRANSPORT IN THE HOUSING INDUSTRY***Volgograd State Technical University, Russia,  
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*Abstract. In the present paper, it is recommended to use a systematic approach to organizing road transport in the housing industry. A proposal was made to consider the transportation process in the construction industry at three levels: micro level, meso-level and macro level.*

*Key words: systematic approach, road transport, road transport of goods, housing, transport costs, transport component, micro-level, meso-level, macro level.*

At present, the improvement of housing conditions of the population is an important element of social policy influencing the demographic and socio economic development of society. Housing construction is one of the important sectors of construction in Russia. The current stage of the state housing policy is aimed at increasing the affordability of housing for the population.

Housing construction in Russia falls into four categories depending on the materials used for the construction: wood, bearing-wall, monolithic, brick. Also, there are mixed types of house building, which combine the above categories in one way or another (frame, monolith-brick).

Housing construction is one of the most resource-demanding sphere of production. Certain volumes of transport and cargo handling works are performed during construction of any building or structure. These works are connected with transportation from the place of production to the construction site of materials, half-finished products and finished products.

Currently, building cargoes include a variety of materials, constructions, components, technological equipment, as well as the cargoes, which come out of construction works (soil, construction waste, etc.). Based on the organization of loading and unloading, building cargoes are divided into the following groups: piece cargoes; small-pieces, break bulk cargoes; bulk materials; cementing material. The largest share falls on soil (35%). It is connected with large amounts of earthworks in the construction. Significant shares fall on inert materials (22%), concrete (20%) and reinforced concrete products (14%), as they are the main building materials [3]. Transportation costs are sometimes higher than the cost of extraction or production in the cost of some building materials.

About 80% of all transportations of construction cargoes are carried out by road transport. The advantages of road transport are high speed, high maneuverability and the ability to deliver a variety of goods directly to the object of construction. This type of transport is the most widely used in conditions of housing construction.

The main task of the organization of transportation of building cargoes is the timely delivery of materials and designs to the construction site with minimum cost of transportation.

The basic concept of the systematic approach to organization as a process is the

interconnection of parts or subsystems of enterprise. Such approach envisages a goal setting and focusing on the creation of a whole, in contrast to the creation of the components, steps or subsystems. Organizational systems are designed to achieve simultaneous work of separate but interrelated parts, which provide higher overall effectiveness than the total effectiveness of the parts taken separately [1].

Organization of transportation is connected with the establishment of the procedure of preparation and transportation of cargoes with proper settlement system, accounting and control. It should focus on achieving high performance of the vehicle with minimum cost of transportation [4, 5].

Currently, transport systems are not sufficiently effective because they are unable to link parts or steps into one mechanism. The basic concept of the systematic approach to organization is the interconnection of parts or subsystems of enterprise in the building industry. To obtain more objective description of such a system using minimum information, the transportation process should be considered at three levels: the micro level, meso-level and macro level.

The level of the system depends on what variables describe the system. It is necessary to determine the system boundaries and the structure of unstructured element of the system. The unstructured element of the system is its smallest part, mode of behavior of which is subjected to the laws of all structural level of the system. When determining the unstructured element it is necessary to consider that there is a minimum level of dimensions, below which the properties of the system are no longer appearing. To select a part of the system, which could be unstructured element, it should be borne in mind that elements of the system interact with each other [2].

The transport will be considered at the macro level when analyzing the organization of road transport in the construction industry of residential facilities within the framework of state housing programs (city, region, country). To reduce transport costs, it is planned to create specialized trucking companies, which would work under these programs and would be the unstructured element of the system. The boundary of the system in this case will be a city, state, country.

At the micro level, the work of transport is considered during construction of one residential facility, the unstructured element of the system will be cargo-car-driver-road. The boundaries of micro level of the system are set by route of transportation of construction cargoes from the supplier to the construction facility.

At the meso-level, the unstructured element will be routes of cargo delivery from the supplier to the various construction sites of one builder. Boundaries of the system are determined by territory under construction.

It is necessary to reduce transport costs at all three levels. At the micro level, costs can be reduced by selecting the optimal type of vehicle and cargo handling mechanisms; preparation and rational placing of cargo on the pallet, platform or in a truck body; selection of optimal scheme of transportation; improvement of performance of the truck; coordination of the work of the objects of production, consumption, transport.

At the meso-level, transport costs can be reduced through the effective use of vehicle and creation of routes for transportation of small parties of cargoes and cargo

shipping using one truck.

At the macro-level, transport costs can be reduced through the coordinated work of the transport complex of town (district, region) within the social housing construction programs.

At the micro-level, the output parameters of the system include the following elements: cargo description; volume of transportations (year, month, day); classification rating; value of cargo; point of departure and destination; carrying distance; time of departure and delivery of cargo; type, model and the number of units of vehicle; technical and operational parameters of vehicle (capacity, capacity utilization rate, loaded mileage proportion, technical speed, downtime during loading and unloading); carrying capacity of vehicle; irregularity coefficient of transportations (by months, days of the month, hours of the day); prime cost of transportation; transportation costs; share of transportation costs in the costs of cargo; reserve of the carrying capacity of vehicle; utilization rate of carrying capacity.

It is not necessary to consider so many parameters for many purposes, it is sufficient to consider the transportation process at the meso-level. The list of output parameters of freight traffic at the meso-level includes the following elements: volume of transportation; value of cargo; prime cost of transportation; transportation costs; share of prime cost of transportation in the costs of cargo; organization level of transportation; effectiveness ratio of the transportation process; carrying capacity of vehicle; reserve of the carrying capacity; share of transportation costs in the gross domestic product of enterprises.

At the macro-level, the output parameters of freight traffic include the following elements: volume of transportation; prime cost of transportation; transportation costs; reserve of the carrying capacity; share of transportation costs in the gross domestic product of enterprises.

It is important to determine performance indicators for each level of the system, which most fully describe its state at a particular time. Many details about work of transportation systems are lost when moving from micro-level to meso-level and macro-level. For example, descriptions and characteristics of transported cargoes, characteristic of vehicle, etc. It is necessary to focus attention on parameters such as the organization level of transportation, the share of transportation costs in the gross domestic product of enterprises and determination of rational reserve of carrying capacity of transport means [2].

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**J11517-006**

**Matyugina E. G., Yarushkina N. A., Selenchuk Zh. O.**  
**ROLE AND PLACE OF A RECREATION IN SUPPORTING OF**  
**REPRODUCTION CONDITIONS**

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*Abstract. The organization of a recreation is the integral condition of the population reproduction which is under the double wearing-out impact of production (in aspect of habitat pollution and decrease in working ability of workers directly in the course of production). It causes insistency of a recreational component embedding in process of society activity.*

*Keywords: recreation, reproduction*

The functioning of the national production, based on the needs and as a result, the maintenance / improvement of well-being while providing wears impact on health and work capacity of the nation. The more intensively the productive forces develop and the higher quality requirements for the workforce, the more significant negative impact of the production on the latter. The formation of new industries, the emergence of non-existing jobs, the complication of technology, the expansion of the list of production harmful factors - this is not a complete list of reasons for the growth of emotional, psychological and physiological stress on the staff of enterprises. Thus we are talking about factors of internal origin, – influencing on the employee in the performance of their job functions. Their influence is enhanced due to anthropogenic pressure of production on the environment (external influences). WHO estimates that up to 20-30% of non-communicable diseases are caused by unfavorable ecological situation in the region of location of large industrial centers. Thus, the share of oil and gas sector accounts for over 10% of the total pollution in Russia; at 75% of hydrocarbon pollution (from industry) are in the atmosphere [1].

Thus, the prerequisites integration in productive activities compensatory mechanism, implemented in the aspects as to minimize environmental impacts on habitat and recreation organizations to maintain the working capacity of employees are created. It is indispensable for the conservation conditions for the reproduction of society, to ensure continuity and development of economic processes. Let us dwell on a recreational component, implemented directly in the production process (e.g., work breaks, rooms for rest and organization t. d.), and outside of it (e.g., leisure, vacation, etc.). In this account of the possibility of recreation by a significant set of features, allowing to determine the approaches to the organization and management tools parameters of each species is necessary:

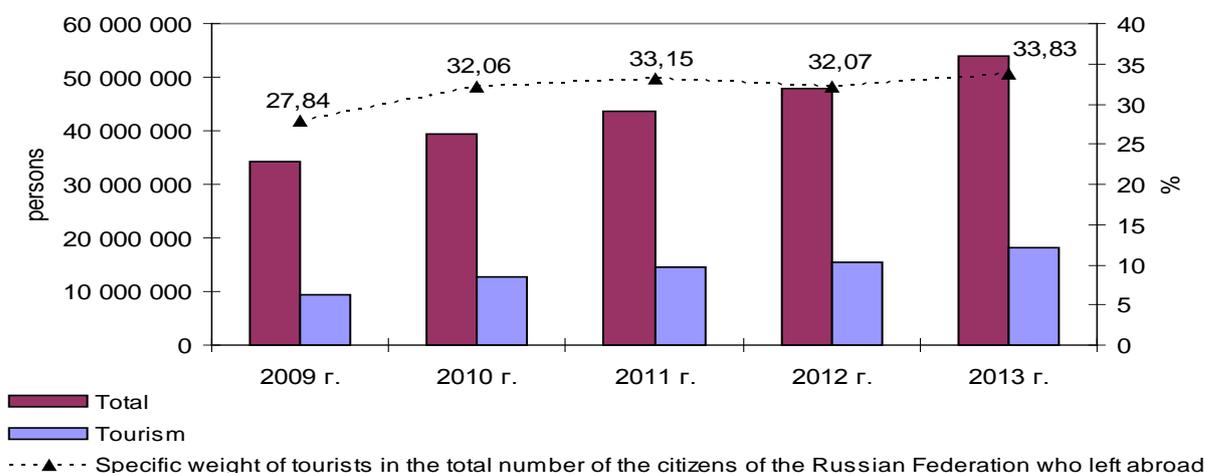
- by the periods – current and lump sum (vacation)
- by the content – sports, rehabilitation, cultural leisure, etc. ;
- by liaison with production – carried out during the production process (as part of the process cycle), carried out due to the production;
- by combining the functions – mono recreation, recreation poly

- by funding for the organization – funded by households, with the participation of enterprises, region, state;
- by the method of organization – spontaneous, planned;
- by on cultural tolerance – a-cultural, corresponding standards of morality.

In the recreation as in the process participate economic agents at different levels. Thus, the state develops and monitors compliance of statutory regulations (e.g. safety regulations), finances the creation and maintenance of recreational facilities. Thus, according to the Federal Program «Development of physical culture and sports», 2015 is supposed to engage in systematic physical training and sports up to 30% of the population and increase the availability of sports infrastructure facilities to 30 per 100 thousand residents [2].

The regions are developing their own recreational infrastructure, within the limitations generated by the state. For example, in accordance with the «Strategy of socio-economic development of Siberia 2020» in the list of priority investment projects of the Siberian Federal District the project «Integrated Development of Altai Ob region and the effective use of tourism and recreational assets of the south of Siberia» is included, as well as investment projects for the development of tourism-recreational sphere «Creation of a special economic zone of tourist-recreational type «Baikal harbor», «Creating a center of tourism «Sable Mountain» in the special economic zone of tourist-recreational type» [3].

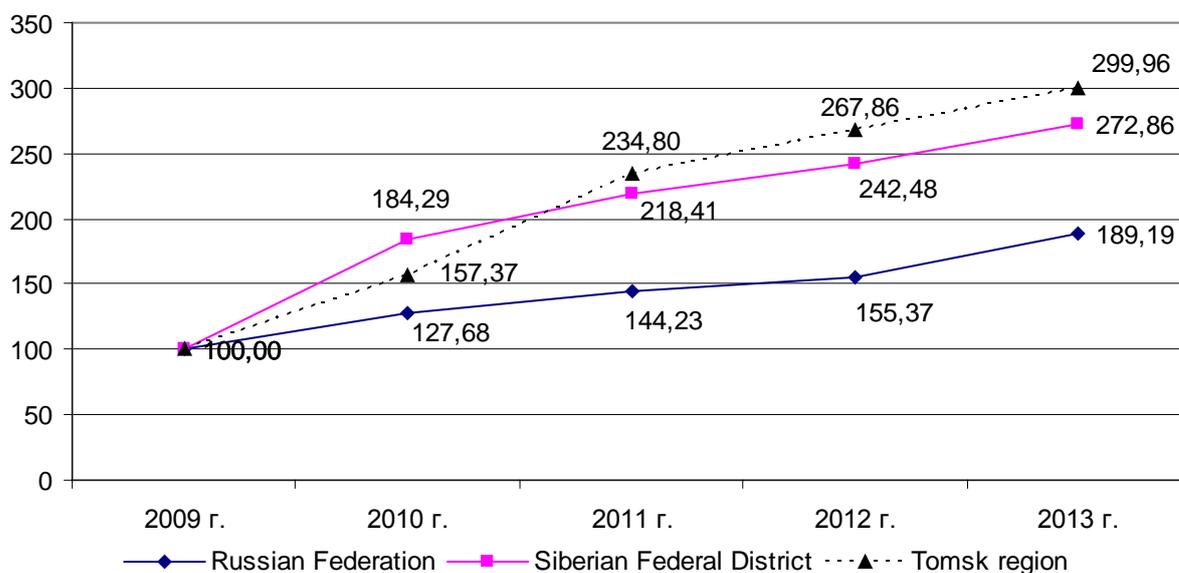
Companies may make «provider» of services (e.g. travel agencies and tour operators), «organizers / investor» – take a direct part in recreation by providing vouchers to employees, paying for travel to destinations by investing in the construction of health centers, recreation centers, etc. (the role of «buyer / customer» recreational services is concomitant). Thus, according to the interagency statistical information system [4], the number of tour operators registered in Unified federal register (EDF) amounted in 2013 to 4608 pcs., 1,64% (77 pcs.) below the number in 2012 As can be seen from Fig. 1, increasing the number of Russian citizens who went abroad, the proportion of tourists in the post-crisis period 2010-2013. sufficiently stable – on average 33%. The most popular destinations Departure Russian tourists in 2013 – are Turkey, Egypt and Greece.



**Fig. 1 - Dynamics of departure of Russian citizens abroad [5]**

An example of the implementation of the business role of «organizer / investor» can serve recreation activity DSK «Stroydoreksport» (Kemerovo) having sports complex in the territory of head office; each employee due to the company has the opportunity to use the swimming pool; The company annually organizes annual rafting Altai, Tomsk region, and so on. d. [6].

Households, creating demand, determine the basic parameters of the recreational services (ie. h. tourist) – popular kinds of recreation, related services, etc. So in the period 2010-2013. Siberian Federal District took 4 th place in Russia in terms of paid tourist services (in 2009 – 5th place). Tomsk Oblast in the SFO took 6th place in the period 2011-2013. (In 2009 – 8th, in 2010 – 7th place). The growth rate of the volume of paid tourist services in the Tomsk region are much higher than the growth rate of this indicator in the SFO and in Russia as a whole (Fig. 2) [7].



**Fig. 2 - The growth rate of the volume of paid tourist services,% by 2009**

Thus, in the process of organizing recreation actors at various levels, are involved each of which performs its own inherent only his roles, contributing to the formation of the «production-recreation» and thus supporting the reproduction process.

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J11517-007

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**OPTIMIZATION OF FINANCIAL AND ECONOMIC PROGRAM OF  
THE ORGANIZATION JSC «CAUSTIC»***Sterlitamak Branch Bashkir State University, Sterlitamak.*

The relevance of this work lies in the fact that at the present time each company must carry out financial analysis to survive in the market and remain competitive[1]. To achieve this goal we have analyzed and evaluated financial condition and developed a simulation model of the financial status of Sterlitamak JSC «Caustic».

The transition to a market economy requires that businesses improve their production efficiency and the competitiveness of their products and services. The last requirement can be achieved through the introduction of scientific and technological progress. An important role in the realization of this task is the analysis of the financial conditions of a company. The analysis and the evaluation of a company's economic condition are important and effective elements of the production management system. Furthermore, they form effective means for detecting internal reserves.

An important factor which determines the financial condition of a company is the implementation of a financial plan and its completion as the need for own capital turnover due to which the profit arises. The speed of turnover of the working capital is the second important factor. The analysis of the financial condition of a company includes analyzing the balance sheet assets and liabilities, their relationship to company's structure, the capital utilization as well as the assessment of financial stability.

One of the most important tasks in the development of the company strategy is the creation of evidence-based models of assessment of its financial strength, as it is a prerequisite for economic and institutional development of enterprises. The use of appropriate techniques and models in practice creates the preconditions for making management decisions. Discriminant function, which allows to significantly simplify the analysis of financial stability, give a clear assessment of the financial condition of the company, meets the requirements of most businesses so it is built on the basis of its comprehensive assessment of the financial stability of the algorithm, based on the simulations.

The relevance of this work lies in the fact that at the present time each company must carry out financial analysis to survive in the market and remain competitive. First of all, the owners, as well as lenders, investors, suppliers, managers and tax services are interested in the results of this analysis that build on its base a conclusion about the directions of the company. The more attractive financial results will be published showing the current and prospective financial condition of the company, the higher the probability of obtaining additional financing.[2]

To achieve this goal we have analyzed and evaluated financial condition and developed a simulation model of the financial status of Sterlitamak JSC «Caustic». «Caustic» is one of the largest companies specializing in the production of caustic soda and other chemical products based on chlorine and hydrocarbon gas processing

by enterprises of Salavat, Ufa, Nizhnekamsk.

In the course of analyzing the economic activity of JSC «Caustic» we have assessed all key indicators of financial condition, and also identified negative aspects relating to its financial condition. Analyzing the level of the key financial indicators for the period under review we can see unstable dynamics: JSC «Caustic» has a «heavy» structure of assets - the level of profitability of sales has slightly decreased due to inflation and the pricing of chemical products in the global market. Thus, the level of profit and profitability rises mainly due to higher prices, indicating a significant overhead and high profit sensitivity to changes in revenue. In order to maintain the financial stability the company needs to have a high proportion of equity in funding.

The analysis and assessment of the financial condition of the company allow us to conclude that the system of management of financial - economic activity of JSC «Caustic» is relatively efficient, since there are a number of positive trends, as well as there are some negative points about the financial situation of the company. Negative trends in the financial activity of JSC «Caustic» made it necessary to develop measures and models to improve the organization of the system of financial and economic activity of the enterprise, as well as finding ways to improve the financial standing of the company.

In today's world, information systems and technologies, processing economic information, are being used more and more. To assess the financial condition of the company on the model of «risk analysis of bankruptcy by Altman» in the program package MATLAB Simulink was written, in order to facilitate the calculation of the required quantities.

In order to construct a simulation model of assessing the financial soundness of the enterprise the adaptation of the discriminant model was made, shown in Figure 1). Calculation by Z-model - based simulation in Simulink program is implemented on the basis of statistics of JSC «Caustic». Figures were obtained according to the balance sheet (form number 1) and the income statement (form number 2) in the three years 2012-2014.

**Table 1.**

Index	The procedure for calculating	2012	2013	2014
X1	(page 290 F.1- page 690 F.1)/ page 300 F.1	0,305	0,346	0,412
X2	Page 190 F.2 / page 300 F.1	0,136	0,73	0,602
X3	Page 140 F.2 / page 300 F.1	0,163	0,432	0,269
X4	Page 490 F.1 /(page 590 F.1+page 690 F.1)	1,43	3,219	4,536
X5	Page 010 F.2 / page 300 F.1	1,287	1,202	1,14
Z	Formula (3.2.)	2,722	3,021	2,891

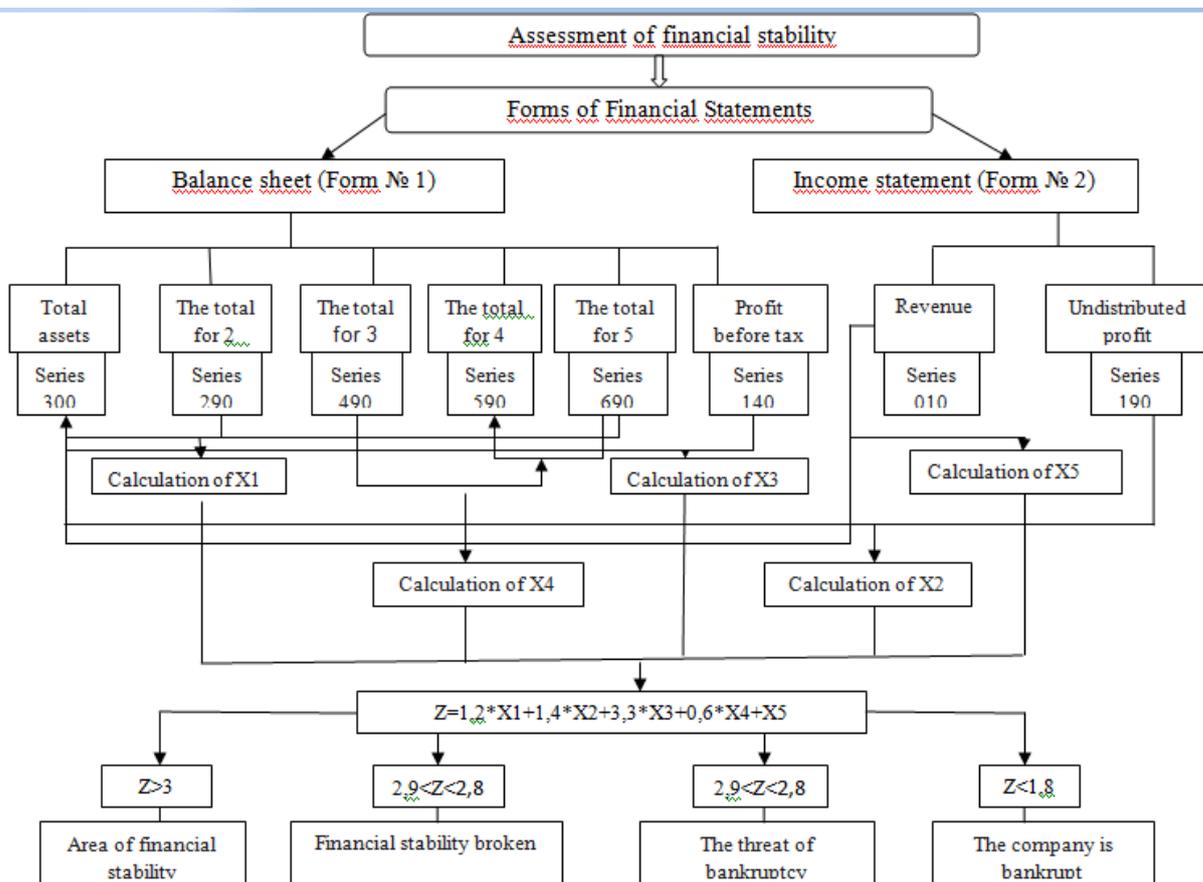


Figure 1.

**Adaptive scheme for calculating the index of financial stability.**

Having done experiments on a simulation model, we conclude that the company will respond to the changes under the influence of external and internal factors, if there are no possibilities to monitor these processes in reality. Block «numerical representation» of the program Simulink allows you to view the results of numerical simulations[3]. The result of this experiment is the following (see Table 1).

The cost of production of JSC «Caustic» in the dynamics of the last three years is growing at 17.2%, including an increase in all cost items - materials , labor costs , along with insurance premiums to extra budgetary funds , depreciation, among other expenses.[4]

The level of profitability of sales slightly decreased due to inflation and pricing in the global market of chemical producers. Thus, the level of profit and profitability rises mainly due to higher prices. However, all these leads to the conclusion that the financial condition of JSC «Caustic» is pretty steady and stable. The company is able to make a profit, repay loans in time and pay interest on it. However, as the results of the analysis, the company has still sufficient reserves to improve significantly their financial condition [5].

The calculations show that in 2012 the company JSC «Caustic» was in a state of crisis, the extremely negative trends in the enterprise were observed, a high threat of bankruptcy was evident. Dynamics of Z-score values in 2013-2014, the trend indicates a stable financial stability. Thus, a simulation model of financial stability is quite simple to use: just by changing the input parameters, the financial and economic

performance for the period, you can quickly and easily assess the current situation of the company [6].

Thus, a simulation model of financial stability is quite simple to use: just by changing the input parameters - financial and economic performance for the reporting period, you can quickly and easily assess the current situation of the company.

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J11517-008

Bashlay S.V.

**FORMATION OF THE SYSTEM OF BANKING SUPERVISION UNDER  
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**Introduction.** The evolution of approaches to banking supervision organization is a continuous process of improvement of methods of supervisory activity. This process is objective and is associated with regular financial innovations, the appearance of new financial instruments, the development of new forms of cooperation between financial institutions. In globalization of world financial system the boundaries of traditional sectoral segmentation of financial markets are disappearing and banks are hardly competing with non-banking financial institutions. A so-called “financial globalization” (an increasing integration of national financial markets into a single global market) [1] considerably complicates the activity of national regulators of banks-members of banking groups and financial transnational corporations (financial conglomerates). Meanwhile, the form of presence of foreign capital (in Ukraine – participation in the authorized capital of banks and opening of branches) in the banking system of the country is determined by local legislation and requirements of national central authorities of monetary regulation (as a rule, central banks of countries).

In support of the urgency of investigation of this issue for Ukraine it should be noted that the study of existent experience of regulation of foreign capital in the domestic banking sector promotes to identify global trends, which determine the development of world economy, as well as becomes an important methodological aspect of organization of effective regulatory and supervisory policy in the country.

The main task of this publication is to investigate the background and the content of main approaches to banking supervision organization in different countries of the world and Ukraine, taking into account the scale of foreign capital presence in their banking systems. It is also necessary to deeply investigate the determination of whether transition to consolidated model (megaregulator) of supervision of financial market participants of Ukraine is logical or special.

**Basic content.** The global financial crisis, among other things, revealed weak points of banking supervision and disclosed the content of immediate problems of banking activity regulation. Of course, it caused a number of changes that had to be implemented into a state policy concerning the banking sector. Main adjustments and changes in the banking regulation (including those under the influence of foreign capital) concerned, first of all, the following aspects:

- establishment of prudential requirements to bank activities based on the results of external and internal rating and usage of more objective approaches to assessment of market and operational risks (“adjustment” of protective role of equity capital, stress-testing);
- development of policy of macro-prudential supervision in the financial sphere;

– establishment of regulation of internal environment of banking functioning (corporate structure) and not recognized until recently the external environment – financial and banking groups.

Almost to the end of the twentieth century systems of regulation and supervision of banking institutions (including those with capital of foreign origin) provided for an analysis of their activity state only by the means of prudential monitoring and inspections (microeconomic approach). In this so-called formal approach important components of supervision such as professionalism of management in the system of risk management, bank stability under the influence of systemic risks and prospects of its development in significant changes (both positive and negative) of external environment are beyond the attention of control authorities. Under these regulatory conditions capital actually “freely” (with the exception of direct restrictions or prohibition) came into (and out) the banking systems of the recipient countries, often visually demonstrating the level of investment and technological attractiveness of financial markets of the countries concerned. A number of Eastern European and South American regions actively began to focus on the resources of foreign origin for the banking system. As a result of this expansion banking assets in Central and Eastern European countries were 80 % controlled by foreign investors (share of foreign capital in the banking system of Estonia was almost 99 %, Czech Republic – 97 %, Lithuania – 77 %, Poland – 70%) [1].

In fact, the global financial crisis in 2008 led to the establishment of substantive principles of banking supervision, which subject was not the formal, but real support of sustainable and stable functioning of the banking system of the country. The main component of the supervisory process in the application of the risk-based banking supervision is the monitoring of the bank risk profile – the aggregate data on the bank risks to which it is exposed (or potentially exposed), as well as the internal system of risk assessment and management. Meanwhile, the traditional set of prudential standards had to acquire a dynamic character – values change depending on the financial situation. Almost new format of financial supervision integrated macroeconomic monitoring into stress tests of financial states, depending on which traditional macro prudential standards of banking activity have to change systemically and dynamically as well as new macro regulators of relevant financial markets.

The supervision on a consolidated basis became one of the instruments of a risk-based approach to regulatory impact on activity, primarily of banks with foreign capital. That is because of the need for its implementation is formed due to the process of financial globalization, emergence of different scaled (including international) amalgamations of banks and other financial institutions, as well as the diversification of their operations. The appearance of banking groups and the emergence in this connection of specific bank risks, generated by other members of the banking group, arranged conditions for the appearance of consolidated supervision of banking activity [2].

A realistic assessment of the bank`s correspondence with supervisory standards should take into account all financial and credit institutions in which it is involved or those which are appropriately associated with it. That is the idea of supervision on a

consolidated basis. That is, it is an integrated approach of banking supervision that allows estimating the stability of the whole financial group, taking into account the risks faced by the bank, regardless of whether these risks are reflected or not in the bank's statements and companies related to it. Meanwhile, the consolidated supervision does not mean carrying out of banking supervision on the base of the consolidated financial statements of the banking group. In addition, it does not replace, but supplements the supervision on individual basis.

The adoption of the relevant law in 2011 by the Supreme Council of Ukraine [3] was due to the need of improvement of the approach to state supervision in the financial services market through the implementation of consolidated supervision of groups, which consist of financial institutions, including banks. The main criterion for determination of the financial group became the relations of control between its participants. Depending on the main controller in the group or prevalence of the type of financial institutions (banks or non-banking financial institutions) financial groups are divided into bank groups and non-bank financial groups. The law supports a separation of powers between state regulators concerning supervision on a consolidated basis depending on the type of financial group.

The traditional way to determine the banking group is through the parent bank and its subsidiaries and associated companies. The modern method of determination of the banking group is the prevalent banking activity (regardless of group structure). Its use contributes to the support of effectiveness of supervision on a consolidated basis in the following areas: consideration of existing groups in terms of their core financial business, regardless of their legal and formal structure (prevention of regulatory gaps) and taking into account the available resources and potential of supervisory authorities (prevention of regulatory arbitrage).

The regulator of financial group has the right to establish requirements for corporate governance and risk management systems, regulatory capital adequacy and also to establish prudential standards and limits on certain activities, including activities in other countries. Meanwhile, the financial institution included in the group does not go out of control of other financial regulator. Thus, members of the group automatically move to regulation and supervision of two government agencies.

In many countries, central banks often play a role of the megaregulator of financial market, particularly in the case of underdevelopment of non-banking financial institutions or the case of banking-central model of the financial system development. The megaregulator is relatively popular model and almost 50 countries have tested it as a single financial market regulator. The main reasons for desire to create the megaregulator should be determined.

First, it can be justified in conditions of the financial sector development towards universalization. The more diversified financial products and services, the more difficult to classify and regulate them by specialized supervisory authorities.

Second, the cause to create the megaregulator can be complicated by the structure of the financial sector itself. Financial intermediaries, which operate in the financial markets, merge with each other that greatly complicates the supervision. In this situation, the supervisory bodies are not able to assess the overall risks of amalgamation.

Basing on the study of the practice of recent institutional reforms in the financial sector and its regulation, we can determine a number of facts, which substantiate a leading role of the central bank of the country in the structure of supervisory authorities. The assignment of the functions of regulation and supervision of financial institutions, which are residents of the country (including those with foreign capital or international origin) to the central bank, took place in the United Kingdom (Financial Services Authority), Germany (Federal Financial Supervisory Authority), Japan (Financial Services Agency), Ireland (Financial Services Authority of Ireland), Slovakia (Financial Market Authority).

In countries such as the USA, Germany, France, Belgium, Portugal, central banks had to implement the macroprudential policy [4].

However, initially the idea of a single regulator was rejected in the US, and in 2013 the megaregulator of Britain was divided into two structures: Financial Conduct Authority and Prudential Regulation Authority.

The creation of the megaregulator on the base of the NBU can provide the following benefits: to promote coordination in the activities of regulatory bodies, eliminating duplication of supervisory functions, the use of common approaches, methods and forms of supervision, formation of the unified information support, strengthening regulatory responsibility for decision-making as well as reduction of government expenses on the regulation of financial market. Methodically such megaregulator, due to its resource capacities and functional support can also provide the following: to carry out the regular government monitoring of all entities of financial infrastructure, to promptly identify systemic risks and implement measures at the macro level to reduce their manifestation, to cooperate with regulators of other countries to support stability of domestic financial market.

**Conclusion.** Thus, the features of regulation and supervision of institutions of financial market with their available resources (organizational, financial, technological) of foreign origin in different periods of operation of banking systems generated the ground for qualitative and quantitative transformation of national structures and approaches to state control over the financial market in general. The next stage of reformation of the system of banking supervision in Ukraine – the transition to macroprudential framework of creation of financial market's megaregulator already has some organizational and legal basis (supervision on a consolidated basis), and is also with absence of logic of institutional changes in the global trends of searching the optimal behavior direction in modern conditions.

In addition, the identified directions of reformation of Ukrainian system of banking supervision in modern conditions of post-crisis economic and political functioning are in line with the achievement of the main objectives of the banking system reform in general. According to the Strategy of reformation of the banking sector of Ukraine, these directions include the following: support of financial stability of the banking sector and macroeconomic stability in the short-term and long-term periods, activation of the banking system to mobilization of local and external resources to stimulate economic growth, further usage of the EU standards and international experience in the activity of domestic banking system, as well as improvement of supervision on a consolidated basis, strengthening the protection of

investors, creditors and consumers of banking services, the development of financial markets and improvement of banking market infrastructure as the basis for the development of diversified financial system.

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**J11517-009**

**Vorob'eva N.V., Kozel I.V., Timofeeva V.V.**  
**WAYS IMPROVING COMPETITIVENESS OF RUSSIAN COMPANIES**  
**IN THE WORLD MARKET OF MINERAL FERTILIZERS**

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*Summary: In the work external threats for successful development of the companies - producers of mineral fertilizers are considered. The development purposes for increase of competitiveness of the Russian companies in the sphere of production and export of mineral fertilizers are offered.*

*Keywords: mineral fertilizers, export, investment activity, companies - producers.*

Currently, Russia Federation is a very important issue of increasing food security and highly desirable reducing the country's dependence on imports of many kinds of food. Under these circumstances, fertilizers acquire new, even more important aspect, because humanity pressing for increasing the productivity of land with a view to greater food production.

The most developed segment in the country is the production of mineral fertilizers which is considered from the standpoint of Russia's participation in the international division of labor and allocation of vanguard sectors. Thus, the production of potash, it ranks second (about 24% of world production), for the production of phosphate fertilizers - as second place (about 8% of the world market), nitrogen - a quarter (about 8%). The share of mineral fertilizers in recent years, accounts for more than 20% of commercial production of the chemical and petrochemical industry in our country and more than 35% of all exports of chemical products.

However, in addition to quantitative indicators, the important role played by issues of product quality. The domestic production fertilizer industry in the global market as a whole is characterized by high quality and competitive price, thanks to the presence and the specific properties of our natural resources and the low cost of energy as the main component of domestic production.

Russian Federation together with China, the USA, India is among the largest producers in the world market of mineral fertilizers, which account for about 60% of total production. At the same time the largest manufacturing countries are also the leading consumers of mineral fertilizers. Over the past thirty years, the world market of fertilizers developed quite rapidly (on the order of 5-6% per year) due to the active development of world agriculture, and also due to population growth and a corresponding increase in demand for food, primarily from developing countries.

Russian Federation exports 90% of the production from branch of mineral fertilizers because of weak demand for fertilizers from domestic farms of the Russian branch on production of mineral fertilizers. Currently, the relatively low cost of fertilizer Russian production remains the main competitive advantages of Russian industry in the production of mineral fertilizers. Among the main problems of the industry should indicate: the relatively low technical level of production; the extremely high degree of deterioration of the existing equipment, largely outdated

technology; the exceptionally high capital intensity of production; the bureaucracy of government regulation of the industry; the unnecessarily high energy consumption and heat production, and finally, the extremely low productivity compared to the competition from abroad.

Today we can identify the following main external threat to the successful development of the Russian manufacturers of fertilizers:

- further liberalization of the energy market, predetermining a significant increase in Russian electricity tariffs and provoked by this inflationary wave;
- recent accession of Russia in the WTO which basic conditions reduce the level of protection of the Russian producer and considerable segments of our economy, in particular, of agriculture;
- steady increase in the cost of living and the level of wages in the Russian regions and sectors of the economy against the backdrop of still relatively high inflation;
- extremely insufficient development of the Russian banking system for effective long-term crediting of real sector of economy and, in particular, agriculture;
- continuation of the policy of protective measures in a number of countries importing fertilizers in respect of Russian products;
- possible crises of the world and national economies of importing countries in the nearest future;
- unsatisfactory condition and availability of rolling stock for domestic transport bulk cargo (mineral wagons, gondolas);
- becoming more widespread in the market of new types of agricultural products that do not require the traditional farming methods (for example, genetically modified agricultural products).

In general, the development of strategic target setting to improve the competitiveness of the Russian companies in the production and export of mineral fertilizers can be formulated as follows:

1. Strength preservation – still rather low production expenses.
2. Overcoming of the weaknesses due to the following actions:
  - more intensive updating of business assets with reduction them to level, at least, above the industry average;
  - unification of quality (standards) of the same fertilizers which are released by the enterprises of the company;
  - expansion of the commodity range to complete the product range (such as the fact that today it is produced by foreign competitors);
  - creation of the unified monitoring and quality management;
  - integration on the basis of raw material with the producer of ammonia;
  - establishment of effective control over the transportation of the intra-process raw materials;
  - creation of the reliable transport system, including an arrangement of the corresponding points of a mass overload;
  - creation of the corporate standard of requirements to selection of the administrative personnel, and also carrying out transparent personnel policy;
  - maximum maintenance of the brand of products of the company in the world

market and the effective active marketing;

- unification of procedures of document flow and closer interaction between divisions in the company.

The active development of innovative activity at the enterprises of the sector of production of mineral fertilizers in Russia is heavily dependent on public policies in the field of balance of mineral fertilizer sales in the domestic and foreign markets. Though now the most part of different types of mineral raw materials and ready mineral fertilizers is exported, thus, however, not observed essential raising of the capital investments at the enterprises of branch. In addition, the decrease in fertilizer application leads to a deterioration of agrochemical characteristics of the agricultural land in Russia, and this leads to lower yields and, consequently, a drop in the level of food security of the country as a whole. The preservation of the soil fertility is a strategic objective and it is provided only with the introduction of the required inputs of organic and mineral fertilizers.

The development of the investment activity in the Russian fertilizer industry should contribute to the rational combination of sales in the domestic market and abroad. It is offered in the large projects, including with participation of the foreign capital, which are directed on the production of natural mineral raw materials and its processing supported by the state or realized with participation of foreign investments, to plan a share of production intended for domestic market. In addition, the task of expanding sales of mineral fertilizers in the domestic market will contribute to the improvement of customs policy in the field of regulation of export duties levied on the export of raw materials for the production of mineral fertilizers, as well as ready-made fertilizers. At the same time, in our opinion, it is necessary to increase the rates of export duties and that more needs to touch the export of minerals and to a lesser extent - finished fertilizers. The customs duties are advisable to set the level, due to their use, will ensure the equal benefit of the supply of fertilizers to the domestic market and for export, whereas today the latter has clear advantages. In general, it is possible to note that the Russian producers of mineral fertilizers is in exclusive and an advantage today with a huge stock of the appropriate natural resources and unused sowing lands, considerable potential of growth of agricultural production and opportunity to take an essential place in bioeconomy.

Therefore it is necessary to modernize urgently agro-industrial complex of the country with emphasis on an intensive way of its development.

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**J11517-010****Novosad V.A.****THE MODERN ISSUES OF ENERGY PRICING***Limited Liability Company "MAE" Kyiv, Horyva str.33 of.42*

*In this article I describe about pricing on the energy pricing on the energy in modern terms. I analyzed the current legislation of Ukraine and the European Union directives regarding these issues. Also the article contains proposals for improving this process in terms of the need to energy saving.*

*Key words: economy, energy tariffs, saving of energy.*

The old principles of tariff formation for energy provide for the establishment of the tariff as a cost plus profit for the unit of energy consumed. However, this tariff has three sides. On the one hand he must serve for the energy supplying organization to cover its costs. On the other hand - the tariff of the transmission of energy should be convenient to the user and respond to his or her abilities and needs. With Third side the tariffs of energy should serve for the objective of society. These tough new three-dimensional queries to tariffs for energy dictate new conditions of their formation. Now they require not only knowledge about the formation of economic costs and profits to ensure the activities of the industry, but also the marketing research of different consumer groups, in order to investigate the prospects of using these energies and the possibility of payment. We also need knowledge of state policy in the use of energy resources in the whole country.

Solving of problems in creation of the energy tariff cannot be based on the individual decision of separate persons.

Today's world is much more complicated and the process of formation of tariffs should be as a multidimensional task that takes into account all aspects of the process of their use.

The energy supplying organizations need the income to cover their expenses and to have it possible to develop. However, the direct formation of their revenues likes "as necessary" is no longer relevant. This process includes the requirement of additional costs and constraints on the increase of revenues. These are requirements to increase the revenue of the energy supplying organizations to solve the tasks of society, which has to worry about his future (climate change, environmental issues, conservation of fossil fuels). These are restrictions for the growth of the revenue part due to the inability to pay for rising energy tariffs.

In order to ensure the normal functioning of energy supplying companies need the "correct calculations" of costs and profit, which take into account all the peculiarities of the average tariff required for activity of these organization. These "correct calculations" should include calculations of optimal schemes of energy supply and anticipated activities of the power supplier to optimize energy consumption schemes, measures to reduce losses in production and transportation of energy to the consumer. Investors in energy efficiency should have not only guarantees of a return on their investment, but also responsibility for the result from these investments.

Today's calculations of energy tariffs involve consideration NERC of the

investment plan and entering in the tariff of the entire amount of the agreed rate of investment. This process is more like the creation of better conditions for preservation of the investor's money, rather than to stimulate the reduction of energy consumption.

The Directive 2012/ 27/ EU has many activities, which can lead to improved energy conservation, to improving the environment and the climate really. The most effective method is the conclusion of contracts with investors in which funded activities should bring effect in the form of energy saving to cover costs of their conduct. The terms of investment should include calculation of the economic effects of these investments and to assume repayment due to these economic effects, at least partially.

Also the same Directive has proposals on the payment in shares and investment units, on the value created by new fixed assets due to these investments. This form of settlement with the investor does not increase the revenue part of the energy supplying organization.

If the needed revenues of the energy supplying organization will be generated by experienced professionals who understand not only how to calculate the costs in accordance with The provisions of Accounting , then it will be possible can find a lot of new forms of investment in the energy supply without increasing tariffs. This is necessary now, especially in Ukraine, where the loss of energy are huge but remarkable energy saving measures can bring more energy savings than the direct disconnection of consumers from the benefits of civilization.

This is transformation of the boilers into the CHP (or in Kyiv- return to activity as the CHP CHP-2 and CHP-3), rationalization of energy supply schemes and the transition of irrational schemes of energy supplies to individual energy supply and dissemination of experience of advanced countries in the using of unconventional, but ecologically cleaner fuels, and many other activities that will give the opportunity to express themselves for professional engineers. Developing of a scheme of payments for the proposals reducing the consumption of energy in the process of extraction, processing, production and transportation of energy resources from the energy saving (performance- contracts), in the shares of energy companies, we get not only the good effect of the production, but also the equitable distribution of financial resources for the really talented engineers and economists. This is also the decision social issues and the formation of a competent national elite, and extension of the class of rich people who deserve respect.

If the first side used all available opportunities and the necessary level of income was developed, the simple division it into the required level of energy consumption will show only the average tariff for a particular territory. This tariff should not be a tariff for all consumers. It's like "the average temperature in the hospital room" and you need to treat it accordingly. This tariff cannot be considered as stimulating, since it does not stimulate, but only characterizes the needs and capabilities of the energy supplying organization.

There are too many conditions and too different consumer groups to apply the uniform tariff for all consumer groups. Here it is appropriate to begin to determine the cost of energy for each consumer.

Although this process is cumbersome, but it can provide capabilities for reducing their own costs and to create the new number of activities in order to improve and streamline of supply circuits of each individual consumer.

The second stage of the formation of tariffs for energy is the study of supply and demand in the amount of energy as well as the level of payment for these energy sources.

The current distribution of energy consumers into groups little reflects commonality of interests in energy consumption and possibilities of payment for the consumed energy. There are customers in the industry and consumers in the households which will be able to increase their consumption with rising prices, and there are consumers which will reduce their consumption and on low price categories.

Marketing research of many groups of consumers with the same consumption of energy and possibilities of payment and also the study of modern methods of accounting of consumed energy and forms of payment will open new opportunities to obtain the desired income without prejudice to the interests of the consumer.

Formation of groups of consumers should be determined according to several criteria that reflect the identical terms and the same opportunities of payment. Example of creating of groups of consumers with similar conditions is showed lower in tables 1 and 2. It does can be called "The matrix method of identifying of groups of consumers" This method involves several stages.

1-st stage. Determination of the major groups on technological criteria: the same level of transmission costs (creating user groups according to the amount of energy consumed and from the percentage of transmission losses); (Matrix 1. Table 1).

2nd stage. Creating of subgroups within the cells of the matrix 1, in accordance with economic criteria: on the same level of consumption for the same level of profitability (the creation of groups of consumers in accordance with the level of interest of the cost to pay for energy in the total income). (Matrix-2. Table 2).

**Table.1**

**Distribution of consumers in accordance with the technological criteria (Matrix 1)**

		Total consumption					
		1__	2._____	.....	.....	.....	N_____
% transmission losses	1_____	Gr.1.1	Gr.2.1	.....	.....	.....	.....
	2_____	Gr.1.2	Gr.2.2	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....
	N_____	.....	.....	.....	.....	.....	Gr.N.N

The list of customers Gr.1.1:

.....

The list of customers Gr.N.N:

**Table.2**

**Distribution of consumers within the one group in accordance with economic criteria  
(Example of distribution in the group of consumers 1.1. - Matrix 2)**

		Distribution in gr.1.1 of consumers in terms of the annual income					
		A_____	B_____	.....	.....	.....	K_____
% of payment for energy in the total income	A_____	Gr.A.A.	Gr.B.A.	.....	.....	.....	.....
	B_____	Gr.A.B.	Gr.B.B.	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....
	L_____	.....	.....	.....	.....	.....	Gr.K.L.

The list of customers Gr.1.1. A.A.:

.....

The list of customers Gr. 1.1. K.L.

Thus, the each group of users (e.g. Gr.1.1.A.A.) will have approximately the same level of energy consumption, the same level of loss, the same level of annual income and the same level of costs for energy in the structure of their revenue. The identical approach in the determination of the tariff for energy consumption can be only for one group of consumers. Also the tariff for each subgroup may have the same profitability. Detailed studies of the each group of consumers will help to establish the possibility of rising or needing of establishment of social tariffs for separate consumer groups. These tariffs for each of groups of consumers reflect only possibilities of energy supply organization to meet the capabilities of the consumers. These tariffs can be named only like "base tariffs for each of the groups of consumers."

The third stage of the modern process of setting tariffs for energy is setting of different tariffs for different conditions of energy consumption, which may affect on consumers. They are set to encourage of consumers to improvement of the mode of consumption, to smoothing consumption schedules and to reducing energy consumption. Only these special forms of tariffs may be called "the stimulating tariff", because they provide a choice for the consumer in order to change their consumption and to reduce the total amount of payments.

EU Directives on energy saving recommended to use of different methods of establishing of stimulating tariffs. Considering the recommendations of the EU Directives and experience we can recommend within the limits of the basic tariff:

- To establish different tariffs hourly, for different times of the day and seasons of the year;

- To establish the seemingly illogical but well stimulating to energy save tariffs depending from the amount of consumption ( however in this case one should not change the prices on the expiration of the year, as it exists now in the price of gas for households);

- To set tariffs those encourage using of modern methods of accounting of energy consumption;
- To set the different- rate- tariffs (2-rate tariffs, 3-rate tariffs), which may affect consumers to establish the optimal level of maximum demand indicators and other parameters that affect on the cost of energy;
- To establish allowances for the reliability or quality indicators;
- To establish preferential tariffs when applying additional innovative sources of supply;
- To establish other forms of bonuses or discounts on standard rates based on their actual impact on the cost of energy.

Modern economists have to make accurate forecasts of energy consumption for each of consumers groups as well as timely response to all changes to ensure balance interests between the Energy Company and customers. If the basic tariffs of each group should be reviewed only at a certain time, then setting of all forms of discounts and surcharges for basic tariffs should be done by companies depending on the current situation.

#### Conclusions:

Modern methods of energy prices play a crucial role in an effort of a civilized society to create the conditions for climate protection and to reduce the consumption of fossil energy resources. Skillful using of this difficult but valuable instrument can solve many problems standing before society. However, only a thorough approach of highly qualified specialists in the field of energy economics and the use of modern methods of accounting, calculation, and research in this field, are able to turn a simple accounting of costs and benefits in the remedy for solving of problems of entire states.

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**J11517-011****Vorob'eva N.V., Kozel I.V., Popova E.G.****OUTSOURCING IN THE JOINT ENTERPRISE IN THE WORLD  
MARKETS OF THE KNOWLEDGE-INTENSIVE GOODS***Stavropol State Agrarian University,  
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*Summary: in the work considers the essence and trends of outsourcing in joint enterprise. The types of companies using outsourcing services are listed.*

*Key words: outsourcing, joint enterprise, world market, knowledge-intensive goods.*

Outsourcing received a wide circulation in joint enterprise in the world market in recent years. This results from the fact that the international division of labor gives the greatest effect in the sphere of development and production of goods with a high share of a value added as exactly here the difference in compensation in the different states is especially high.

In the market of the knowledge-intensive goods to services firms acting as outsourcing asked:

- the companies which carry out a full cycle (or its most part) development and production of the knowledge-intensive goods (almost all large multinational corporations treat them);
- the companies which engaged in development of new goods;
- the companies that use other people's creations and having the advanced equipment and the latest technology, high technology involved in the production of goods under the trademark firms customers.

Under the terms of contracts for the international outsourcing customer transfers rights and manufacturing technology high-tech products to your partner - outsourcer, which ensures the production and sometimes marketing under the trademark of the company-customer. As a result of a wide circulation of this practice now a lot of modern electronic products are marketed under a highly authoritative trademarks of USA firms whose owners are not interested in the fact that the buyer knew the names of their original developers and manufacturers.

In the 90th years of the XX century and in the first decade of the XXI century in the market of outsourcing services new tendencies began to identify new trends:

1. The use of new types of services provided to customers high-tech products. In order to increase competitiveness in the market competition of new industrial countries - outsourcers South-East Asia, as well as Mexico, have launched a wide range of services in the production and marketing of high-tech equipment.

2. Expansion of control of firms over a chain "development – production - sale". New conditions of the competition demanded new steps from participants of market rivalry. To counter the competition of firms - service providers for the production of electronic components and parts, the former contractors began to lengthen controlled by them the value chain. They began to create their own centers to develop new products in addition to services for the production of components and parts. They used knowledge of application of new alloys and materials it is better, than their

clients and therefore could develop products which demand smaller costs of production. However, these firms often do not know the features of the demand end buyers or little knowledge of trends in fashion in the countries in which the company-customers, therefore they have less competitive advantages in designing of appearance of products or in design of functions and characteristics of products are located.

3. Development of innovative outsourcing. A new stage in the development of international outsourcing on the market of high technology products was the transfer of foreign partners not only assembly operations, but also the development of new products. Large American companies transmit on international outsourcing is most important for its activity - advanced research and innovation, to reduce the cost and reduce the time of release of new products.

4. As new tendency it is possible to consider also development of external expansion of firms of economically developed states for the purpose of fight not for sales markets, as earlier, during an era of rapid development of imperialism, and for occupation of the high-growth companies outsourcers capable to export production to other countries. Therefore the number of firms providing outsourcing services it is possible to find many firms of the USA and Japan.

The main consequences of restructuring of joint enterprise are connected with rendering of services of innovative outsourcing. High profitability of outsourcing operations attracted many USA companies, having rather known trademarks from the sphere of information technologies to create the centers of development of new products in the new industrial countries, for example on Taiwan.

As a result of the expanded use of international outsourcing on the development of new products, American firms with known trademarks have the opportunity to market products faster than before, which in turn does not reduce product life cycle. They can also reduce their Research and Development costs and to refocus them on key directions in the field of technology used. According to this strategy changes the company owning known trademarks, reduce the cost of Research and Development centers and increase their home abroad. They created and are planning to create Research and Development centers in China, India, Israel, Taiwan and other countries to use local talented people in countries with relatively cheap labor.

With the increasing demand for the development of new products for American firms that own the trademarks, there is a strong increase in demand for highly skilled workers especially in countries that have achieved great success in exports because of the use of low-skilled labor. Currently, a number of these countries are experiencing a shortage of skilled labor. Taiwan experiencing a shortage only about 10 thousand. of qualified engineers every year, despite the fact that this country has one of the highest number of college graduates in the sciences and technology. Marked shortage of skilled labor compelled Taiwanese firms to recruit professionals to conduct Research and Development of China.

Development of innovative outsourcing in the joint enterprise markets high technology products exposes the showed some discrepancy between the structure of demand and the structure of labor supply is the most important problem. Now low-skilled workers can hardly find a job in Taiwan.

The transfer of production to international outsourcing contracts in the new industrial countries remove from the agenda the old problem of "brain drain" in developing countries. With the development of innovative international operations outsourcing is expanding the use of foreign skilled workers. As a result, developing countries university graduates are working at the site, using the acquired knowledge.

Demands for success in the market competition made it necessary major changes in business and, consequently, a radical revision of established views on the principles of its organization. As a result in joint business the new business model which innovative mechanism is presented in the form of the multi-component circuitry of the international partnership based on the principles of outsourcing is gradually developed. According to this scheme, under uniform management from headquarters of major multinational (American, Western European or Japanese) companies now must be the work of hundreds of independent research centers, design institutes, pre-production, production plants and trading companies, scattered in different regions and continents of the globe. Applied to the computer industry, the formula for creating the perfect balance of quality and price of the device already provides consistent work of American technology, Taiwanese circuitry, Indian programmers, Korean chip manufacturers and Chinese collectors. The company economically developed countries are trying to actively introduce cheaper for them to develop, made outsourcers in their production.

Serious attention is paid to the company economically developed states use international outsourcing opportunities in Russia. Here it is possible identify two activities foreign, primarily American companies: the market of services in the field of information technology and market services in the field of oil production.

Actively expanding in foreign outsourcing practices of Russian companies. Thus, requirements of the market and development of the competition cause use of practice of outsourcing both by deliveries to a foreign market, and to the internal. Application of outsourcing promotes improvement of quality of the Russian production, more active involvement domestic the companies in the international division of labor, to increase of production efficiency in the industry and a services sector of our country.

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## ECONOMIC PRACTICABILITY AND FUTURE PROSPECTS OF “RZD” REBRANDING

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*Abstract.* The article analyzes theoretical and practical issues of rebranding as a mighty factor of the company's marketing renovation. In addition to great changes which took place in the ideology of “RZD” within last decade, rebranding still possesses some potential that can be beneficial for the development of the Holding.

*Key words:* brand, rebranding, a non-material asset, competitiveness, marketing strategy.

Having been established 10 years ago, Russian Railways Holding (JSC “RZD”) has managed to implement a number of important and innovative reforms which helped it to become a leader in the transport industry of the Russian Federation. It has proved its competitiveness on the world market of passenger and freight transportation and demonstrated the effectiveness of the unique technologies in social policy towards its employees.

The fact that excites constant respect towards the activity of this company is that “RZD” takes care not only of its revenues but of welfare of its employees as well as its positive social image. And a new brand occupies a significant place in these processes. Although a lot is done in this direction there are still some prospects which can be beneficial for the company. There are still some additional reserves of using a new brand of the company as its largest non-material asset and a mechanism of trust enhancing.

Though theoretical research of brand as a marketing technique belongs to a quite new field of economic problems, the first articles on using a brand in company's activity were published as far as in 1930-s. But in its modern meaning the term was applied only in a post-industrial society. A large contribution in the development of this term was made by economists and political scientists in 1950-s – 70-s: D. Bell, E. Toffler, M. Poster and others.

The term “brand” is believed to have originated from a Scandinavian word *brandr* which had been connected with a process of making a mark by burning on the skin of cattle or slaves. Even at that time the meaning was clear: the brand was applied only on the goods having high quality that could cost more thanks to its availability.

The American scientist F.Cotler wrote: “A brand is a name, a word, an expression, a sign, a symbol and a design or their combination aimed to denote the goods of the exact seller or a group of sellers in order to be distinguished from their competitors” [5, p.96].

A brand is the most important non-material asset of the company as it has its own value, separately from that of other goods and services.

Having examined the scientific works of Russian and foreign scientists on the problem under study [1; 2; 4; 5], we have singled out the following functions of the brand in the promotion of the company's efficiency:

- a brand is one of the ways of differentiating goods on the economic market;
- it is a method of providing additional functional and emotional advantages to

the produced goods;

- a mechanism of assisting a consumer to make a correct choice;
- a method helping a consumer to fix attention on the goods, thanks to emotional associations;
- a way to increase the goods' sale rate;
- it is an alternative to a price competition;
- it is the goods that can be sold separately and can give a significant benefit.

However the above mentioned functions are not exhaustible. The modern companies realize the role of the brand in enhancing the activity efficiency, because there are some additional functions which reflect complicated relations among buyers and sellers. For example, a special document "Ideology of JSC "RZD" Brand" states: "A brand is not only a logotype and a design, it is an idea and a world that stands behind it. A brand reflects a strategy of the company's development, concentrating it in a brief and easily recalling formulae. A brand is a combination of people's attitudes to the company, which have been formed in the process of their interactivity; it is a set of original and easily recalling visual, sound and other signs, which symbolize these attitudes for consumers and other target groups" [3].

For the first time the idea of "RZD" rebranding was pronounced in 2005. At that time it was met negatively, because people were against such an expensive project: "They are simply wasting money! They had better increase the employees' salary!"

The decision of "RZD" to start rebranding was courageous and innovative at that very time when restructuring of the company was being conducted. It was followed by the changes of property forms, redistribution of duties among the branches and subsidiaries.

On the other hand, this process was necessary because rebranding had become a visual reflection of those great changes that had been taking place.

Let's try to identify rebranding purposes and attempt to prove its actuality.

In its broad meaning rebranding is understood as a complex of activities directed towards the change of all branding or its components: company's name, a logotype, a visual presentation, an ideology, etc. When we mention rebranding we mean a change of the company's image in the consumers' conscience.

Usually a company starts rebranding when

- the initial brand was inadequately positioned;
- the market conditions have changed and it is impossible to use the existing brand in future;
- the existing brand is outdated, it loses the competition with other companies;
- the existing brand has been discredited due to a poor quality of goods and services;
- a company has new ambitious aims;
- new advertising technologies have appeared, including numerous electronic devices.

It should be noted that in the case of "RZD" the theoretical ideas fully coincide with the requirements of real life.

As a matter of fact a well-known old logotype of "RZD" "Wings and a steam train wheel" was used for a very long time and has a strong association with a Soviet Ministry of Railway Transport. The foreign partners do not have only positive attitude to its work and nice memories of common business.

Another reason sounds more than shocking: the old logotype almost completely coincides with that one which belonged to German Railways during the fascist period in

1940-s. Besides some other national railways, for example Romanian, have the same symbol. That is why a real necessity for radical changes of ‘RZD’ visual image became actual.

The Russians’ attitude to the Soviet Railways is also not unambiguous. On the one hand, we admire the heroic deeds of Russian railway employees during the construction of new railroads in far Siberian regions and during the Great Patriotic War. On the other hand, many of us remember that trains used to be many hours late, they were dusty, the linen was wet and the conductors were rude.

That is why in May 2007 at the International business-forum "1520" in Sochi “RZD” declared a start of the unprecedented campaign of rebranding. More than 173 (!) variants of new logotype were discussed. That one which was approved has some advantages over other variants: for example, it does not limit the business sphere of “RZD” only to railway transportation. It was designed by a Russian company “BBDO Branding” which is included into a huge advertising holding “Omnicom Group” and net “BBDO Worldwide” [7].

A new “RZD” brand is a complex of easily remembered and positively associated ideas which the consumers feel towards the “RZD” activity as well as a set of original and unique visual, sound and other signs directed on the target groups and clients.

Within several years ‘RZD’ Holding has become a market-oriented mighty company which strives to occupy a leading position on the Russian as well as international transportation market. Nowadays it is ready to suggest “Door to door” delivery of goods and freights, i.e. it has spread its activity to ports, customs, logistic companies. Today “RZD” is a multi-profiled Holding, as it comprises tourism, construction, telecommunication and medicine.

In order to be functional and to excite consumers’ emotional associations a brand is to be simple, easy to remember, often used and well-known among the consumers. In order to find out how well the consumers know a new “RZD” brand we have conducted a questioner among inhabitants of Rostov-on-Don and users of social network “V Kontakte”. We tried to choose people different in age, education, social status and professions. In total we questioned 144 people.

Answering the question: “Do you know about a rebranding of “RZD”?”, only 42% of respondents replied positively and added that they had read in the newspapers or heard on TV about it. But when we ask them to draw a new logotype, only 72% were able to do it, mentioning that they had seen it on the coaches at the railway stations. Those people who could not remember a new logotype do not use railway transport at all.

Our second question was: “What other components of rebranding except a logotype do you know?” Only 36% of people were able to answer it. The majority of them are railway employees or undergraduate students of Rostov State Transport University. Most commonly they mentioned a new uniform.

Almost all the respondents (86%) agreed that a change of the image played a positive role in the company’s marketing strategy.

After studying “RZD” documents and a number of articles [3; 6; 8] we made some conclusions about the results of rebranding:

1) A new brand has helped “RZD” to position itself as the most important national transportation company in Russia which contributes its economic development.

2) All activities connected with coaches painting, uniform change, introduction

of new advertisement slogans were made in a planned order that helped to minimize the budget of rebranding.

3) The logotypes for all 48 branches and subsidiaries as well as banks and logistic centres were made using a new “RZD” logotype.

4) The system of brand monitoring was created: its first level is The Board of Directors and a Government; the second level – The Brand Controlling Committee; the third level – the Department of Corporative Communications.

In the conclusion we can state that:

1) The rebranding activity of “RZD” has proved its necessity, actuality and economic practicability. But it took place not so long ago, so it has not penetrated into a conscience of consumers yet.

2) This activity should be prolonged especially in the sphere of high-speed trains, such as Lastochka and Sapsan.

3) The “RZD” employees (conductors, railway workers, etc.) should remember about the image of their company and be always polite, neatly dressed in a uniform, have a modern education, render high level service and try to fit great strivings of the company.

4) It is necessary to find new ways of spreading an idea of brand among different groups of population. In this aspect there are still some potential opportunities. In addition to its official site in the internet “RZD” should start some forums, publish advertisements in the social networks, conduct lotteries and promotion actions which will increase customer’s awareness of the company’s activity.

Special efforts should be taken to introduce the image of the company into children’s and teenagers’ conscience. A young generation of our citizens is to easily recognize the logo of “RZD”. For this purpose the cartoons and comics for children can be made, some souvenirs and free magazines about “RZD” achievements are to be given to the passengers during their trips.

We know that passengers usually spend some time in the halls of the railway stations, so they will be pleased to watch high technology advertisements and documentaries about new achievements, technologies and future prospects of “RZD” development.

5) There is one field more for spreading a new brand. “RZD” is being introducing requirements in the terms of competencies to its staff on different levels. Though the uniform and badges of rank were changed some years ago there is a possibility to enhance a significance of acquired competencies by introducing new arm badges of rank displaying the achievements of the employees.

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**Matugina E. G., Egorova A.Y., Palamarchuk A. V.**  
**TO THE QUESTION OF FORMING AND DEVELOPMENT OF**  
**ECOLOGICAL ENTREPRENEURSHIP**

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*Abstract. Height of pressure on the environment associated with the intensification of socio-economic development, makes finding ways to ensure the relevance dynamics of production both in terms of meeting the needs and maintain the quality of the habitat. We are talking about the formation and development of environmental business*

*Keywords: ecology, entrepreneurship, habitat*

The dynamism of modern society as a cause and a consequence of intensification of development of productive forces, causes the growth of anthropogenic pressure on the environment, requiring the identification of new approaches to the organization of society life hood. For example, cities in the world annually emit up to 3 billion. of solid waste, more than 500 billion. cubic yards of industrial and domestic waste water, about 1 billion tons of aerosols; they pollute and thermal effects observed at a distance of about 50 km. [1] This leads to the search for ways to maintain the conditions for the reproduction of society - such as the greening of production, the use of alternative energy sources, the development of new technology recycling, greening cities - creating green walls and hanging gardens, green roofs, etc.. Of course, mitigation actions negative impacts of the production can be implemented proactively, but because of the scale of environmental problems, the primary orientation of the enterprises on the current production and other reasons the creation of companies that specialize in providing benefits to facilitate greening the economy, seems the most appropriate.

This process involves actors at all levels. Thus, the need for household positioned as a habitat, including by choosing environmentally friendly products (60% of consumers prefer to buy Russian environmentally friendly products, even with their higher cost [2]). As a rule, companies are not interested in the greening of production, but in the presence of an effective system of incentives may be initiated by the implementation of appropriate measures, including to form the image of the company. For example, the results of the All-Russian competition of the National Environmental Award «EcoMir 2010» JSC «Tatneft» statuette awarded the «Crystal Biosphere» and winner's certificate «for contributions to environmentally sound and sustainable development of Russia». [3] The state creates the relevant legislation to enable the environmental component of productive activities (eg, Federal Law «On Environmental Protection», «On Environmental Impact Assessment»), organizes the monitoring of the environmental situation. Government regulations are the basis for the development of regional environmental legislation, taking into account the specific of the territory (the law of the Tomsk Region «On Ecological Expertise in the Tomsk region» is based on the provisions of the Constitution of the Russian Federation, the Federal Law «On Environmental Protection», etc.). The transponder

nature of environmental problems, their scale, the need for joint efforts is the involvement of the international community. For example, Russia, Belarus and Kazakhstan have become more closely in the field of ecology and environmental protection. For example, Russia, Belarus and Kazakhstan cooperate in creating Reserves (Protected Areas) - drafted Reserve «Altai». [4]

Thus creating the preconditions isolation efforts to identify ways to minimize the anthropogenic pressure on the environment. That narrow specialization, not inherent to companies «traditional» industries (talking about the absence of the need to simultaneously improve production «core» benefits and greening) achieves utilitarian purposes of managing and solving strategic problems at the state level. Formation and development of environmental business has a disturbing effect on:

- approach to resource allocation. For example, the company JSC «Gazprom» in 2013 on the greening of production allocated 5.5 billion rubles [5];

- conditions for access to the resources of economic agents of production. Thus, the Code of Administrative Offences punishable compliance with environmental requirements for spatial planning, zoning, territory planning, architectural design, construction, repair, reconstruction, commissioning, operation and decommissioning of buildings, structures and other capital construction projects (8.1c) [6];

- the structure of the national economy. Thus, the contribution of environmental businesses in the GDP of the «Big Eight» is estimated at 10 ... 24%. The market for environmental goods and services in the countries of Eastern Europe, including the CIS, is estimated at \$ 20 billion. US., The Czech Republic, Hungary and Bulgaria - more than 600 mln. Dollars. [7]

The variety of activities allows for the classification of ecological business on the following grounds:

- by the form of provided benefits - services, technology, equipment, etc. For example, annual sales of environmental products in the United States - about 37 billion. US., Japan - 30 billion. US., Germany - 20 billion. Dol., France - 10 billion. US. [8];

- on the subject party - a company, region, country. For example, the company «ServisMontazhIntegratsiya» produces automatic system based on computer technology to ensure optimal management of technological processes with a minimum output of harmful substances; in the Tambov region implemented a program of translation and municipal public portion of freight transport with gasoline and diesel fuel to gas; RF state program «Environment Protection for 2012-2020» [8, 9, 10];

- stiffness regulatory compliance - relevant, forward-looking. Thus, Russian refineries «Gazpromoil» a year before the government designated deadlines have mastered the production of fuel IY environmental class. [11]

The transition to an environmentally oriented development - the result of a deliberate policy to enable secure business competitiveness at national and supranational levels. The first step - the formation of regulatory and legislative framework. This can be considered as recognition of environmental concerns, as well as recognition of the need to resolve them. However, strict regulations must be supported and the motivational component. For example, in Germany the system of accelerated depreciation treatment facilities and equipment as well as equipment to

reduce the noise impact. [12] and significant is the information component that promotes excellence, promotes environmentally oriented company image. Company «Yves Rocher» committed itself to plant 50 million trees by supporting the UN program on greening the planet. [13] Inclusion of the named measures in structure of corporate strategy of subjects will promote formation of the new philosophy, focused on maintenance of competitiveness of business.

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**J11517-014****Viktoriya V. Pobirchenko****CLUSTER TECHNOLOGIES AS MEANS OF SOCIALIZATION OF REGIONAL ECONOMY***Taurida National V.I. Vernadsky University, Simferopol, Crimea*

Today, the key part of the transformation of the world economy system is a socialization of the economy, which is manifested in the social reorientation of production, humanization of labor and people's lives, alleviating social differentiation and the growing importance of the social sphere, balancing individualism with a strong sense of solidarity. The process of socialization of the economy leads to qualitative changes in the requirements system, structure of supply and demand, quality of life, conditions of human development [1].

Theories of social and economic development on the principles of cluster formed in 1950-60. under the then current economic theories of systemic transformation of capitalism associated with the comprehension of the human role as a factor of growth in conditions of imperfect competition. [2] They are based on the theory of popular capitalism (the theory of diffusion of ownership, managerial revolution theory, theory of revolution income); collective capitalism (A. Berle, G. Means); mixed economy (E. Hansen, J. M. Clark); welfare society (J. K. Galbraith, John. M. Clark); Social Partnership (Aron, J. Galbraith), and others that were significantly supplement the provisions of institutional theory.

In the 1980s. begin to appear new and improve existing theories of territorial development, which then transformed into the so-called theory of cluster development. Among researchers in the formalization of clusters theory necessary to allocate J. Bakattini, J. Harris, A. Preda, P. Krugman, M. Potter, M. Enright, Ronald Coase. Economic paradigm interpretation of the cluster is the definition of M. Porter: "Cluster or industry group - a group of geographically adjacent interconnected complexes and related organizations operating in a certain area and characterized by common activities and complementary to each other" [3]. Socio-humanitarian paradigm of this concept is the claim that the cluster - a social institution based on the harmonization of interests and cooperation of various structures, and not only on their competition, mergers and acquisitions, and compensate the increasing level of globalization in the conditions of uncertainty of social processes, creates a specific information space that informs economic agents with the new motivations, developing multidimensional economic space [4].

It should be noted that the concept of "clusters technologies " is much broader than the "clusters". Cluster technologies is a set of sequential procedures on the formation and development of clusters in the social sphere, including the design of the structure, establishment of communication, cooperation, strengthening linkages and cooperation between potential cluster members, promotion of competitive relations, flexible management of resources in joint projects. So, if the classical definition of "socialization" is the transfer of established patterns of behavior and ways of life to individuals in a society, the cluster technologies is an effective tool in this process.

The integrity of cluster structures in various social sectors supported by:

- unity of the strategic goals of social policy at the regional and local levels;
- cooperation and other forms of cooperation and partnership between organizations of different forms of ownership provides social services to the public, public authorities and local governments, non-profit, non-governmental organizations, academic and research institutions;
- Unified management of information and communication;
- system of personnel mobility specialists involved in the management bodies of the social sphere;
- a high degree of social solidarity between members of clusters caused by interrelated interests, constant communication and interaction [5].

Between the recognized advantages of cluster technologies socialization is mediated benefit as a intangible assets that not transferred directly to the balance but potentially relevant even greater impact than the direct benefits.

Advantages of these assets due to the following factors. At the core of cluster technology - the desire to promote the interests and needs (personal, group, corporate, collective, public) through the development of effective methods, techniques, effects on social objects, processes. Under the "interest group" Almond and Powell understood group of people united by special ties of mutual interest or benefit. [6].

Cluster - is a real social community, united on the basis of informal relations, cluster members have no legal fixed status, and they are combined on the basis of common interests and pragmatic use. Important in the application of cluster technologies in industrial activity is the level of individual possibilities (education, professional knowledge, psychological data, moral qualities, and others.).

Another social clustering factor of public relations is the psychology of domestic entrepreneurs, their faith in the possibility of a fair, open and mutually beneficial cooperation of all members of the cluster association for the overall economic benefits. For approval of such faith needs a clear and structured public policy.

The belief in the effectiveness of cluster technologies encourages the initiative of entrepreneurs, managers, and leaders of public organizations, educational institutions, which are capable of their authority, intelligence, organizational skills and knowledge to unite, to interest, and to show the clusters usefulness for the members and for the territories.

Social factors of cluster development of economy form a number of benefits for both production systems, as well as for the local society. The main social benefits should be considered as follows.

1. Increase of human competitiveness (inside the cluster we can see a competition factor of self-identification, socialization and self-realization of individuals).

2. Preservation of jobs.

3. Provision of social stability.

4. Increased the life quality.

5. Clustering of economy is a source of innovative development of the economy, which ensures the growth of enterprise competitiveness in the region and the country as a whole. At the same time, it helps to increase investment, not only in production but also in human capital.

6. The possibility of realization of labor potential through the network of small and medium enterprises. Creating a favorable business environment.

7. Improving the infrastructure of the region. Access to public information.

8. The capacity of local communities more efficiently and effectively solve the social problems at the local level. Cluster technologies is considered as the most optimal form of social dialogue provides the increased participation of citizens in the processes occurring in society.

9. Improving the quality of educational programs.

10. Preservation of traditional culture and crafts.

11. Formation of social motivations for creative work of scientists, designers, engineers and workers. Cluster - is generator of new skills and competencies, attitudes, which may lead to new unexpected ideas, creative design, products, services or business concepts [8].

12. Corporate social responsibility is manifested primarily in providing of social guarantees enterprise employees in the cluster.

An important problem of assessing advantages of cluster technologies in socio-economic development of territorial systems is the development and use of outcome indicators. The most widely used today: quality of life, SWOT-analysis of clusters development, the level of socio-economic development of the region, the level of efficiency in the use of socio-economic potential of the region, etc.

The main forms of joint activities of cluster members must be: the implementation of socially oriented projects using competitive mechanisms, public-private and social partnership; exchange of experience in the application of management techniques; common training programs; collective use of assets (buildings, structures, information and analytical systems); joint research funding social problems.

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**J11517-015**

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**VENTURE CAPITAL AS AN ALTERNATIVE SOURCE OF  
INNOVATION FUNDING**

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*Abstract. This article explores the sources of financial support for innovation activities in Ukraine and highlights the main principles of its effectiveness. The condition of financing innovative development in Ukraine. We consider venture capital as an alternative source of financing innovations highlighted features of venture capital. Directions activation of venture financing innovative development in Ukraine.*

*Key words: financial support, innovation financing, Venture, venture capital, funding innovation.*

International experience demonstrates the important role of innovative entrepreneurship in the transformation of the economic mechanism, increasing the intensity of its restructuring, where the dominant development should be the effective use of innovative potential. It is clear that in today's innovation activity is one of the most important factors of economic development and the development of innovation is a major prerequisite for the competitiveness of the economy. The integration course of Ukraine to the European Union requires the formation of highly developed economies based on the latest achievements in science, technology, economics and other fields. Realization of this goal requires the involvement of significant financial resources and finding alternative sources of investment.

Despite the fact that aspects of the innovation reflected in a number of legal documents (Law of Ukraine "On Scientific and Scientific-Technical Activities", "On Innovation Activity", "On priority directions of innovative activity", "On Collective Investment Institutions", "on Financial Leasing ", " On securities and the Stock market ", in the rules of civil, commercial, customs and tax codes), but as of 01.01.14 g. only 16.8% of the enterprises were innovation active (13.2% - implemented innovations), and the share of innovative products in the total volume of industrial output is about 3.8% [1]. It should be noted that in the EU these indicators are at the level of 40-60%. The main obstacle to the implementation of innovative development is insufficient investments.

In a general sense, innovation financing provides capital and attract investment (investment) for implementation (realization) of a particular innovative project [2]. The most thorough definition, in our opinion, the concept of "financial support for innovation development" provides Kolodizyev A. M .:"Financial support for innovation capacity should be viewed as a system of financial relationships that operate through a set of legally binding forms and methods of creation, mobilization and utilization of funds of financial resources to support innovative development both at the enterprise level and at the level of the country" [3].

Basic principles of effective financial support innovative development are:

➤ organic unity of science, education and business in the emerging new type of

society based on knowledge;

➤ integrated approach to solving the problems of the financial support innovation;

➤ planovist, economic feasibility and effectiveness of research and application of their results;

➤ meet the needs of innovative economic development for financial resources;

➤ determine the adequacy of financial capacity (potential) innovative sustainable economic development;

➤ Monitoring of internal and external threats to the financial support innovative development in a corresponding stage of the fight against financial crises;

➤ efficiency and flexibility to respond to prevent the threat of destabilizing factors in existing capacity and others. [4].

According to the Law of Ukraine "On the innovation activity" [5] innovation in Ukraine is provided with funding from various sources:

1) state Budget of Ukraine;

2) local budgets and the budget of the Autonomous Republic of Crimea;

3) the own funds of specialized state and municipal innovative financial institutions;

4) own or borrowed funds of innovation;

5) money (investment) natural and legal persons;

6) other sources not prohibited by the legislation of Ukraine.

According to the State Statistics Committee of Ukraine [1] for 2009-2013. Total cost of financing scientific and technological projects in Ukraine grew, however, starting in 2012 their volume significantly decreased (Table 1).

**Table 1.**

**Sources of funding for innovation activities in Ukraine, [1]**

Year	The total cost of	Including the funds:			
		own	budget	foreign investors	other sources
		mln. UAH			
<b>2009</b>	7949,9	5169,4	127,0	1512,9	1140,6
<b>2010</b>	8045,5	4775,2	87,0	2411,4	771,9
<b>2011</b>	14333,9	7585,6	149,2	56,9	6542,2
<b>2012</b>	11480,6	7335,9	224,3	994,8	2925,6
<b>2013</b>	9562,6	6973,4	24,7	1253,2	1311,3
<b>Deviation 2013/2009, %</b>	<b>+ 16,8%</b>	<b>+ 25,8%</b>	<b>- 80,55%</b>	<b>- 17,2%</b>	<b>+ 13,0%</b>

The structure of sources of financing innovation is the key funds of enterprises and organizations, whose share in the total volume is consistently about 60-70% (in 2013 - 72.9%). Using its own resources reduces the risk of insolvency and bankruptcy and, thus, the management kept entirely in the hands of its owners. However, their power is limited, do not allow to expand investment under favorable

market conditions.

It should be noted a sharp drop in the volume of attracted foreign investment in innovation activities in Ukraine in 2011 of 2,411 million UAH (in 2010) to 56,9 million UAH, almost 42 times. In 2013 the volume of investments in innovation activities amounted to \$ 1.2 bln. Which is almost twice less than in 2010 [1]. The main factor hindering foreign investment in Ukraine is a poor investment climate, making Ukrainian enterprises unattractive to foreign investors.

Thus, the main source of funding for innovation in Ukraine in recent years are own funds, whose share accounts for almost 73% of total spending on innovation. The State also participated in the financing of innovation, including local budgets amounted in 2011 only 1%, and in 2013 - 0.26%.

It should be noted that the success of innovation activities largely established forms of organization and methods of financing. A measure of how new scientific developments and technology are fundamental components of national security, the developed countries are different possibilities to support and promote innovation. In this case, apply a variety of methods of financing innovation and range of activities from indirect support innovation.

Research experience in industrialized countries has shown that one of the important mechanisms for promotion of innovative activity in a market economy is the expansion of venture capital, forming a system of venture capital investment in the national economy.

Various aspects of the theory of modern capital and its new forms, which include venture capital, saw such prominent economists as Terrible J., Zinchenko A., Novikov V., Osetskyy V., Onyshko C., Pikulina N. and others.

Most affordable alternative source of investment resources in innovation may be venture capital funds. Today in Ukraine registered 636 venture funds, all of them created by foreign capital, but dealing with financing largely traditional projects or small food innovation. This indicates a lack of incentives for them to invest in innovative projects with a high level of risk.

It should be stressed that the Government and Parliament of Ukraine can not wait problem of transition to an innovative model of development to the time resolution of the main political and macro-economic contradictions. After the loss of priority on the global market in the development, manufacture and marketing of high-tech products, delays and significant achievements in political and economic life of Ukraine in the right direction, making the prospects for the development of innovation increasingly problematic.

Venture (risk) capital - a new way to invest large companies, banks, insurance, pension and other funds in stocks of small innovative firms with significant growth potential and implement innovative projects with high risk [6].

The main features of venture capital include:

- organic connection with the financial and human capital;
- risky nature;
- the scope of its existence serves innovative, scientific and technical activities.

Obligatory condition of venture capital investment is part of the investor in the management of innovative firms and profit from the sale of its shares on the Stock

Exchange. Venture capital enhances the creation and development of new products, accelerate innovation processes and increases the scientific and technological level of production, creates a competitive environment in the field of science and scientific services. It is part of financial capital, which is formed by debt and equity capital and aimed at financing innovation process mainly in the part, which produces knowledge. Venture capital risk associated with the implementation of projects and ensures the value of the product of innovative venture capital firms [7].

Funding innovative projects through venture capital actively used in developed countries, where venture capital firms providing funds as well as banks. Funds invested in Venture without financial security without warranty, the risk and the owners of capital. But for a positive result Venture receives a large income and multiply their investment returns.

Economists estimate that 15% of the capital invested in the project, it lost 25% of risky firms have suffered for a longer time than expected, 30% make a small profit, and 30% within a few years, many overlap all the profit on investment [8].

Venture capital can be formed at the expense of the formal and informal sectors. The formal sector include: funds or venture capital firm bringing together resources of different investors (pension funds, corporations, charities, private individuals). The informal sector include: individuals who invest directly in new and growing firms, these investors are called "business angels" or "informal investors".

As an example, the formal sector can lead the company Andreessen Horowitz. Andreessen Horowitz - a venture fund, which was founded by Mark and Ben Horowitz Andreessenom. The company's headquarters is in Menlo Park, California. Venture Fund was established in June 2009 with initial funding of \$ 300 million [8]. The company has attracted \$ 2.7 billion since inception. The company quickly gained a place among the participants in almost every new project in the field of high technology, and today its portfolio of over 90 companies, there are also the most "hot" - Facebook, Twitter, Pinterest, Airbnb, Forsquare. Among the objects of investments - Groupon, Zynga, Instagram and Skype - thanks to this agreement, the amount of investment which amounted to \$ 50 million, company acquired fame and brought in 4 times more money after Microsoft bought Skype for \$ 8.5 billion two years ago. The earliest its investors Andreessen Horowitz has turned almost all \$300 million involved in the initial round of venture financing (mainly term participation of - 7-10 years), and the rest still make a profit.

Venture capital has played a significant role in the realization of the most important innovations of the late twentieth century. Related to microprocessor technology, personal computers, internet, genetic engineering and so on. This happened capital formation of such well-known companies today high technology business as «Microsoft», «Apple», «Compaq» and many others. As for Ukrainian business venture, it is now just trying to catch up with the country where the business venture has long been used as a complete mechanism for investment in the national economy. The first venture capital fund in the country became Fund "Ukraine", created in 1992. Among the companies that have successfully used venture capital firm "AVK", "Slobozhanska building ceramics", "Rose-Express".

In 1994 work began Venture Fund Western Nis Enterprise Fund. With capitalization of \$150 million that were selected by the US Government for the development of agriculture, food processing, manufacturing materials. In 2005, there is a venture capital fund DFJ Nexus, presented by Draper Fisher Jurvetson. Also, will act Black Sea Fund, Euroventures Ukraine and others. In May 1998, the Ukrainian Association of Investment Business has established contacts with the European venture capital association (European Venture Capital Association), on a proposal which was opened section of venture capital, whose main objective was to encourage the development of venture capital investment in our country. Subsequently, the ranks of the European Association of risk capital (European Venture Capital Association) entered several domestic asset management companies. The adoption of the Law of Ukraine "On Collective Investment Institutions (Unit and Corporate Investment Funds)» N 2299-III on 3/15/01. an important step in the development domestic industry collective investment. This law facilitated the process of administration and Ukrainian legislation closer to the standards of developed countries. But this law is flawed and in need of legal support for change. Another law of Ukraine "On the innovation activity" does not consider venture capital as a source of innovation financing.

In general, the development of venture capital funds in Ukraine can be divided into two phases, according to the emergence of venture capital funds Ukrainian origin. The first phase covers the years 1992-2001., Characterized by the creation and functioning in Ukraine seven venture capital funds through foreign investment. For the period before 2004. total investments of these funds amounted to more than \$127.5 million in more than 106 companies. However, the direction of investments differ from traditional venture funds towards less risky and traditional industries.

The second stage in the development of venture capital funds in Ukraine began in 2001., After the adoption of the Law of Ukraine "On Collective Investment Institutions (Unit and Corporate Investment Funds)" and continues to the present. Its main characteristic is the creation of venture capital funds resident in Ukraine. Thus, according to Ukrainian Association of Investment Business in the 2004-2010 biennium. Number of venture capital funds increased 13.9 times, and the value of the net assets of 63.1 times the growth rate of these indicators slowed down more than 2-fold over the period, the largest slowdown observed after the global financial crisis in 2008 [9].

However, most of the domestic venture capital funds will not perform its economic functions as an instrument of financial-industrial groups with redistribution of cash flow and tax optimization. Despite this, there are prospects of traditional venture funds in Ukraine under conditions of mitigating factors constraining, especially with the assistance of the state.

Today in Ukraine increase capitalization of venture funds does not adequately increase investments in innovative sectors. This is due to the fact that venture capital funds do not want to fulfill their purpose - to raise funds for the development of innovation, and are used to the legal tax optimization. According to research, in contrast to the classical foreign venture capital funds, venture capital funds Ukrainian interested in realization of investment projects the average risk of the transactions of

financial assets and real estate.

In our opinion, to solve the problems associated with the formation and activation of venture financing innovation in Ukraine using the following measures:

- creation of favorable conditions (mainly macroeconomic stability) to attract venture capital from abroad;
- creation of public venture capital fund for innovative projects;
- creation of conditions for the intensification of innovation processes;
- the processing of the current economic and regulatory framework and more.

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**INTANGIBLE ASSETS INFLUENCE ON THE EFFICIENCY AND  
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*Abstract. The article focuses on the ways effective intangible assets management helps the leading food retailers derive ancillary competitive advantages. As a result, we have formulated characteristic features of formation of Russian retailers competitive advantages when using intangible assets in the process of operating activities, in franchising, as well as in the intangible assets accounting policy and management of the market value of the business. The findings of this research can be employed by retailers in actual practice of intangible assets management to achieve and maintain a high level of competitiveness.*

*Keywords: competitive advantage, competitiveness, efficiency, intangible assets, retail.*

*Introduction.* Russian retail trade at its modern stage of development is distinguished by a high level of competition [1, 2]. Admission into WTO, active growth of both domestic and foreign retail companies will facilitate more intensified competitive struggle. As things currently stand, creating of sustainable competitive advantages becomes a sine qua non condition for commercial success of any business engaged in retail trading.

Presently, retailers compete primarily in location of stores, pricing, quality, assortment and service, i.e. conventional factors that can be quite quickly replicated. Modern retail development trends require new instruments that are more effective. At the stage, intangible assets (IA) management seem to be the most promising source of ancillary competitive advantages for retailers.

In this article we will inquire into the ways effective use of IA helps retailing ancillary competitive advantages to emerge through the example of leading Russian food retailers Magnit and X5 Retail Group. For the purposes of the work we use materials accessible at official web-sites of the companies (annual reports, presentations, etc.) and other publicly available online information.

*Results.* Absolute book value of IA and share of IA in X5 Retail Group's assets is substantially higher than in those of Magnit, with both the indicators of the former, however, tending to decrease. Volume and share of IA in property of Magnit, on the contrary, show an upward trend. IA balance value growth brings about the following advantages: higher total balance sheet value of the company and, consequently, enhanced investment potential; growth of net asset value which in its turn is indicator of company financial sustainability; growth of depreciation fund of the organization resulting in substitution of IA with real monetary funds; lower profits tax due to IA depreciation. On the other hand, we should keep in mind that recording a higher value of IA may bear both positively and negatively (balance structure degradation, current liquidity ratio deterioration, and aggregate capital turnover slowdown, etc.) upon operation of companies and thus shall not be their ultimate goal.

Magnit's IAs are represented by licenses, lease rights, software, trademarks and other IAs, with the value of each separate type of assets increasing over time. Software is the permanent leader in absolute value and, correspondingly, in share in the aggregate of Magnit's IAs. Software facilitates the labor productivity growth, enables the company to increase the quality of services and cut expense by automation of certain processes. X5 Retail Group's IAs include brand and private labels, franchising agreements, lease rights, software, etc. The largest influence on the amount and dynamics of IAs is made by brand and private labels that constitute more than half of the retailer's aggregate IA. Presently, brand is one of irreplaceable competitive advantages, as it appeals to customer on emotional level, guaranteeing quality of services and thus spurring demand and reducing costs. Private label's afford a differentiation opportunity, provide full control over pricing process, help lower promotion expenses, enhance customer loyalty etc., which is sure to have a positive influence on competitiveness of the company. Besides, as opposed to Magnit, X5 Retail Group holds franchise agreements that represent right to additional profits in the form of royalty.

Magnit's IA return and profitability indicators are considerably higher than those of X5 Retail Group. Therefore, IA value unit of Magnit correspond to larger sales and profits volumes, which sets the retailer apart from the rival company. At the same time dynamic analysis of IA in its correlation with key financial results shows that Magnit's IAs growth rate usually exceeds that of its turnover and revenue, resulting in reduction of their return and profitability. On the whole, X5 Retail Group is distinguished by increase in turnover and net profits growth rates over growth rates of IA average values, which can be seen as a positive trend in terms of their effectiveness.

Both capitalization and ratio of capitalization to net asset value of Magnit stand head and shoulders above X5 Retail Group's market figures. In addition, Magnit is the only Russian retailer that is included into Brand Finance Global 500 [3]. Higher market value and positive expert appraisal of Magnit bias for better business reputation, creditworthiness and investment potential of the company, thus providing ancillary advantages over its competitors.

X5 Retail Group is considered to be the first Russian retailer to include private label goods in its assortment (in 2001), while Magnit started to develop private label as early as in 2002. At present, X5 Retail Group sell about 2000 private label commodity items, Magnit – 681, with private label share, however, in revenue of the companies in question differing insignificantly (15.1% – Magnit, 13% – X5 Retail Group). The companies reveal qualitative differences in private label management. For instance, the retailers take different approaches to market private label, offering private label commodities in different price brackets. Magnit primarily lures its customers by low cost (with acceptable quality), whereas X5 Retail Group offers private label goods in three tiers at once – low-range, mid-range (mainstream) and premium tier. Such contract is largely attributable to formats of the stores. Private label commodity sale in low price segment enables company to obtain economy of scale, while markup is stressed in high end (premium) segment. Apart from that, private label exclusive premiums may serve as an instrument to stimulate customer

retention, which can also be seen as ancillary competitive advantage.

At present, Magnit does not practice franchising, as management of the company has not taken risks of providing franchises to Russian entrepreneurs, instead preferring to control the whole operation on centralized basis. Advantage of such approach is no risk of the franchisor's business reputation deterioration as may be caused by franchisee's actions, as lower service quality or noncompliance with the company standards by a separate store tells adversely upon customer perception of the retailer as a whole. X5 Retail Group, to the contrary, promotes franchising actively, while being the only company in Russia to employ reverse franchising model, when franchisor enjoy full control over partner's stores and pays a portion of its revenue to franchisee (which helps minimize the risks of reputational losses). Besides, in 2012 Pyatyorochka store chain belonging to X5 Retail Group won the nomination Franchisor 2012 in National Franchising Award "Golden Brand". Although revenue from franchise services and its share in total revenue of X5 Retail Group are insignificant at the present (less than 1%), active use of franchising serves as an efficient instrument to drive the business forward.

*Conclusion.* In this article we looked at the ways effective IA management helps the leading Russian food retailers – Magnit and X5 Retail Group – derive ancillary competitive advantages. The research revealed that IAs hold significant promise for enhancing of retail company competitiveness.

In summary, the use of IA and its benefits for retailers in Russia can be concluded as follows:

1) Various types of IA in operating activities allows the retailer increasing the labour productivity, reducing costs (including personnel cost), attracting and retaining customers by providing unique supply or a higher quality of service. The inability to reproduce the IA keeps the created advantages in the long run.

2) Private labels are now becoming one of the most promising IA for Russian retailers to create competitive advantages. Effective management of private label contributes to the optimization of assortment and price formation, imaging and reputation, it can serve as a tool for emotional involvement and increase customer loyalty, as well as the differentiation of the company. Special significance of private label for Russian retailers is their rather recent appearance in Russia and their beginning to develop.

3) An important use of IA in retail is franchising. Despite the recognized franchising benefits of business development, a specifics of the Russian market is the increased risk of deterioration of the franchisor business reputation by the fraud of the franchisees, which makes reverse franchising reasonable in Russia.

4) IA form a significant part of the company's capitalization. Higher business value helps improve its creditworthiness and investment attraction that certainly is for the retailer's most important competitive advantage.

5) The carrying value of IA, to be included in the accounting records of retailer, has an impact on its financial stability, liquidity, taxable base for income taxes, and amortization. The international as well as the Russian accounting standards suppose the management of IA in accounting policy of the organization, which can result in increased efficiency and competitiveness of the retailer.

Thus, we have formulated a general direction and specifics of IA application by retailers in Russia. Each of these directions requires further detailed study with a view to developing precise ways of creating additional competitive advantages for retailers accounting the specifics of the Russian market.

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**J11517-017**

**Khomyakov V.A., Kazanskaya A.Y., Kompaniets V.S.**  
**DYNAMICS AND TRENDS OF RUSSIAN CLOUD COMPUTING**  
**MARKET**

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*Abstract. This paper considers the market of cloud technologies, market segments and their structure, growth rates, as well as factors contributing to the cloud services market growth. On the basis of trends in both global and Russian cloud services markets, conclusion about the prospects of its development is made.*

*Key words: cloud computing market segments, statistics and trends of information services market.*

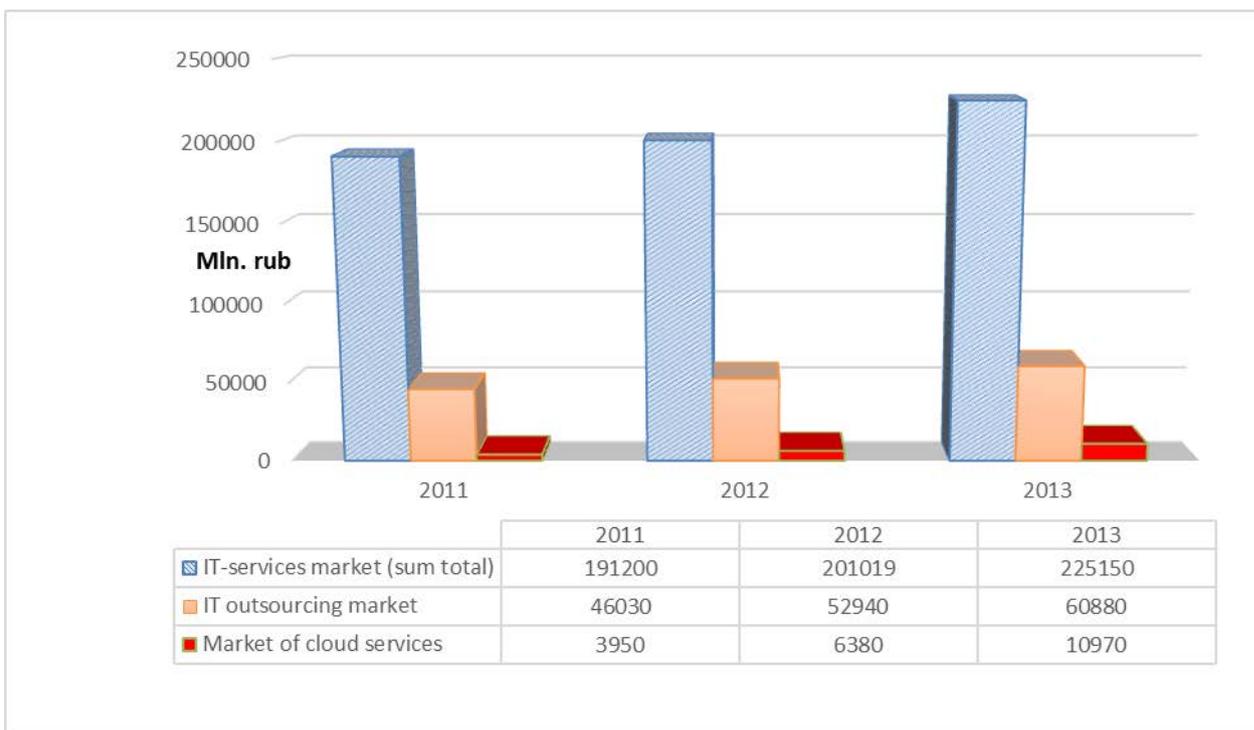
Cloud computing concept is one of the ways to present the information resources in the form of services, which general principle is calculating (data processing, plotting) on remote servers. Remote servers are configured to work together, allowing you to use the combined computing power. User requires a simple computing device (computer tablet, netbook), a broad and stable Internet connection to use the service. Work process takes place via a web browser or through a specialized client software. The advantages of cloud technologies use are

- reducing the infrastructure costs, thus reducing capital and operating costs because the cost of resources occurs only in fact already consumed resources (number of CPU time, disk space, the amount of consumed memory and speed of access to the site),

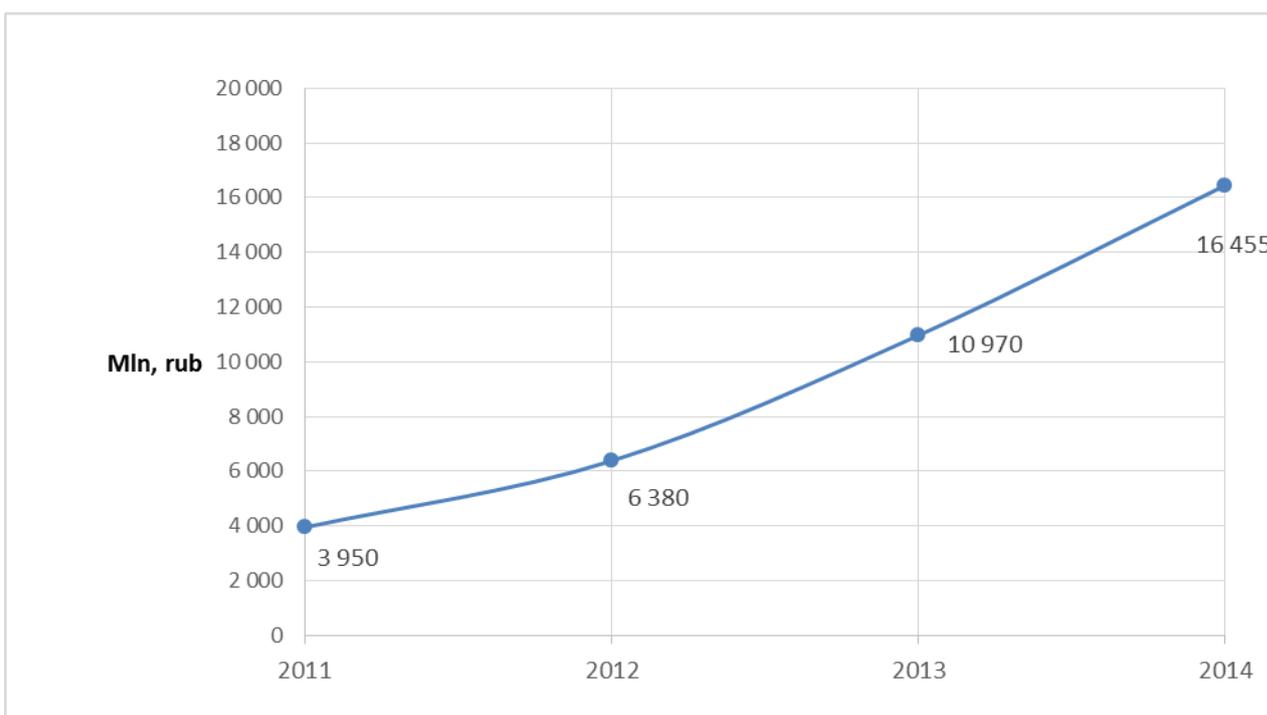
- reducing the costs for the purchase of server and network equipment, equipment ensures the continuity and stability of the workflow. These costs are borne by the provider of cloud-based services.

According to experts from industry analyst firm IDC, specialized in information technology market research, the main task of large companies by 2018 is a movement to cloud technology use. According to 2013, the growth rate of cloud services solutions in Russia is far ahead then a worldwide [1]. Analytical research of IDC and TAdviser (companies specialized in information technology market research) shows that in 2013 the cloud services demonstrate the maximum growth rate in the structure of the Russian market relative to other market segments, such as IT outsourcing market, IT hardware market and other IT-services, while the market share occupied by cloud information services is relatively small (fig. 1).

For 2013 the market of cloud services has reached 10.97 billion rubles, which is 50% higher than in 2012, when the market reached 6.38 billion rubles (fig. 2). In 2012 the Russian market volume of cloud services occupied 6% of the world market. According to IDC forecasts by the 2016 we can expect increasing spending on cloud services up to 100 billion dollars. Average annual growth rate of the market will be 26%, which is five times more then the growth rate of the information technology industry [2].



**Fig. 1. The structure of the Russian information services market (2011-2013)**



**Fig. 2. The cloud technologies market growth rate, million rubles.**

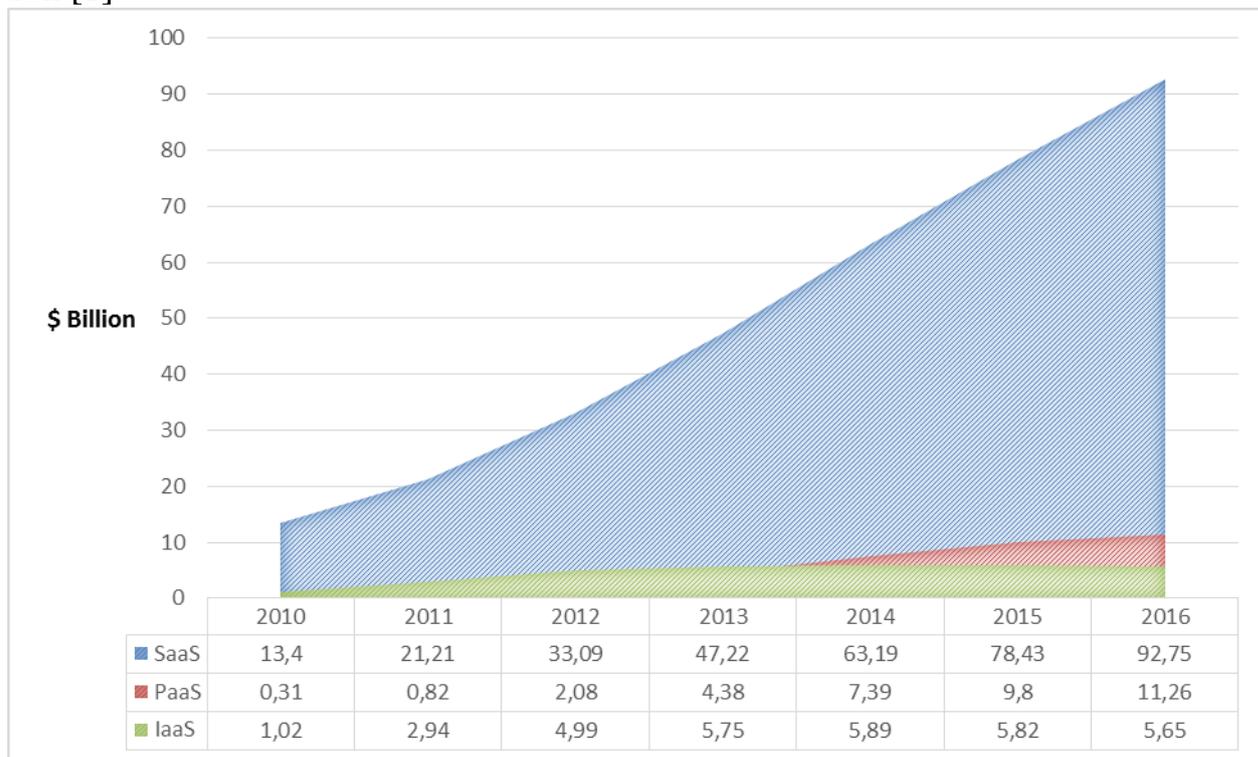
Cloud technologies have the following service models [3]:

“Software as a Service” (referred as SaaS) - the software sale and use business model, in which the supplier develops a web application and self-manages it, providing customers with an access to the software via the Internet. The main advantage of the SaaS model for service customer is the absence of costs associated with the equipment and the software installing, upgrading and support;

“Platform as a Service” (referred as PaaS) - the model of cloud computing, in which the user gets access to the use of information technology platforms: operating systems, database management systems, middleware, development tools and testing, that are placed at the cloud provider;

“Infrastructure as a Service” (referred as IaaS) - unlike the PaaS model offers the possibility of resources self-management; the consumer receives full access to the server capabilities.

Forrester Research analyst firm published a forecast of the cloud computing market segments in the world until 2020. Based on the results, the market size in 2020 will increase by \$200 billion up to \$241 billion. Forrester Research report marks the segment of SaaS in a whole structure of segments. This segment will continue steadily growth and by 2016 will reach 93 billion dollars (fig. 3). For comparison, its volume in 2011 was \$21 billion dollars. The sector PaaS is expected to surpass the segment IaaS in 2014, while in 2016 the market volume is estimated in 11.2 billion dollars. In 2014 the segment IaaS will enter the market peak, the market volume will be \$6 billion, then there will be a recession caused by the demand saturation [1].



**Fig. 3. Market forecast for cloud technologies solutions segments (billion dollars)**

As for the Russian market, the sector of SaaS shows an increase in the number of Russian developers in this sector. According to the newspaper CNews their revenue grew from 4.3 billion rubles in 2011 to 6 billion rubles in 2012, an increase in total revenues was 39.5% [4]. As for the sector PaaS, the share of the Russian market relative to the world is only 1%, the market volume was 5 billion dollars. For comparison the world market was 380 billion dollars [5]. The PaaS Cloud concept can be seen as a combination of platforms SaaS and IaaS. This platform suggests a

preset operating environment and software. Solutions provided by this technology are more suitable for software developers. Its disadvantage is the system work virtualization - the isolation from the server physical devices. That is inconvenient for the development of such types of software that requires an appeal to the physical address of the device server - it forces to make a choice in the direction of the IaaS concept. According to the research of Jason & Partners Consulting firm for the year 2012 Russian sector of the IaaS market increased by 226% - this dynamic happened due to the high demand and due to the wide transition of numerous companies to the cloud concept. This market segment is becoming increasingly popular in Russia, and by 2017, the growth rate will be 45%, and the market volume - 8 billion rubles [6].

Business Software Alliance (BSA) - software vendors association has put Russia on the 16th place among 24 countries in the ranking of cloud computing in February 2012. Russia is ahead of India, China and Brazil, which are rapidly developing markets. IDC experts suggest that in 2015 the Russian market will amount 1.2 billion dollars. Japan, Australia, Germany, USA and France are main market leaders in cloud computing. Between the leading countries and the rest there is a significant gap in readiness for transition to cloud computing. In addition, in the US, Japan and the European Union a powerful law framework has been created to support the cloud technologies growth and development. In this regard the rest countries have to perform a substantial work to enter the world market. Russia always has had a problem with the intellectual property rights enforcement. There are a number of gaps in the protection of copyright in the Russian legislation. There is also another factor that may hinder the development of cloud technologies in Russia: there is no charge to cloud services owners to pass the certification of Federal Service for Technical and Export Control of Russia (FSTEC) and Federal Security Service (FSS). It stops companies that operate personal data because of the absence of data storage security guarantees [1]. In turn, the state is interested in the protection of intellectual property owners. So a positive role can be played by the adoption of anti-piracy laws and amendments toughen copyright infringement. The global trend of transition to cloud-based solutions has a positive effect on the Russian cloud technologies market development. At the moment, we can say that the Russian market of cloud solutions is at the stage of rapid development - it is showed by the statistics regarding the world growth rate. The following factors can contribute to the accelerated development of the Russian cloud services market.

1. The development of market competition in the Russian cloud technologies market, the new companies emergence in the market.
2. The receipt of large orders.
3. FSTEC and FSS certification of cloud services will make them more attractive to customers; certification - a measure of customer data protection from intruders.
4. The emergence of new services in the cloud solutions market will allow to expand the range of clients interested in IT.
5. The improvement of the political situation caused by the crisis in Ukraine will increase the level of confidence among foreign customers.

Despite the difficulties in the copyright enforcement in Russia, measures are taken to protect intellectual property. The adoption of such measures shows

government's attention to the development of the information technology market as a whole, which in turn should positively impact on the cloud services market development.

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J11517-018

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## THE ACCOUNTING TREATMENT GOVERNMENT SUBSIDIES TO AGRICULTURAL ORGANIZATIONS: THE RUSSIAN AND INTERNATIONAL ACCOUNTING RULES

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*Abstract. The article presents the comparative characteristics of accounting regulatory framework of government subsidies on Russian accounting rules with the rules established by international financial reporting standards.*

*Keywords: accounting, IFRS, accounting policies, state subsidy.*

Today, against the backdrop of the current now import a lot of attention is given to long-term national economic policy in the sphere of agriculture.

As is known, a key industry for the Stavropol Territory is agriculture. It employs a fifth of the economically active population. Every year, the AIC generates about thirteen percent of the gross regional product. Since the beginning of 2014 in the province of implementing various agricultural nearly 115 billion rubles. This fifteen percent more than in 2013. Received 8.7 million. Tons of grain, including wheat - more than 6.9 million. Tons, of which nearly 83 per cent - food standards.

Certain progress has been achieved in animal husbandry. Increased livestock and poultry fowl. Against the background of the last year received more milk and meat. It is noteworthy that the intensive growth of farm animals and the volume of production is observed in the (peasant) farms in the province. The number of cattle in the sector has grown by almost a third. Equally increased milk yield, apparent gains and meat. All this was possible thanks to government support in the form of grants, as part of the departmental target programs for the creation and development of peasant (farmer) economy.

Over the past five years, the share of profitable enterprises in the agricultural sector has remained at 92 percent. As part of achieving the targets and implementation of activities identified by the decree of the President of the Russian Federation in the sphere of responsibility of the regional agribusiness - an increase of jobs and investment in fixed assets. Today in the region have an effective tool to achieve all of these indicators, it is - regional state program on the development of agriculture. Forming their own investment potential, activation of production, contribute to, inter alia, and government support measures.

The accounting treatment of state aid in the Russian legislation governed by the Regulation on accounting "Accounting of state aid" PBU 13/2000, approved by Order of the Russian Finance Ministry of 16.10.2000 № 92n, and guidelines on Accounting for Government Grants and other forms of state aid in the agricultural organizations, approved by Order of the Ministry of Agriculture of Russia from 02.02.2004 № 75. to implement accounting in accordance with international standards, according to the Order of the Russian Finance Ministry of 25.11.2011 № 160n apply IFRS (IAS) 20, "Accounting for Government grants and Disclosure of Government Assistance»,

(IAS) 41 "Agriculture".

Comparing existing today in the Russian regulatory framework of accounting subsidies to international standards, we can identify a number of differences:

- In the event that subsidies directly related to biological assets by which to determine fair value, it applies IFRS (IAS) 41 "Agriculture", for example, the acquisition of pedigree cattle, elite seeds. However, if the subsidy is used to pay interest on a loan or to purchase fixed assets, the legal value of gain provisions of IFRS (IAS) 20, "Accounting for Government Grants and Disclosure of Government Assistance". In Russian standards grants relating to the formation of biological assets are not allocated separately;

- The directions of generalization and grouping information, there are differences in the classification of subsidies. In the domestic registered in based on the identification of the object in terms of the direction of financing costs, current or capital. In international practice, the classification is carried out from a position of elements of financial statements: the income or assets. In addition, apart recorded conditionally irrecoverable loans.

This applies to biological assets subsidies are classified according to the availability of the obligation to perform certain business conditions: conditional and unconditional. In practice, the classification data are the basis of the information reflected in the accounting and reporting;

- Budget adopted for accounting purposes are recognized as targeted funding and the emergence of debt on these facilities (Sec. 5 PBU 13/2000). As the actual receipt of funds, corresponding amounts reduce debt and increase the account of the account funds, investments in fixed assets, etc. If budgets are recognized in the accounting records as of actual receipt of resources, with the emergence of targeted funding increases accounts accounting of funds, investments in fixed assets, etc. (p. 7 PBU 13/2000).

Information on the receipt and use of the trust fund is reflected in account 86 "targeted funding" and the balance of unused funds - on the account 98 "Deferred income". Subsequent write-off of state aid in compliance with all conditions is carried out using the account 91 "Other income and expenses".

In accordance with IFRS (IAS) 41 "Agriculture" may use two options depending on the availability of conditions:

1) is not burdened by any conditions a government grant shall be recognized as income when it becomes receivable.

2) if a state subsidy granted on certain conditions, the entity should recognize in its profit or loss when the liabilities are met before the state.

IFRS (IAS) 20, "Accounting for Government Grants and Disclosure of Government Assistance" just involves two methods of recognition:

1) The grant is accounted for as deferred income that is recognized as income on a systematic and rational basis over the useful life of the asset;

2) The subsidy is reflected by its subtraction from the book value of the asset.

The grant is recognized as income over the useful life of a depreciable asset by reducing the depreciation charge because of reducing the carrying value of the asset. These two methods are regarded as acceptable alternatives.

Grants related to income may be included in other income or deduction of subsidies related costs. If government subsidies related to income, the income statement may be presented:

- Separately or under a general heading (such as "Other income");
- Alternatively, they are deducted in cost of sales reported.

These methods are acceptable in reporting on subsidies related to income. Furthermore, it should disclose the impact of subsidies on any item of income or expense that require separate disclosure.

It should be remembered that if the agricultural organization uses a special tax regime (eg single agricultural tax), the recognition of the state aid will be implemented as the actual receipt of funds to the account.

The inclusion of subsidies in the real incomes of agricultural organizations in the national accounting does not allow to objectively evaluating the effectiveness of public investment. It is necessary to generate information about the real state of the accounts with the budget on subsidies.

Thus, the reflection of the information under IFRS is fundamentally different and require separate reflection data in the internal registers of the organization.

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**J11517-019****Kulikova N.N., Abulkasova A.V.****THE CHOICE OF OPTIMUM VARIANT OF DEPRECIATION OF  
FIXED ASSETS IN LLC «MC GENE-STROY»***Volgograd state University**Volgograd, University Avenue 100, 40062*

*Abstract. The paper describes a comparative analysis of methods of depreciation of fixed assets in LLC «MC Gene-Stroy». This list of factors which determine the acceptability of the method reducing balance using the acceleration factor.*

*Key words: regulatory asset accounting, depreciation methods, the way in proportion to the production volume, the acceleration factor, the factors influencing the choice of an optimal method of depreciation.*

Fixed assets occupy a significant place among the most important objects of accounting. The reform of the accounting harmonisation with international accounting standards require constant improvement of methods of accounting and depreciation of fixed assets. Each organization has a right to determine the best options and methods of accounting, accruals, valuation of fixed assets. We have conducted a comparative analysis of methods of depreciation on the example of LLC «MC Gene-Stroy» (PL.1.).

**Table 1****Comparison of methods of depreciation**

Accrual method	Year							
	1	2	3	4	5	6	7	8
Linear way	25 000	25 000	25 000	25 000	25 000	25 000	25 000	25 000
The reducing balance method	25 000	21 875	19 140	16 748	14 650	12 818	11 216	9 814
The sum of years	44 444	38 888	33 333	27 777	22 222	16 666	11 111	5 555
In proportion to the production volume	10 000	30 000	30 000	25 000	25 000	15 000	10 000	8 000

In accordance with accounting policies organization calculates depreciation the straight-line method for accounting and taxation. The disadvantage of this method lies in new novelist sum payments at the beginning and at the end of the depreciable period and that the period of operation of the facility exceeds its amortization period. It is natural to assume that in the initial period of operation of machines and equipment, their return is much higher, which should be taken into account in the methodology of accelerated depreciation.

The best way to choose is quite difficult, due to the fact that sometimes it is impossible to determine how much one or another main tool involved in the service delivery process. However, depreciation on certain property, plant and equipment (switching equipment) that are not directly involved in the production process, using the method reducing balance using the acceleration factor (e.g., 2) it would be more optimal.

This is due to the following factors:

1. Most of the cost of the active part of fixed assets are written off in the first years of operation, respectively, in this period significantly increases the share of depreciation in the cost structure of the enterprise along with the decrease in other cost items. Increases the cost of production of the enterprise as a whole.

2. It is known that the company values the terms of service (using accelerated methods of calculation of depreciation deductions), has the ability to relate to the cost of production greater depreciation amount, thereby reducing the taxable income of the enterprise. Naturally, it will have more financial resources to upgrade the manufacturing apparatus under the condition of targeted use of depreciation deductions.

3. The application of this method allows to have an impact not only on the level of physical and moral depreciation of fixed assets, technical level and production efficiency, but also on the amount of tax payments, and therefore the financial results of the company. The higher the amount of depreciation, consequently, higher tax protection or tax shield company.

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**J11517-020****Likhanos E.V.****ABOUT ENTREPRENEURIAL POTENTIAL DETERMINATION***Stavropol agrarian university, Stavropol, Zootekhnycheskye 12, 355029*

*Abstract. The paper discusses existing approaches to the definition of entrepreneurial potential. The author analyzes the terms "Enterprise" and "Potential", and then formulates an integrated definition of the studied concepts, attempts at a systematic approach to problem solving reasoning to the multilevel nature of the studied categories.*

*Key words: entrepreneurial potential, enterprising activity, capacity, resources, business.*

Entrepreneurial potential is a complex economic category, the study of which is extremely important from the point of view of valuation reserves entrepreneurship development. The latter in turn is the result of the realization of this potential source of economic growth, strengthening of the national economic system as a whole.

In the national economic literature unambiguous concepts of business potential has not been formulated yet, although many authors have shown to this topic of considerable interest. So, Stepanov A. and Ivanov N. considering the entrepreneurial potential of the organization, understand it as "the total capacity of the company to determine, to form and to meet the needs of consumers in goods and services in the process of optimal interaction with the environment and rational use of resources" [8]. According to Cheplyaeva I. entrepreneurial potential – economic category, which is a socially-determined set of capabilities and abilities for organization and implementation of the business activities of its carriers [9].

Tikhonov N. and Chepurenko A. determine entrepreneurial potential as "the totality of all individuals willing to engage in entrepreneurial activities" [10]. M. Grachev believes that "entrepreneurial potential is set orientation to achieve success, personal and collective responsibility, freedom of expression and creativity" [4].

Thus, entrepreneurial potential identified by the authors, first of all, with man as its carrier. In the interpretation of the considered concepts limited, as a rule, the structural level and the subject of a interdisciplinary research. However, the target concept, as we believe, is much wider. Indeed, the formation and realization of entrepreneurial potential is impossible without man as its bearer. However, people existing in the real socio-economic reality, can not realize their entrepreneurial skills without the appropriate educational level, resource, infrastructure, legal and other support – without adequate conditions. The establishment of the latter requires that the principle of consistency, based on the multilevel character of the national economy, and hence the concept of entrepreneurial potential multilevel. Therefore, in our opinion, the above definition need further determination. For this purpose we will analyze the concepts of "entrepreneurship" and "potential" and will formulate on this basis, an integrated definition of entrepreneurial capacity.

The essence and content, invest in the concept of "entrepreneurship" in the process of economic theory development has changed and managed. It is considered that A. Smith was one of those who first became involved in the business. However, R. Cantillon was seriously interested these problems for ten years before. He

formulated the thesis, according to which the difference between demand and supply on the market, the ability of individual actors in the market to buy goods cheaper and sell them more expensive. He called these market subjects "entrepreneurs", i.e., translated from French as "intermediaries".

In modern economic literature, clearly define the business there. As a rule, in most cases, the essence of it is replaced by the goal of entrepreneurial activity, i.e. profit maximization. This approach is enshrined in the modern Russian legislation (the law "On development of small and medium entrepreneurship in the Russian Federation, Civil code of the Russian Federation and others), according to which the business (or enterprise) is an independent undertaken at your own risk activities aimed at systematically profit from the use of property, sale of goods, performance of works or rendering of services by persons registered in this capacity in the manner prescribed by law.

However, Bagiev G. and Asaul A. believe that this definition cannot be considered complete. "The majority of practitioners and researchers focus on profit, considering it as the ultimate goal of entrepreneurship. However, entrepreneurship has as its ultimate goal is not so much profit as the continuity of the reproduction process associated with the reproduction of demand and satisfaction is constantly changing, constantly growing needs of an individual or social group, society as a whole. In this context, entrepreneurship is more correctly defined as a process of continuous search for changes in the needs of the end-consumer demand for products and services that address this need by organizing production, distribution, marketing, logistics, management, focused on the best innovations that bring maximum performance in every stage of the process of reproduction" [1].

Thus, the authors focus on the consumer and his needs, the satisfaction of which can bring a maximum profit. In our opinion, this definition corresponds to the most current socio-economic reality, reflecting the principle of social orientation of market relations. This approach is absolutely no denying the risk, creativity and innovation inherent in entrepreneurship.

As noted Stepanov A. and Ivanov N. unambiguous definition of the term "potential" does not exist (8). In General, the potential comes from the Latin *Potentialis* – which literally «could be» [11]. In various sources potential is defined as the power, the strength, [3] or as the "funds, stocks, sources available and can be mobilized, powered, used to achieve certain goals, the implementation of the plan; resolve any problems; the ability of the individual, society, state in a particular field" [2] (the sphere). In other words, the potential characteristic of real (not theoretical) possibilities, which currently can not be realized because of certain reasons and/or lack of appropriate conditions. For entrepreneurial activity in such conditions is an entrepreneurial environment. Recall that the latter should be understood as "prevailing in the country (region, municipality) favorable socio-economic, political, civil and legal situation that provides economic freedom capable citizens to be involved in business activities aimed at meeting the needs of all actors of the market economy" [5]. Hence, entrepreneurial environment, in our opinion, can be thought of as a reflection of the totality of the real conditions and opportunities for entrepreneurial activity that are already implemented today. In this sense, speaking

about the entrepreneurial potential, we are talking about currently available resources, infrastructure, and other software, its more effective use, real persons who have the appropriate personal characteristics, ready to become subjects of the challenged activity, but unable to do it due to financial and other barriers, unfavorable created conditions [6]. Hence, on the one hand, we can conclude that "entrepreneurial potential", it is logical to consider how the concept is similar to the concept of "business resources", which is defined as "the capacity for effective organization of economic resources for the implementation of economic activity". On the other hand, entrepreneurial potential in addition to the efficient use of resources also includes a set of capabilities that allow you to do this, but because this concept we consider a more complex and voluminous.

So, the analysis leads to the conclusion that entrepreneurial potential should be viewed as a multilevel system resources and the real possibilities of the economy that can be realized through the implementation of risk, innovation activity and organization of a conducive business environment to improve socio-economic efficiency of the business-sphere functioning.

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J11517-021

**Golubeva M.S., Lychagina T.A.**

**THE ANALYSIS OF THE FINANCIAL STATE OF COMPANY BY  
USING FUZZY SETS**

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*Abstract. In the work the analysis of the economic activity of JSC «Autodiesel» is conducted. To estimate the financial state of economic object it is necessary to calculate a number of different indicators and on their basis to make a conclusion about the general position of the object. In this paper the task of finding the integral index which characterizes the financial state of the company is solved with using fuzzy sets. The conclusions concerning the financial state of the company are made. The results of analysis by various methods are being compared, as well as the general conclusions about the using of fuzzy sets for such economic tasks are given.*

*Keywords: analysis of economic activities, financial state, the probability of bankruptcy, fuzzy sets.*

**Introduction.** A large number of indicators are being calculated and investigated for the analysis of an enterprise solvency. The complexity of this task is in the fact that it is necessary to construct from a set of local indicators one integrated indicator which characterizes a general state of the enterprise. At the moment there are many models which allow to receive an integrated indicator of bankruptcy probability risk of the enterprise. The most known of them is Altman's model. However it was developed in the USA in 1950– 1970 and it doesn't consider the features of a modern economic situation in Russia.

There are domestic models similar to Altman's model; among them are Zaytseva's model, Savitsky's model, Belikovy's model and others. All of them use various indicators in the models and various coefficients before these indicators. This situation can be explained by the fact that in Russia the institute of bankruptcy is poorly developed. Besides, there is no statistical information concerning the bankruptcy enterprises for statistically significant regression models. Thus, the bankruptcy probability analysis, in particular a choice of suitable model for the analysis is an important problem.

We often have to deal with non-numerical data, for example such as "low" – "high", "bad" – "good" during the assessment of enterprise activity. Many financial indicators have no accurate rationing and they strongly depend on a field of enterprise activity. In such cases the expert estimates often can be used. The classical models of bankruptcy probability can't work with such data. In this case it is possible to use fuzzy sets.

**Literature review.** The concept «fuzzy sets» was introduced by L. Zade in 1965. Then this theme was developed in the work "Introduction to the theory of fuzzy sets" by A. Coffman. In the field of fuzzy sets using for analysis of enterprise activity the Nedosekin's works are the most famous [5]. This approach can be used not only for the financial analysis, but also for the other tasks, for example, for an assessment of education quality from the point of view of educational services consumers [1, 3,

4, 6].

**Data and methods.** In this work the activity of Yaroslavl plant for engines production (JSC Avtodiesel) is analyzed. Earlier activity of this enterprise was already analyzed by us in other ways [2]. In this work the assessment for 2012 and 2013 years is made.

Let's involve the linguistic variable  $G$  "Risk of bankruptcy" which has five values  $G_1 - G_5$  corresponding to fuzzy subsets, namely, "very high bankruptcy risk", "high bankruptcy risk", "average bankruptcy risk", "low bankruptcy risk", "risk of bankruptcy is insignificant" [5].

As a set carrier of  $G$  the bankruptcy risk  $g$  is accepted. It is defined in the range from 0 to 1.

For any separate financial or administrative indicator of  $X_i$  the linguistic variable  $B_i$  "The indicator  $X_i$  level" is specified. This variable have five values  $B_{i1} - B_{i5}$  corresponding to fuzzy sets "very low level of an indicator", "low level of an indicator", "the average level of an indicator", "high level of an indicator", "very high level of an indicator" [5].

For the analysis of enterprise financial stability the following indicators are used. These are the autonomy coefficient ( $X_1$ ), the coefficient of security of current assets with own means ( $X_2$ ), the coefficients of intermediate and absolute liquidity ( $X_3, X_4$ ), turnover of all assets in annual calculation ( $X_5$ ) and profitability of all capital ( $X_6$ ).

**Table 1**

**The values of the financial indicators**

Indicator	Value $X_i$ in 2012	Value $X_i$ in 2013	Coefficient $\delta_i$
$X_1$	0,23	0,27	+1
$X_2$	-1,83	-1,78	+1
$X_3$	1,38	0,67	+1
$X_4$	0,01	0,07	+1
$X_5$	1,10	1,01	+1
$X_6$	0,01	-0,01	+1

The coefficients  $\delta_i$  can have values  $\{-1; +1\}$ . It depends on that how the growth of an indicator  $X_i$  influences the change of the complex indicator  $V$ .

We consider that all indicators have the equal importance, and then the weight of each indicator can be determined by the following:

$$p_i = \frac{1}{N} \tag{1}$$

For example, for  $N = 6$  in our analysis the weights are  $p_i = \frac{1}{6} \approx 0,167$ .

We construct the classification of  $g$  (degree of bankruptcy risk) as a criterion of splitting this set into fuzzy subsets (see Table 2) [5]:

**Table 2**

**The classification of bankruptcy risk**

Interval of $g$ values	Classification of parameter level	Degree of estimated confidence (membership function)
$0 \leq g \leq 0,15$	$G_5$	1
$0,15 \leq g \leq 0,25$	$G_5$	$\mu_5 = 10 \cdot (0,25 - g)$
	$G_4$	$1 - \mu_5 = \mu_4$
$0,25 \leq g \leq 0,35$	$G_4$	1
$0,35 \leq g \leq 0,45$	$G_4$	$\mu_4 = 10 \cdot (0,45 - g)$
	$G_3$	$1 - \mu_4 = \mu_3$
$0,45 \leq g \leq 0,55$	$G_3$	1
$0,55 \leq g \leq 0,65$	$G_3$	$\mu_3 = 10 \cdot (0,65 - g)$
	$G_2$	$1 - \mu_3 = \mu_2$
$0,65 \leq g \leq 0,75$	$G_2$	1
$0,75 \leq g \leq 0,85$	$G_2$	$\mu_2 = 10 \cdot (0,85 - g)$
	$G_1$	$1 - \mu_2 = \mu_1$
$0,85 \leq g \leq 1,0$	$G_1$	1

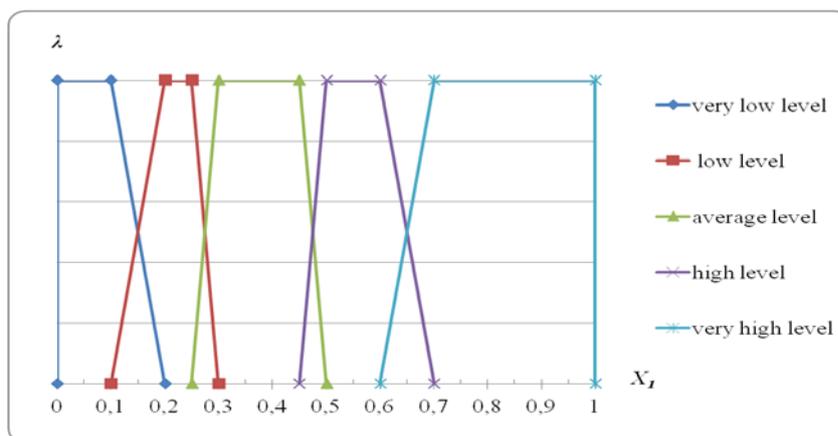
The classification of the current values  $x$  of indicator  $X$  constructed by experts for Russia specifics as criterion of splitting a full set of their values into fuzzy subsets of  $B$  [5] is presented in the Table 3. In the table cells there are the trapezoid numbers which characterize the corresponding membership functions.

**Table 3**

**The classification of the financial indicators**

Indicator	T-numbers $\{\gamma\}$ for values of the linguistic variable "The indicator level":				
	"very low"	"very low"	"very low"	"very low"	"very low"
$X_1$	(0,0,0.1,0.2)	(0.1,0.2,0.25,0.3)	(0.25,0.3,0.45,0.5)	(0.45,0.5,0.6,0.7)	(0.6,0.7,1,1)
$X_2$	( $-\infty, -1, 0.005, 0$ )	(-0.005,0,0.09,0.11)	(0.09,0.11,0.3,0.35)	(0.3,0.35,0.45,0.5)	(0.45,0.5,1,1)
$X_3$	(0,0,0.5,0.6)	(0.5,0.6,0.7,0.8)	(0.7,0.8,0.9,1)	(0.9,1,1.3,1.5)	(1.3,1.5, $\infty, \infty$ )
$X_4$	(0,0,0.02,0.03)	(0.02,0.03,0.08,0.1)	(0.08,0.1,0.3,0.35)	(0.3,0.35,0.5,0.6)	(0.5,0.6, $\infty, \infty$ )
$X_5$	(0,0,0.12,0.14)	(0.12,0.14,0.18,0.2)	(0.18,0.2,0.3,0.4)	(0.3,0.4,0.5,0.8)	(0.5,0.8, $\infty, \infty$ )
$X_6$	( $-\infty, -\infty, 0, 0$ )	(0,0,0.006,0.01)	(0.006,0.01,0.06,0.1)	(0.06,0.1,0.225,0.4)	(0.225,0.4, $\infty, \infty$ )

According to these data it is possible to construct membership function graphs.



**Fig. 1. The membership functions  $\lambda_{B_1-B_5}(X_i)$  of the linguistic variable "The level of autonomy coefficient".**

The membership functions can also be presented in the analytical form similar to classification of bankruptcy risk.

On the basis of the constructed membership functions and the values of the financial indicators the calculation of membership functions values  $\lambda_t(x_i^{2012,2013})$  for  $t = B_1, B_2, \dots, B_5$  and the identification of the indicators level for our example is carried out (see Table 4).

**Table 4**

**The identification of indicators  $X_i$  level**

$\lambda$ \ $X$	$\lambda_{B_1}(x_i^{2012})$	$\lambda_{B_2}(x_i^{2012})$	$\lambda_{B_3}(x_i^{2012})$	$\lambda_{B_4}(x_i^{2012})$	$\lambda_{B_5}(x_i^{2012})$
$X_1$	0	1	0	0	0
$X_2$	1	0	0	0	0
$X_3$	0	0	0	0,6	0,4
$X_4$	1	0	0	1	0
$X_5$	0	0	0	0	1
$X_6$	0	0	1	0	0

We calculate intermediate coefficients  $Y_t, t = B_1, B_2, \dots, B_5$  by the following formula [7]:

$$Y_t = \frac{\sum_{i=1}^N \delta_i p_i \lambda_t(x_i)}{\sum_{i=1}^N \delta_i p_i}, \tag{2}$$

where  $t$  points to the corresponding element of a term set of the linguistic variable  $B$  "The indicator  $X_i$  level",  $\delta_i$  is defined in the Table 1,  $\lambda_t(x_i)$  is from the Table 4.

Then we calculate the integrated indicator  $V$  by the following formula [7]:

$$V = Y_{B_1} \otimes \beta_{A_1} + Y_{B_2} \otimes \beta_{A_2} + Y_{B_3} \otimes \beta_{A_3} + Y_{B_4} \otimes \beta_{A_4} + Y_{B_5} \otimes \beta_{A_5}, \tag{3}$$

where the sign « $\otimes$ » means the operation of multiplication of a real number by

fuzzy number, the values  $Y_t, t = B_1, B_2, \dots, B_5$  are calculated by the formula (2), T-numbers  $\{\beta\}$  describe the membership functions of the linguistic variable  $G$  "The bankruptcy risk".

As a result we receive the integrated indicator  $V$  in the form of fuzzy number:

$$V_{2012} = (0.40416, 0.48736, 0.63235, 0.72557).$$

The transition from the fuzzy number to the real number suitable for the decision-maker is carried out by the method of the average maximum:

$$V = \tilde{\beta}(a_1, a_2, a_3, a_4) = \frac{a_2 + a_3}{2}. \tag{4}$$

$$V_{2012} = \frac{0.48736 + 0.63235}{2} = 0.559855.$$

This technique was applied for calculation of the integrated indicator  $V$  for 2013. Then we carry out the identification of the enterprise financial state. We do it by means of the Table 2 created earlier. With a certain degree of confidence we draw a conclusion about the enterprise financial stability. The result of the identification is presented in the Table 5.

**Table 5**

**The identification of the enterprise financial state**

Year	The value of $V$	The interval of $V$ values	The bankruptcy risk	The enterprise financial state	The degree of estimated confidence
2012	0,559855	$0.55 \leq V_{2012} \leq 0.65$	average	average	0,90145
			high	trouble	0,09855
2013	0,366565	$0.35 \leq V_{2013} \leq 0.45$	low	relative wellbeing	0,83435
			average	average	0,16565

**Results and discussion.** The bankruptcy risk of the enterprise «Avtodiesel» according to the results of 2012 can be recognized as average with the compliance level 0,90145 and as high with the compliance level 0,09855 (i.e. for 90,145% the linguistic variable «The enterprise financial state» belongs to the term set «The average quality state» and for 9,855% to the term set «The trouble state »).

According to the results of 2013 the enterprise bankruptcy risk can be recognized as low with the compliance level 0,83435 and as average with the compliance level 0,16565 (i.e. for 83,435% the linguistic variable «The enterprise financial state » belongs to the term set «The state of relative wellbeing» and for 16,565% to the term set «The state of average quality»). We conclude that the indicator 2013 improved in comparison with 2012. The financial state became safer and the bankruptcy risk became smaller. It should be noted that results of the analysis by means of this method don't contradict to the results of the classical analysis [2].

**Conclusion.** In this work the analysis of the financial state of the JSC

Avtodiesel enterprise for 2012 - 2013 by means of the fuzzy sets was made. For the analysis the six local financial indicators were calculated, some of them pointed to the stable enterprise financial state and others to the bankruptcy high risk.

By means of the fuzzy sets the integrated index of enterprise bankruptcy risk was received. On the basis of this indicator it is possible to draw a conclusion about the enterprise financial stability. Thus by means of the fuzzy sets it is quite convenient to analyze the enterprise financial state. This method is flexible. In depending on the purposes of the analysis it is possible to take different financial indicators, to determine their desirable values and the degree of importance for researcher.

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Reviewer: Doctor of Economics, Professor of Dubna International University

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## J11517-022

**Nataly V. Tchigirinskaya, Julius L. Tchigirinsky, Oleg C. Chesnokov**  
**SPREADSHEET AS TOOL FOR ECONOMETRIC MODELING**

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*Abstract: Proposed and substantiated the structure of multi-sheet workbook, spreadsheet, allowing agencies to submit calculations related to determination of the parameters of the regression models are three main specifications: linear, polynomial and exponential. Possibility of an estimation and comparison of modeling errors and validity of the obtained models.*

*Keywords: regression model, spreadsheet, multi-factor model, pair correlation.*

We consider in this paper, some possible applications spreadsheet for econometric modeling [1, 3], for example, functioning a “virtual” industrial group.

In table 1 presents data characterizing the specifics of several machine-building enterprises of different scale, but the similar nature of manufactured products.

Table 1 Source date

№	Net income	Turnover capital	Total capital employed	Number of employees, thousand people
	response function	Independent variables		
	y	$x_1$	$x_2$	$x_3$
1	5,5	53,1	27,1	151,0
2	2,4	18,8	11,2	82,3
3	3,0	35,3	16,4	103,0
4	4,2	71,9	32,5	225,4
5	2,4	31,5	12,5	102,3
6	3,3	36,7	14,3	105,0
7	1,8	13,8	6,5	49,1
8	2,4	64,8	22,7	50,4

You need to build a multivariate regression model to estimate the degree of influence of independent variables on the response function. As response functions selectable option “Net income”. On the value of the response function is affected by the independent parameters: “Turnover capital”, “Total capital employed”, “Number of employees”.

Select for analysis the three, most frequently discussed, specifications of the source model – linear (polynomial), power-law and exponential, and carry out the calculations of the parameters of these models.

Previously [2, 4], we considered a set of conditions that determine the possibility of a full-fledged analysis of qualitative (internal) patterns of the studied process and explained the necessity and rules standardization of all variables the greatness of the source model.

In addition to the standards ( $X_j$ ) independent factors and their corresponding regression ( $A_j$ ) in the normalized model implicitly through the regression coefficient

$A_0$ , – presents pseudo vector (risk factor)  $X_0$ . It is considered that pseudo vector  $X_0$  always takes the maximum possible value  $X_0 = 1$ .

For calculations, use only those features that are available in minimum installation configuration. E-book consists of several mandatory worksheets (table 2).

**Table 2 .**

**The E-book structure**

1. «Source data»	include the source data table, which $k$ rows (“experiments”) and $n$ columns (factors);
2. «Correlation»	calculation table for determining the coefficients of pair correlation
3. «Comparison of models»	results table
4. «Linear model»	calculation tables for definition of parameters and estimation of accuracy of the corresponding model. These three tables have the same structure and differ only by the rules of normalization.
5. «Power-law model»	
6. «Exponential model»	

The spreadsheets “Linear model”, “Power-law model”, “Exponential model” – calculation spreadsheets, – have the same structure and differ only by the rules of normalization. On the current worksheet (fig. 1) in cells  $B2:F4$  is an auxiliary table with intervals of variation for each group of sample values. The range  $B6:E14$  contains the plan of the experiment, which shows the normalized [2, 4] the values of factors and the response function.

Because the source data table and the table with the calculations are on worksheets in rows with the same numbers, you can use names for cell ranges as arguments to mathematical formulas. For example, in cells  $C7:C14$  calculation table has the formula “ $=2*LN(x_1/C\$3)/LN(C\$4/C\$3)-1$ ”, which refers to the range “ $x_1$ ” worksheet “source data”.

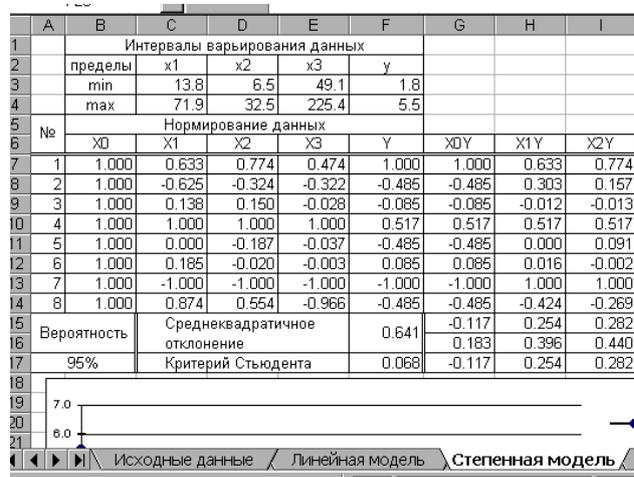
In cell  $F6:F14$  made a similar formula to calculate the normalized values of the objective function.

Cell  $G7:J14$  are used to perform computation when determining the regression coefficients. In the range of cells  $G15:J15$  stored formulas of the form “ $=SUM(G7:G14)/(G7:G14)$ ” to calculate the regression coefficients and “ $=ABS(G15)/STDEV(F7:F14)$ ” to assess the significance by T-Student test.

To select the values of regression coefficient after significance tests use the logical function “IF”. In cell  $G17:J17$  each calculation sheet is included in the formula: “ $=IF(G16>=\$F17,G15,0)$ ”.

Valued T-Student test, defined for a confidence probability is when the number of degrees of freedom  $n-1$  using the standard function “TINV”. Function recorded in cell  $F17$  in the form: “ $=TINV(A17,ACCOUNT(G15:J15)-1)$ ”, where  $A17$  address of the cell that contains the value of the confidence.

Substituting the derived regression coefficients (values from cells  $G17:J17$ ) in the normalized regression equation, we obtain the calculated normalized values of the



**Fig. 1 Fragment of spreadsheet**

response function. To do this, in cell K7:K14 enter the formula “=B7\*\$G\$15+C7\*\$H\$15+D7\*\$I\$15+E7\*\$J\$15”.

Then, we calculated, from normalizing ratios, values of the response function in real terms, and calculated these values in cells L7:L14:

– for exponential and power-law source models – with spreadsheet formula “=F\$3\*(F\$4/F\$3)^(0.5\*(K7+1))”;

– for polynomial source model – “=(0.5\*(K7+1))\*(F\$4-F\$3)+F\$3”.

To evaluate the simulation results on the magnitude of relative error (cells O7:O17), comparing the source values (M7:M14) and calculated values (L7:L14) of the target function. In a first approximation, the evaluation can be done “visually”, when comparing the graphs (fig. 2, 3, 4), constructed for each of the source models.

The graph shows the original and estimated values of the response function in real terms. The comparative graphs (fig. 2, 3, 4) abscissa shows pending the number of table rows of the original data (table 1). This is due, firstly, with impossibility of building the multidimensional diagrams and charts in spreadsheets.

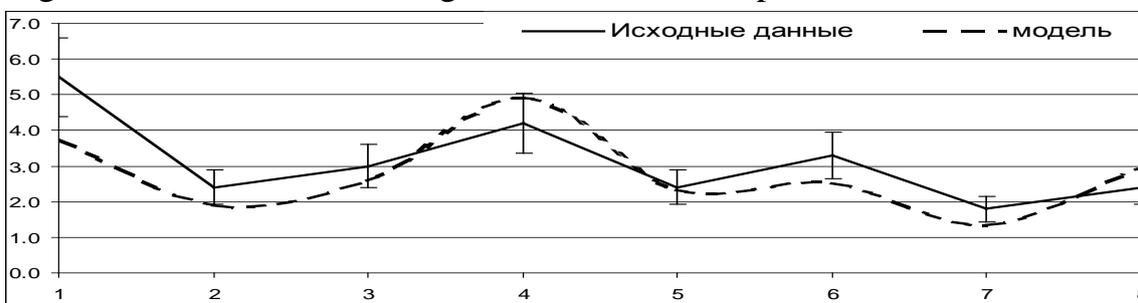


Fig. 2 Polynomial model

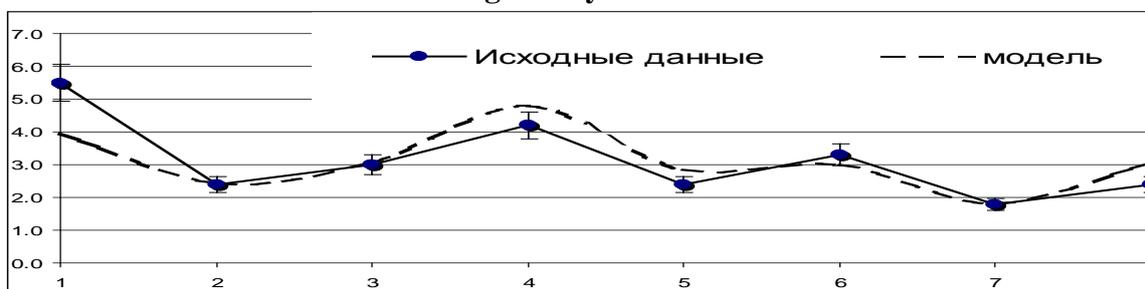


Fig. 3 Power-law model

In addition, direct visualization of the results of the multivariate modeling complex enough for the number of factors for more than three build graphical representation is possible only in the form of flat sections of the multidimensional surface.

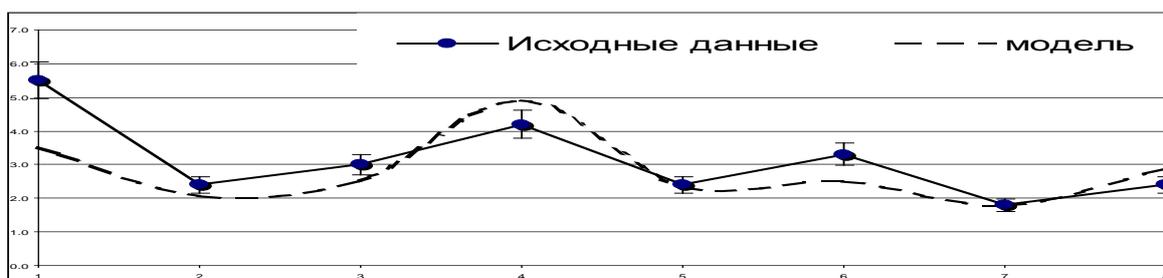


Fig. 4 Exponential model

Comparison of the graphs of the coefficients of pair correlation and relative errors allows, in this example, to conclude that most of the adequacy of the power-

law model.

### **Conclusion**

1. In the proposed embodiment, the graphical display of simulation results possible visual inspection matches the original and predicted values of the response functions, the control of the “hit” predicted values in the confidence interval and match score "nature" of the curve between each pair of adjacent points of the experiment plan.

2. The structure of the E-book spreadsheet allows full enough to perform all of the procedures associated with the construction of econometric models and to compactly represent the simulation results.

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## THE USE OF AMERICAN AND EUROPEAN APPROACHES TO THE ISSUES OF HEAT SUPPLY IS A WAY TO REDUCE OF FOSSIL FUEL CONSUMPTION, INCLUDING IMPORTED NATURAL GAS

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*Abstract. This article examines American and European approaches to heat systems and modern tasks of reducing the consumption of fossil fuels. The article also discusses the state of the use of fuel resources in the organization of district heating of large cities of Ukraine. Using the annual report of the power company Kyivenergo, the data of the published documents of the Ministry of Energy and Coal Industry of Ukraine, I produced estimates of the total losses in the supply of thermal energy to consumers. Based on the results of studies I concluded that the use of American and European approaches to the organization of the heating of consumers of the Ukraine will provide an opportunity to reduce the consumption of fossil fuels, including imported natural gas is much more than disconnection of consumers from hot water supply in summer and decrease in temperature in heating systems in winter.*

*Key words: economy, energy, heating.*

**Introduction.** Given the general problem of limited energy resources an issue of the reduce of fossil fuel consumption is very important for all countries. The development of the system of providing with heat in the US and the EU basically carried out in market conditions with the way selecting of more rational schemes. At the same time in Ukraine the absence of market relations and the presence of a huge centralization of power had an enormous influence on the development of the energy sector.

As a result huge irrational district heating systems were created in the big cities. Today they are very old and have too much heat losses in the chain from extraction of fuel to supply heat to consumers.

High prices for imported fuel, especially natural gas, together with the problem of huge energy losses in network affect on the level of heat tariffs. This situation created prices that are higher than the pay opportunities of consumers, destroys the country's economy and reduces energy independence and security of the whole country.

That is why the issue of the revision of the heating systems in Ukraine is imperative of this time.

**Review of the literature.** Questions of the reducing of the consumption of fossil fuels are considered in the many official international documents. The main methods of increasing the efficiency of the use of energy resources contain in such documents as:

**Input data and Methods.** When researching, I used the statistics of Ukrainian energy companies, data presented in the Energy Strategy of Ukraine until 2030 as well as the tables of the different ratios of the units of measure of energy. Using the data, I made the calculations. In order to make conclusions, I used such scientific

methods as deduction, analysis and an applied scientific research.

**Main part.** In the world there are the more different systems of providing with heat of consumers. They include such systems as providing with heat from nearest boilers and thermal power stations, the individual systems of providing with heat using fuel or electricity, alternative system of providing with heat, for example by solar panels. Herewith developed countries don't have a huge centralized heating system. Market relations and commercial component of heat supply process oblige the staff of energy companies in this country to seek the rational schemes of heat providing and expect the energy and economy result from the use of different options for every consumer.

Accepted by the US and the EU programs to improve of energy efficiency include expansion of activity of the energy sector of these countries to choose the more rational schemes of providing by energy inclusive of thermal. Such activities are necessary to achieve the final goal of preservation of fossil fuels and of climate protection on the Earth.

So President of the US Obama in his program *A POLICY FRAMEWORK FOR THE 21st CENTURY GRID: Enabling Our Secure Energy Future* has set a national goal of generating 80% of our energy from clean energy sources by 2035. [1]. Adopted by the European Community's development strategy involves 20 percent decrease in energy consumption during 10 years from 2010 to 2020. [2].

These documents not only declare the main purpose that they plan to reach but the means by which they are going to achieve it/ This is conversion of boilers into CHP, increased the use electrical heating, the use solar panels and other measures.

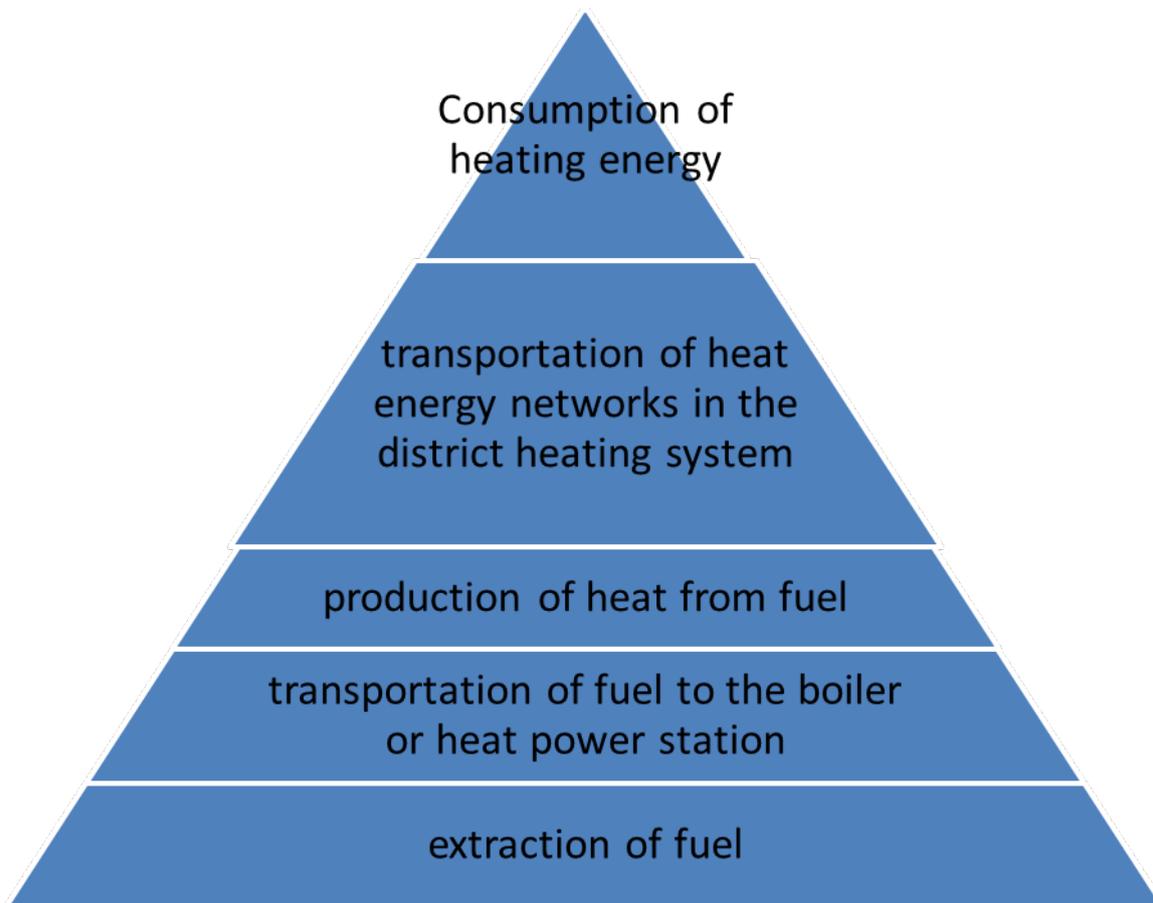
Everyone knows that a big impact on energy consumption can be made by consumer. His energy needs determine mainly the needs to produce energy, including heat as well as the amount of necessary fuel for its production.

In turn influence on the behavior of the consumer of energy can be made with energy prices. That is why the EC Directive envisages stimulate tariffs as an effective measure to improve the energy efficiency.

Established of the States of America and the EU countries the system of stimulate of energy tariffs is designed to influence on consumers such a way in order that they rational have used energy resources to the needs.

Ukraine, which now suffers from the economic and energy crisis has a chance to change the fuel balance by revision of the system of providing heat to consumers.

The Ukrainian system of heating supplies is also different in different regions, different cities and villages. Respectively, the efficiency of different heating systems is different. The biggest heat losses in heat networks are in the centralized heating systems of large cities. The reason for large losses in centralized heat supply is the too long chain from fuel extraction to supply it in the form of heat to energy consumer. Figure 1.



**Figure1. The process from fuel extraction to energy consumption in the form of heat at the consumer**

The biggest loss of energy in the process of heat supply with centralized heat networks are in these heat networks, by which the thermal energy is carried to the consumer. For example the length of thermal networks in Kyivenergo according to their reporting is 274 of thousands kilometers. Accordingly, only the losses in these networks constitute approximately 23 percent of the heat demand. These data yet do not take into account the loss of electrical energy which is used for the work of these heat networks and are average values. The average value of heat losses means that if on the new and reconstructed sections of the heat network amount of heat losses is to 10-12 percent as in developed countries, that there are sections of heat network to consumers with losses of 50 percent or more.

If we use the reports Kyivenergo and table relationships between energy units, it is possible to calculate the loss of electrical energy that is consumed for the operation of this network. They have about 5 percent.

Given the reporting data of Kyivenergo(annual report) on specific fuel consumption in the production of thermal energy (151.3 kg / Gcal), then using the ratio of energy units we can estimated that about 30 percent of the energy value of energy (relative heat consumed by consumers of this company) is lost in the conversion of fuel into heat energy.

Energy company Kyivenergo and other energy companies in big cities with district heating system are using for heat production mainly the natural gas (for environmental reasons). According to the Energy Strategy of Ukraine until 2030, the

average for technical needs and expenses (loss) during the transmission of natural gas through pipelines account for 13.6 percent of the total natural gas consumption. If these data will be to express into percentage from heat energy in consumers, the loss of the energy value will be 17 percent of the total heat energy needs.

Total overall losses of the whole chain to ensure consumers of thermal energy are an average of 75 percent of the energy. Table 1. This is only average technical data, which testify that centralized systems providing heat to consumers so outdated that is required urgently to consider them in detail and to try to drastically reduce this indicator.

**Table 1.**

**Losses of energy in a centralized heating network**

№	Losses of thermal energy	Value as a percentage of the required thermal energy for consumers
	Technical needs and expenses (loss) during the transmission of natural gas through pipelines	17
	Losses in the process of the conversion of fuel into heat energy.	30
	Losses of electrical energy that is used for the operation of the heat network	5
	Losses of thermal energy in the centralized heat networks	23
	Total	75

There are yet huge cost parameters of spending on repair and replacement of heating networks, which increase the tariffs for heat. These indicators are also different for different consumers and they are very different from the average values, which are taken for determination of average tariff for thermal energy.

Large differences technical and cost parameters in the different consumers indicate that the use of the average tariff for all consumers is unfair. As well as that there are huge cross-subsidies at payment for the consumed heat. In order to find out where are have exorbitant losses of heat and the high costs of repairs and maintenance of thermal network, is necessary to do the calculation of the specific cost of providing heat for each consumer of thermal energy.

**The Results. Discussion and Analysis.** Taking into account calculation the schemes of the heat supply of consumers with high losses need to exchange for the schemes of the heat supply with less losses. In this way the first step to reduce of irrational losses in heat networks and to decrease of fuel consumption, including imported natural gas will be made.

Another drawback of the centralized heating system is the impossibility to regulate individual consumption of thermal energy in most consumers. Consumers must either to freeze or to choke from a heat, depending on the parameters of thermal energy which is supplied to all consumers identically. At the same time, different customers need different heating their premises because some consumers is absent majority of the time in some premises, and in some premises there are always people

and children which need special care.

So the second important step to reduce the unnecessary heat losses is to create opportunities for consumers to regulate their own heat consumption in accordance with his needs.

The third important step to reduce the losses of heat and wasteful consumption without limiting for consumers access to the benefits of civilization is the creation of stimulating tariffs for thermal energy. However the system of stimulating tariffs is not the tariff system of RAB- regulates. These two systems are very different. The tariff system of RAB- regulate stimulate investors to invest in energy companies without liability for loss reduction. But the systems of stimulating energy tariffs have to encourage consumers to reduce the consumption of thermal energy and to alignment of the schedules of consumption. Thus the joint efforts of power engineers, economists and consumers should lead to a significant reduction of heat losses and consumption of fossil fuels, especially imported natural gas used to generate thermal energy for district heating systems.

**Conclusions.** In the present situation of district heating system are irrational and have excessive heat losses in the chain from the extraction of fuel to consumption of thermal energy by consumers. Conversion of the centralized thermal systems of large cities into rational heating systems and into heating systems that have minimal losses, gives for Ukraine a chance to get huge savings of energy resources, including savings in the use of imported natural gas in the production of thermal energy for district heating systems. This requires of the implementation of three tasks:

1. To make the calculations of heat losses in heat networks and of the cost of the repair and the maintenance of heating systems for each customer individually. Based on the results of such calculations it is need make a decision to change the system of supply by thermal energy for consumers with losses and costs that are higher than those considered normal for developed countries of the European Union.

2. To give for all consumers of thermal energy the opportunities for the regulation of heat consumption in accordance with their own needs, rather than limiting their access to the benefits of civilization.

3. To establish an effective system of tariffs for thermal energy that would stimulate consumers to the rational use of thermal energy for own needs.

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**APPLICATION OF F-IMPULSES AS INDICATORS OF**  
**DIRECTIONALITY OF RESULTS OF PROCESSES OF FUNCTIONING OF**  
**COMPLICATED SYSTEMS IN AUTHOR'S SEE-ANALYSIS OF THE**  
**FORCE OF PROCESSES ON THE BASIS OF COMPONENTS OF THE**  
**EFFICIENCY**

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*Abstract. In the article on the basis of appropriate modeling methodology of the use of F-impulses is examined as indicators of orientation of consequences of subprocesses of process of functioning of the complicated systems. These F-impulses are the elements of authorial SEE-analysis of processes of functioning of the complicated systems, that shows by itself the analysis of the force of subprocesses of these processes (as possibilities of subprocesses to give a positive result) by means of authorial rates of the scale, of the effectiveness, of the efficiency of the marked subprocesses. The indicated methodology is realized on the example of processes of formation of gross income of two agricultural enterprises of Ukraine. For research statistical data of economic activity of these enterprises, and also authorial models of efficiency and corresponding rates of component parts of efficiency of any process, that was examined in published by authors before works, are used. It was proved, that the offered methodology of application of F-impulses can be used for research of the complicated systems of different types and hierarchical levels.*

*Key words: process; processes of functioning of systems; total, net and scaled products of process; scale, effectiveness and efficiency of process; F-impulses of process; SEE-analysis of complicated systems.*

**Statement of problem.** Modern science and practice need development of methodology of research of certain aspects of force of functioning of the complicated dynamic guided systems of various types and levels (as possibilities of the systems, including economic, to give a positive result) with the aim of management by them. Since a process of functioning of the system is examined as totality of its subprocesses, then this development is taken to methodology of research of force of certain processes. In particular, actual is development of methodology of research of orientation of consequences of any process on its force with the aim of finding of optimal variants of actions in relation to a management by process.

**Analysis of the last achievements and publications.** The existent classic approach to research of force of process is the approach, based on effectiveness as on a concept identical to efficiency [1, 2 and others], although exist and other variants in relation to it [3, 4, 5 and others]. Our researches showed that for description of the force of process is sense to examine the category of the efficiency of any process as such, which is simultaneously characterized at ultimate consequences from a quantitative side, as description of its scale product, and from qualitative side, taking effectiveness of process, that makes to deeper cognition of process after its

consequences [6-9 and others]. **Unsolved part of problem** are clarification and deepening of methodology of research of orientation of consequences of any process on its force with the aim of finding of optimal variants of actions in relation to control by this process on the basis of constituents of efficiency.

**Basic results of research.** A research aim is development of methodology of research of orientation of consequences of any process on its force with the aim of finding of optimal variants of actions in relation to control by this process on the basis of constituents of efficiency. A research object is subprocesses of process of functioning of the complicated dynamic guided economic systems. The article of research is theoretical and practical aspects of providing of optimal force of subprocesses of process of functioning of the complicated systems of any types and hierarchical levels.

At research will use the authorial models of component parts of efficiency of any economic process and corresponding rates as indicators of force of process. At research of process authors are propositioning to think that the consequences of any process are its products: as benefit, as expenses, total product in the shape of a product as benefit and product as expenses. Every process is answered by a scale product in the shape a product as benefit and that part of product as expenses, which proportional to part of product as benefit in a total product. The rates of constituents of efficiency of process can be expressed through the rates of corresponding products [6-9 and others].

Rates of constituents of efficiency of economic process, offered in works [6-9 and others] are component part of mechanism of regulation of this process. At research of process will use such equalizations of change of its efficiency:

$$J_R = J_K \cdot J_E = J_K \cdot J_{V/Z} = J_G \cdot J_{1+V/Z}; \quad (1)$$

$$J_R = J_G \cdot J_{1+Z/V} \cdot J_{G/Z} \cdot J_{V/G} = J_G \cdot J_{1+Z/V} \cdot J_{G/Z} \cdot J_{1+Z/G}, \quad (2)$$

where indexes  $J_R$ ,  $J_K$ ,  $J_E$  and others are the indexes of change of certain rates as attitudes of corresponding rates toward a basic rates. In last formulas:  $V$  is the rate of total product of process;  $Z$  is the rate of product of process as expenses;  $G = (V - Z)$  is the rate of product of process as benefit;  $K = G + Z \cdot G/V$  is the rate of scale product of process;  $E = V/Z$  – the rate of effectiveness of process as ratio of the rate  $V$  of total product and of the rate  $Z$  of product as expenses;  $R = K \cdot E = K \cdot V/Z = G(1 + V/Z)$  is the rate of efficiency of process (more detailed it is examined in works [6, 9]).

For an example in relation to the object of research it is chosen the process of forming of the gross income of agricultural enterprise as subprocess of its production activity. It is the process of labour and forms part of creation of gross value added (GVA) of region, country (just herein important role of this process consists). This process is characterized by material charges and amortization. Will examine the marked process of two next agricultural enterprises of the Vinnitsa area: 1) Ltd “Joint-stock company “Zelena dolyna” (enterprise of A), that produce an organic product; 2) Private joint-stock company “Food company “Podillia” (enterprise B).

In a table 1 some indexes of production activity of the marked enterprises are

given in 2010–2013, in a table 2 – dynamics of constituents of efficiency of process of formation of the gross income of these enterprises for 2010–2013, and in a table 3 – description of constituents of efficiency of process of formation of gross income of enterprise A in comparing to the enterprise B in 2010–2013.

**Table 1**

**Activities of productive activity enterprises in 2010–2013**

<b>Enterprise A*</b>				
Activities	2010	2011	2012	2013
Net profits (proceeds) from realization of products (commodities, works, services)	198799	224243	269907	276761
Material charges and depreciation	127308	181123	189144	150362
Average annual quantity of workers (persons)	1439	1412	1045	856
<b>Enterprise B**</b>				
Activities	2010	2011	2012	2013
Net profits (proceeds) from realization of products (commodities, works, services)	609852	930609	570448	725120
Material charges and depreciation	301881	477733	444392	396898
Average annual quantity of workers (persons)	3442	3350	2691	2266

\*By data of the enterprise.

\*\* By statistics of financial accounting of appropriate enterprises [10]. Money indicators are presented in actual prices (thousands of hryvnias).

**Table 2**

**Dynamics of components of efficiency of process of formation of the gross income of enterprises A, B in 2010–2013\***

<b>Enterprise A</b>						
Year	Description of total product of process		Description of product of process as costs		Description of net product of process	
	V	$J_V$	Z	$J_Z$	G	$J_G$
2010	138.1508	-	88.46977	-	49.68103	-
2011	158.8123	1.149558	128.2741	1.44992	30.53824	0.6146861
2012	258.2842	1.626349	180.999	1.411034	77.28517	2.530767
2013	323.3189	1.251795	175.6565	0.9704833	147.6624	1.910617

*Continuation of table 2*

<b>Enterprise A</b>						
Year	Description of qualitative component of scale product of process		Description of scale product of process		Description of effectiveness of process	
	$1 + D_Z$	$J_{1+Z/V}$	K	$J_K$	E	$J_E$
2010	1.6403855	-	81.49604	-	1.561559	-
2011	1.8077086	1.102002	55.20424	0.6773855	1.23807	0.7928423
2012	1.7007747	0.9408456	131.4447	2.381061	1.426992	1.152594
2013	1.5432919	0.9074053	227.8862	1.733704	1.840631	1.289868

Year	Description of quantitative component of effectiveness of		Description of qualitative component of effectiveness of		Description of efficiency of process	
	$J_{G/Z}$		$J_{V/G}$		R	$J_R$
2010	-		-		127.2609	-
2011	0.4239449		1.870154		68.34673	0.5370599
2012	1.793555		0.6426307		187.5705	2.744396
2013	1.968728		0.6551784		419.4544	2.2366249

<b>Enterprise B</b>						
Year	Description of total product of process		Description of product of process as costs		Description of net product of process	

Year	V	$J_V$	Z	$J_Z$	G	$J_G$
2010	177.1796	-	87.70512	-	89.47443	-
2011	277.7937	1.567866	142.6069	1.625981	135.1869	1.510899
2012	211.9836	0.7630973	165.1401	1.158009	46.84355	0.3465097
2013	320	1.50955	175.1536	1.060636	144.8464	3.092131
Year	Description of qualitative component of scale product of process		Description of scale product of process		Description of effectiveness of process	
	$1 + D_Z$	$J_{1+Z/V}$	K	$J_K$	E	$J_E$
2010	1.495007	-	133.7649	-	2.020174	-
2011	1.5133553	1.012273	204.5857	1.529443	1.947969	0.9642581
2012	1.7790228	1.175549	83.33575	0.407339	1.283659	0.6589733
2013	1.5473549	0.869778	224.1288	2.689468	1.826968	1.42325
Year	Description of quantitative component of effectiveness of		Description of qualitative component of effectiveness of		Description of efficiency of process	
	$J_{G/Z}$		$J_{V/G}$		R	$J_R$
2010	-		-		270.2283	-
2011	0.9292231		1.037704		398.5266	1.474777
2012	0.2992287		2.20224		106.9747	0.2684255
2013	2.915355		0.4881909		409.4762	3.827785

\* Money rates are presented on the average for a year in hryvnias on one worker; V – net profits (proceeds) from realization of products (commodities, works, services); Z – material charges and amortization; G = (V– Z) is gross income. Indexes – it is in the coefficients of rates of enterprise to the corresponding rates previous year ( $J_K = J_G J_{1+Z/V}$ ,  $J_E = J_{G/Z} J_{V/G}$ ,  $J_R = J_K J_E$ )\*. Source: researches of author.

From data of table 2 it is following, that on an enterprise A in 2011 in comparing to the previous year there was a decline of level of efficiency of process of formation of the gross income on 46.29 pct (index  $J_R$ ), and in 2012, 2013 – increases on 174.44; 123.66 pct accordingly. From data of table 2 it is following also, that on an enterprise B it was observed in 2011, 2013 increase of level of efficiency of this process accordingly on 47.48; 282.78 pct, but in 2012 – slump on 73.16 pct. From data of table 2 rates of increase of indexes of dynamics of constituents of efficiency of process of formation of the gross income enterprises A, B are found for 2011–2013 (in pct, it is given in a table 4), and from data of table 3 – rates of increase of indexes of components of efficiency of process of formation of the gross income of enterprise A in comparing to the enterprise B in 2010–2013 (in pct, it is given in a table 5).

**Table 3**  
**Description of components of efficiency of process of formation of the gross income of enterprises A in comparing to the enterprise B in 2010–2013**

2010						
Enterprise	Description of total product of process		Description of product of process as costs		Description of net product of process	
	V	$J_V$	Z	$J_Z$	G	$J_G$
B	177.1796	1	87.70512	1	89.47443	1
A	138.1508	0.779722	88.46977	1.008718	49.68103	0.5552539
Enterprise	Description of qualitative component of scale product of process		Description of scale product of process		Description of effectiveness of process	
	$1 + Z/V$	$J_{1+Z/V}$	K	$J_K$	E	$J_E$

B	1.495007	1	133.7649	1	2.020174	1
A	1.6403855	1.097243	81.49604	0.6092483	1.561559	0.7729828
Enterprise	Description of quantitative component of effectiveness of process		Description of qualitative component of effectiveness of process		Description of efficiency of process	
	$J_{G/Z}$		$J_{V/G}$		$R$	$J_R$
B	1		1		270.2283	1
A	0.5504548		1.404262		127.2609	0.4709384
<b>2011</b>						
Enterprise	Description of total product of process		Description of product of process as costs		Description of net product of process	
	$V$	$J_V$	$Z$	$J_Z$	$G$	$J_G$
B	277.7937	1	142.6069	1	135.1869	1
A	158.8123	0.5716915	128.2741	0.8994943	30.53824	0.2258965
Enterprise	Description of qualitative component of scale product of process		Description of scale product of process		Description of effectiveness of process	
	$1 + Z/V$	$J_{1+Z/V}$	$K$	$J_K$	$E$	$J_E$
B	1.5133553	1	204.5857	1	1.947969	1
A	1.8077086	1.194504	55.20424	0.2698343	1.23807	0.6355699
Enterprise	Description of quantitative component of effectiveness of process		Description of qualitative component of effectiveness of process		Description of efficiency of process	
	$J_{G/Z}$		$J_{V/G}$		$R$	$J_R$
B	1		1		398.5266	1
A	0.2511372		2.530767		68.34673	0.1714985

<b>2012</b>						
Enterprise	Description of total product of process		Description of product of process as costs		Description of net product of process	
	$V$	$J_V$	$Z$	$J_Z$	$G$	$J_G$
B	211.9836	1	165.1401	1	46.84355	1
A	258.2842	1.218416	180.999	1.096033	77.28517	1.649857
Enterprise	Description of qualitative component of scale product of process		Description of scale product of process		Description of effectiveness of process	
	$1 + Z/V$	$J_{1+Z/V}$	$K$	$J_K$	$E$	$J_E$
B	1.7790228	1	83.33575	1	1.283659	1
A	1.7007747	0.9560162	131.4447	1.57729	1.426992	1.111659
Enterprise	Description of quantitative component of effectiveness of process		Description of qualitative component of effectiveness of process		Description of efficiency of process	
	$J_{G/Z}$		$J_{V/G}$		$R$	$J_R$
B	1		1		106.9747	1
A	1.505298		0.7384977		187.5705	1.75341
<b>2013</b>						
Enterprise	Description of total product of process		Description of product of process as costs		Description of net product of process	
	$V$	$J_V$	$Z$	$J_Z$	$G$	$J_G$
B	320	1	175.1536	1	144.8464	1
A	323.3189	1.010372	175.6565	1.002872	147.6624	1.019441
Enterprise	Description of qualitative component of scale product of process		Description of scale product of process		Description of effectiveness of process	
	$1 + Z/V$	$J_{1+Z/V}$	$K$	$J_K$	$E$	$J_E$

B	1.5473549	1	224.1288	1	1.826968	1
A	1.5432919	0.9973742	227.8862	1.016764	1.840631	1.007479
Enterprise	Description of quantitative component of effectiveness of process		Description of qualitative component of effectiveness of process		Description of efficiency of process	
	$J_{G/Z}$		$J_{V/G}$		$R$	$J_R$
B	1		1		409.4762	1
A	1.016522		0.9911035		419.4544	1.024368

\* Money rates are presented on the average for a year in hryvnias on one worker in real prices;  $V$  – net profits (proceeds) from realization of products (commodities, works, services);  $Z$  – material charges and amortization;  $G = (V - Z)$  is gross income. Indexes – it is the coefficients as ratio of money rates of enterprise A to the corresponding rates of enterprise B ( $J_K = J_G J_{1+Z/V}$ ,  $J_E = J_{G/Z} J_{V/G}$ ,  $J_R = J_K J_E$ ). Source: researches of author.

Data of tables 4 and 5 allow to judge on how many percents the corresponding indexes of dynamics of constituents of efficiency of the investigated process of enterprises A, B and certain indexes of this process in relation an enterprise A in comparing to the enterprise B changed (increased or diminished), notably data of tables 4 and 5 give an opportunity to draw a conclusion for account of what constituents the rates of products of process (total, net, scale product, product as charges) and constituents of efficiency of process are being changed.

**Table 4**

**Matrix of paces of increase of indexes of dynamics of constituents of efficiency of process of formation of the gross income of enterprises A, B for 2011–2013\***

$J_R = J_G J_{1+Z/V} J_{V/Z} = J_G J_{1+Z/V} J_{G/Z} J_{1+Z/G}$ ; $J_{G/Z} = J_G / J_Z$ ; $J_{V/G} = J_V / J_G$										
$J_R = J_K J_E$			$J_K = J_G J_{1+Z/V}$			$J_E = J_{G/Z} J_{V/G}$				
<b>Enterprise A</b>										
	$\Delta J_R$	$\Delta J_K$	$\Delta J_E$	$\Delta J_G$	$\Delta J_{1+Z/V}$	$\Delta J_{G/Z}$	$\Delta J_{V/G}$	$\Delta J_V$	$\Delta J_Z$	
	-46.29	-32.26	-20.72	-38.53	+10.20	-57.61	+87.02	+14.96	+14.50	
	+174.44	+138.11	+15.26	+153.08	-5.92	+79.36	-35.74	+62.63	+41.10	
	+123.66	+73.37	+28.99	+91.06	-9.26	+96.87	-34.48	+25.18	-2.05	
<b>Enterprise B</b>										
	$\Delta J_R$	$\Delta J_K$	$\Delta J_E$	$\Delta J_G$	$\Delta J_{1+Z/V}$	$\Delta J_{G/Z}$	$\Delta J_{V/G}$	$\Delta J_V$	$\Delta J_Z$	
	+47.48	+52.94	-3.57	+51.09	+1.23	-7.08	+3.77	+56.79	+62.60	
	-73.16	-59.27	-34.10	-65.35	+17.55	-70.08	+120.22	-23.69	+15.80	
	+282.78	+168.95	+42.33	+209.21	-13.02	+191.5	-51.12	+50.96	+6.06	

\* Paces of increase – it is in percent to the rates previous year. Source: researches of author.

**Table 5**

**Matrix of paces of increase of indexes of components of efficiency of the process of formation of the gross income of enterprises A in comparing to the enterprise B in 2010–2013\***

$J_R = J_G J_{1+Z/V} J_{V/Z} = J_G J_{1+Z/V} J_{G/Z} J_{1+Z/G}$ ; $J_{G/Z} = J_G / J_Z$ ; $J_{V/G} = J_V / J_G$										
$J_R = J_K J_E$			$J_K = J_G J_{1+Z/V}$			$J_E = J_{G/Z} J_{V/G}$				

	Y	$\Delta J_R$	$\Delta J_K$	$\Delta J_E$	$\Delta J_G$	$\Delta J_{1+Z/V}$	$\Delta J_{G/Z}$	$\Delta J_{V/G}$	$\Delta J_V$	$\Delta J_Z$
	2	-52.81	-39.08	-22.70	-44.47	+9.72	-44.95	+40.43	-22.03	+0.87
	2	-82.85	-73.02	-36.44	-77.41	+19.45	-74.89	+153.92	-42.83	-10.05
	2	+75.34	+57.73	+11.17	+64.99	-4.40	+50.53	-26.15	+21.84	+9.60
	2	+2.44	+1.68	+0.75	+1.94	-0.26	+1,65	-0.89	+1.37	+0.29

\* Paces of increase – it is in percent (components of efficiency of the process of formation of the gross income of enterprises A in comparing to the enterprise B). *Source: researches of author.*

For example, from data of line 2 of table 4 it is possible to do a next conclusion: on an enterprise A in 2012 in comparing to the previous year there was an increase of level of efficiency of process of formation of gross income on 174.44 pct (index  $\Delta J_R$ ) for account of the increase of levels of scale (index  $\Delta J_K$ ) and effectiveness (index  $\Delta J_E$ ) on 138.11 and 15.26 pct accordingly, though the increase of level of scale took place at the increase of level of gross receipt (index  $\Delta J_G$ ) on 153.08 pct and reduction to influence of past labour (the level of past labour is determined by the level of material charges and amortization with an index Z) on 5.92 pct (index  $\Delta J_{1+Z/V}$ ). By-turn, the increase of level of effectiveness of process is explained by the increase of level of its quantitative constituent (index  $\Delta J_{G/Z}$ ) on 79.36 pct and by the reduction of level of qualitative constituent (index  $\Delta J_{V/G}$ ) on 35.74 pct.

*F*-impulses of process will name factors that serve to forming of *products* of this process ( $F = Z, G, V, 1+Z/V, K, E, R, G/Z, V/G$ ). Products of process are charges on its functioning; scaled, net and total products; scale, effectiveness and efficiency of process and others like that. These impulses can be both positive and negative.

Values of indexes  $\Delta J_Z, \Delta J_G, \Delta J_V, \Delta J_{1+Z/V}, \Delta J_K, \Delta J_E, \Delta J_R, \Delta J_{G/Z}, \Delta J_{V/G}$  from tables 4 and 5 characterize the degree of influence of corresponding factors on forming of products of the investigated process. By these factors of process, that is studied, is accordingly: material charges and depreciation (with the index of Z); gross receipt (with the index of G); net profit (profit yield) from realization of products (commodities, works, services) – with the index of V); past labour (with an index  $1+Z/V$ ); scale of process (with the index of K); effectiveness of process (with the index of E); efficiency of process (with the index of R); quantitative constituent of effectiveness of process (with the index of G/Z); a qualitative constituent of effectiveness of process (with the index of V/G).

The results of measuring of degree of influence of corresponding factors on forming of products of the investigated processes are represented in tables 4 and 5 (in conditional units (con. un.)). These results will name power of corresponding impulses. *R*-impulse is resultant of *K*-impulse and *E*-impulse, *K*-impulse – resultant of *G*-impulse and  $(1+Z/V)$ -impulse, *E*-impulse – resultant of  $(G/Z)$ -impulse and  $(V/G)$ -impulse.

For example, from data of row 2 of table 4 it is possible to do a next conclusion: on an enterprise A in 2012 in comparing to the previous year there was positive *R*-impulse by power a +174.44 con. un., it is resultant of positive *K*-impulse and *E*-impulse by power +138.11 con. un. and +15.26 con. un. accordingly. By-turn, *K*-

impulse is resultant  $G$ -impulse and  $(1+Z/V)$ -impulse by power +153.08 con. un. and -5.92 con. un. accordingly,  $E$ -impulse – resultant  $(G/Z)$ -impulse and  $(V/G)$ -impulse by power +79.36 con. un. and -35.74 con. un. accordingly.

On the whole, in relation to the process of creation of gross income of enterprise A in 2011 negative were  $R$ -,  $K$ -,  $E$ -,  $G$ -,  $(G/Z)$ - impulses, and positive –  $(1+Z/V)$ -,  $(V/G)$ -,  $V$ ,  $Z$ - impulses; in 2012 negative –  $(1+Z/V)$ -,  $(V/G)$ - impulses, and positive – all others; in 2013 – negative -  $(1+Z/V)$ -,  $(V/G)$ -,  $Z$ - impulses, and positive – all others. In relation to the process of creation of gross income of enterprise B, then in 2011 negative were  $E$ -,  $(G/Z)$ - impulses, and positive – all others; in 2012 positive –  $(1+Z/V)$ -,  $(V/G)$ -,  $Z$ -impulses, and negative – all others; in 2013 negative –  $(1+Z/V)$ -,  $(V/G)$ - impulses, and positive – all others. In relation to the process of the gross income of enterprise generating A in comparing to the enterprise B, then in 2010 positive were  $(1+Z/V)$ -,  $(V/G)$ -,  $Z$ - impulses, and negative – all others; in 2011 positive –  $(1+Z/V)$ -,  $(V/G)$ - impulses, and negative – all others; in 2012, 2013 negative –  $(1+Z/V)$ -,  $(V/G)$ - impulses, and positive – all others.

In the article the process of the gross income of agricultural enterprises was examined as subprocess of its productive activity. Research of other subprocesses of process of functioning of agricultural enterprises with the aim of estimation of economic development of process and acceptance of scientifically-reasonable administrative decisions on the basis of the use of  $F$ -impulses in relation to the orientation of consequences of processes is conducting by analogy.

In the end we will formulate a concept authorial *SEE*-analysis of the complicated systems: *SEE*-analysis of the complicated systems is the analysis of the force of process of functioning of the complicated systems (as possibilities of process to give a positive result) by means of authorial rates of the scale, of the effectiveness, of the efficiency of the subprocesses of the marked process, which got on the basis of products of these subprocesses – as to the benefit (net products, net results of subprocesses, useful possibilities of subprocesses); as losses (charges, lost opportunity subprocesses); as total (combined) products in the shape of product as benefit and as losses (combined possibilities of subprocesses); as scale products in the shape of products as benefit and as those parts of losses, that proportional to part of products as benefit in total products.

Our researches showed that on the basis of authorial rates of constituents of efficiency it is possible to investigate the processes of different types and hierarchical levels [9]. Therefore the offered methodology of application of  $F$ -impulses can be used for research of the complicated systems of any types and hierarchical levels.

Under certain circumstances the complicated system needs corresponding directions of the rational functioning: for example, “orientation on the product”, notably optimization its volumes; “orientation on the procedures”, notably decrease of losses with stable volume and others like that. Therefore there is a necessity of finding out of connection between the constituents of efficiency of subprocesses of process of functioning of the system and their products. Such finding out, in particular, the use of  $F$ -impulses assists as indicators of orientation of consequences of process functioning of the system, which are the elements of authorial *SEE*-analysis of the force of processes on the basis of constituents of efficiency.

Since external and internal factors in relation to the processes of functioning of systems of the any types and hierarchical levels influence on products of their subprocesses, then expressing efficiency of these subprocesses through the used higher authorial rates, it is possible enough exactly to describe a level, state and consequences of the marked processes and to carry out their reformation in corresponding directions.

Conclusions. 1. It is found out on the example of process of formation of the gross income, that for research of the force of component processes of productive activity of agricultural enterprises by corresponding impulses from the point of view of orientation of consequences of processes (what are adopted *F*-impulses) rates of paces of increase of components of the efficiency can serve. 2. It is set on the example of process of formation of the gross income of two concrete agricultural enterprises, that methodology of application of these impulses can be used in practice with the aim of estimation and prognostication of its economic development and acceptance of scientifically-reasonable administrative solutions. 3. It is accented, that research of other component processes of process of functioning of agricultural enterprises with the same aim on the basis of the use of *F*-impulses in relation to the orientation of consequences of processes is conducted by analogy. 4. It is formulated concept *SEE*-analysis of the complicated systems as the analysis of the force of subprocesses of process of functioning of the complicated systems by means of corresponding authorial rates of constituents of the efficiency. It is set, that *F*-impulses are the elements of *SEE*-analysis of the systems. 5. It is grounded, that methodology of application of *F*-impulses can be used for research of the complicated dynamic guided different types and hierarchical levels.

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**Eremenko N.V., Sidorova D.V., Orel J.V.**  
**HISTORICAL AND GEOGRAPHICAL REGION INVESTMENT**  
**POTENTIAL STAVROPOL RF**

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*Abstract. The paper discusses the current state of one of the major agro-industrial regions of Russia through the prism of investment potential.*

*Key words: resources, diversification, production efficiency.*

Investment crisis has affected the last time, including Stavropol region, due mainly to unstable processes inherent in the entire Russian economy. However, in the agricultural sector operated and specific factors that contribute to the emergence of the investment crisis, as evidenced by a steady decline in the share of investment in agricultural in comparison with the overall national economic investment in fixed capital.

One of the factors increase the investment attractiveness of the region is its historically and geographically shaped form, which is presented below.

Stavropol edge in the Russian Federation was formed in February 1924. The region is located and the heart Ciscaucasia - between Europe and Asia, the Black and Caspian Seas. Currently, Stavropol Territory - is a business, logistics and investment attractive center of the North Caucasus. Stavropol region has a length of 285 kilometers from north to south and 370 kilometers from west to east, occupies a central position in southern Russia between the Black and Caspian Seas and is the center of the North Caucasian Federal District. Stavropol - the only southern region, which is bordered by eight regions of the Russian Federation. The area of the province is 66,2 thousand sq. M. km (0,4% of the territory of the Russian Federation). Length of the border with the neighboring regions of the Russian Federation – 1753,5 kilometers.

Distance from regional administrative center of Stavropol edge, Stavropol, and Moscow - 1621 km. 87,8% of the territory is occupied by agricultural land, 1,7% - forests, water – 1,8% - 8,7% Other Land. The relief of the province is diverse and divided the altitude in the lowlands (less than 200 m above sea level), elevated (200-500 m) and mountain (500 m). The territory is divided into four climatic zones: semidesert (extremely dry), steppes (arid), forest (unstable moistening), foothills (sufficient moisture). The climate is temperate continental. The average temperature on the edge: January - 3 - 5 ° C, July 17 25 ° C. The growing season in the Stavropol region 200-234 days.

Stavropol region comprises 26 administrative districts, 8 urban districts, 15 urban settlements, 281 rural settlement, 26 urban settlements, 735 villages and 330 municipalities.

The population of the edges of January 1, 2012 amounted to 2787,1 thousand Man. The economically active population of the region on average in January-December 2011 amounted to 1373,3 thousand. Man. The prevailing part of the employed population (about 58%) is concentrated in enterprises and organizations of

the region (732,9 thousand People), including large and medium-sized organizations – 495,2 thousand People. The overall unemployment rate at the end of December 2011, calculated according to ILO methodology was 5,9%. Officially registered unemployment rate at the end of December 2013 was 1,8% against 2,0% in December 2010.

The total reserves of medicinal mineral waters on the territory of the region make up 12,450 m<sup>3</sup> / day. Used only 11% 32 explored deposits. The region CMS operated more than 100 mineral water wells thirty types. Sources of Pyatigorsk and Kislovodsk on chemical properties and therapeutic effects of similar sources number 1, 2 and 3 Truskavets (Ukraine), Druskinenkaya (Lithuania) and Wiesbaden (Germany).

21 explored deposits of fresh groundwater reserves total 1,8 million M<sup>3</sup> / day; 10% is used. The reserves of thermal waters by categories B and C1 is 12,2 thous. M<sup>3</sup> / day.

Stavropol region has significant reserves of unique mineral resources that are attractive for the effective industrial use.

First of all, it is - natural gas, oil, base metals, uranium-containing building materials. The most known deposits: Gas - North Stavropol-Pelagiadinskoe reserves about 229 billion cubic meters) and Sengileevskaya; gas condensate - Mirnenskoe and Rasshevatskoe; Oil - Praskoveyskoe. Stavropol region is characterized by a resource base for titanium and zirconium ores, geological reserves of mineral sands commodity components are, respectively, 44.6 million m<sup>3</sup> (category C2 + P1) and 30,9 million M<sup>3</sup> (category C2 + P1) with industrial obèmom Issue 1,0 – 1,2 million m<sup>3</sup>.

The presence in the region minerals with the approved reserves 888,4 million M<sup>3</sup> (in the reserve fund is 77 fields with total reserves of 337,5 million. M<sup>3</sup>), with the account of the dynamics of the construction industry in the province, is one of the key factors in attracting investors for the production of building materials.

Transport infrastructure includes the following:

- 2 international airports: Stavropol and Mineral Waters.
- Edge of the railway network messages is 1,2 thousand km, 7 railway stations, 47 line stations, 106 stations, sidings and stopping points.
- Length of public roads of regional significance is more than 4400 km, including the percentage of roads with hard coating - 99%, with improved surface - 87%, a transitional type - 12%, ground - 1%.

Human resource potential of the region includes:

- 176 Vocational training institutions with a total enrollment 176,566 people;
- preparing workers and middle and senior management in the region is carried out on 25 of the 28 aggregated groups of professions and occupations, or more than 150 professions, specialties and areas of training;
- 81 Institution of higher education, including branches, with a total of 126,832 students rights;
- 28 Vocational education - training workers and mid-level professionals. The total contingent of students, taking into account all forms of education is 34,66 thousand man.

The volume of gross regional product (hereinafter - GRP) in 2012, according to the Ministry of Economic Development of the Stavropol region amounted to 399,4 billion. Rubles, with a growth rate of 105,4% compared to 2010, which is higher than the rate of GDP of the Russian Federation. The volume of GRP in the calculation of per capita amounted to 143,6 thousand edges. Rubles, with an increase to the level of 2011.

In the structure of gross value added edge of 20,4% from industry, 21,1% of wholesale and retail trade, 11,1% - agriculture, 7,6% - construction.

The facts show undeniable opportunities to increase the investment attractiveness of the Stavropol Territory.

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**J11517-026****Fateeva T.N., Vidasova V.V.****ANALYSIS OF EXPORTS AND ITS IMPACT ON FINANCIAL RESULTS***Financial University under the Government of the Russian Federation,  
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*Abstract. The paper deals with the analysis of export operations in the Russian Federation are the main stages of the analysis of export contracts and the impact of exchange rates, given the method of analysis of revenues and financial results from international trade and the definition of the feasibility of entering potential sellers in international markets, as well as recommendations for management decisions.*

*Keywords: analysis, export, trade, profit, currency*

Introduction. Today, an increasing number of domestic producers master the international market, it should be taken into account especially legislation to regulate foreign trade, but also of international business, particularly contractual and customs documents.

In times of economic instability, commercial risks, as well as unscrupulous business partners to Russian entrepreneurs is not an easy task to preserve not only their material interests, as well as increase the capacity of production processes, increase business profitability. The considered problem analysis is an important export product for virtually all participants of business processes both in the Russian Federation and abroad.

This is especially important for Russian companies in establishing business contacts with entrepreneurs and large companies. It is important to quickly and accurately obtain information about potential partners. Recent experience of market relations in Russia contains a wealth of material failures and material losses of Russian business to business relations with unscrupulous businessmen.

However, it should be noted that public information with the appropriate application of the methods of economic analysis can give an entrepreneur (analyst) the ability to make a fairly accurate conclusions about the state of production, sales and financial software firm that acts as a partner for the Russian businessman.

Review of the literature.

Currently, foreign economic activity are paying a lot of attention. Significant contribution to the study of problems of the theory and methodology of accounting and analysis of foreign economic activity made the following domestic economists: NI Gusev, AA Pakhomov, AY Petrov, ON Rudenko, SY Chanisheva, EM Egorova et al.

Insufficient developed theoretical and practical aspects on the issues presented requires further investigation, which determined the choice of themes and directions of its development.

Input data and methods.

In the analysis of export operations, you can use the accumulated tools that operate in the analysis in trade, industry, construction, communications, and others. The specificity of the analysis of export operations is to examine the impact of changes in the official rate of national currency against foreign currencies.

The main stages of the analysis of export operations should include:

1. Analysis of export contracts in the context of the most important indicators;
2. The analysis of influence factors on exports by commodity groups and as a whole around the export of products;
3. The analysis of the impact of exports on the results and financial position of the organization [1].

In the analysis of export contracts during their imprisonment and execution investigated the following indicators:

- revenues from exports in foreign currency and in rubles;
- costs associated with the export of products;
- financial results from the sale of export products;
- accounting profit (profit before tax), which makes it possible to take into account not only the income and expenses from exports, but other results from export activities;
- Net income, which allows to determine the net financial result from the sale for export;
- profitability indicators characterizing the profitability of export activities.

Export result is the difference between income from exports (foreign currency income E) and the cost to export (A). At the same time foreign exchange earnings expressed in foreign currency and in rubles, and the cost - only in rubles (1-3):

$$M' = E - A \quad (1)$$

where D' - result from exports in rubles or equivalent accrual;

E - currency income (revenue) in ruble equivalent or accrual;

A - the cost of exports.

$$E = K P \quad (2)$$

where K - CBR rate to foreign currencies, rub .;

P - sales value of exports, foreign currency;

$$D' = KR - A. \quad (3)$$

Effect of changes in the official rate to foreign currency (AK) on the financial results on export is determined by the method of absolute differences (4):

$$AK = (K1 * P0 - A) - (C1 * P1 - A). \quad (4)$$

Similarly, we can analyze the impact of changes in the official exchange rate to foreign currencies for each product, contract and others.

When analyzing the financial results of exports for each contract is determined gross profit, operating profit, accounting profit, net profit; deviations from the corresponding base of comparison and the influence of factors that caused these changes.

Accounting profit from exports were analyzed according to the following model (5):

$$PD = q * [p' * k - (C + Sa + CK) + PD - ol], \quad (5)$$

where q - the number of exported products;

p - the price of products in rubles;

k - foreign currency exchange rate in relation to ruble established by the CBR;

C - the unit cost of the exported products;

SU - administrative costs per unit of exported products;

UK - selling expenses per unit of exported products;

PD, PR - Other income and expenses related to the export, per unit of output.

The profitability of exports can be expressed using the following system parameters:

- the effectiveness of the costs associated with the production of goods -

$\rho = \text{gross profit} / \text{sales}$  (6);

- the effectiveness of all costs associated with the production and sale of products -

$\rho = \text{operating profit} / \text{total cost of sales}$  (7);

- the effectiveness of current expenditures -

$\rho = \text{accounting profit} / \text{total cost of sales}$  (8).

The analysis of the above indicators export performance is appropriate when the contract is exported one product type. If exported in one or more contracts, there is a need to identify and analyze the performance of exports by commodity groups and all export products.

In the analysis of net profit organizations from exports can be represented as follows (9):

$PE = BP * (1 - CPD) - PNO - \text{Silk}$ . (9)

Expanding the balance sheet profit figure into its components, we can present a model calculation of the net profit as follows:

$PE = (PP + PD - OL) * (1 - CPD) - PNO - \text{Silk}$  (10)

where PP - profit from the sale of products for export;

PD, PR - Other income and expenses related to the export;

NDP - the rate of corporate profit tax;

PNO - permanent tax liabilities arising in connection with the export of products;

SHP - fines and penalties for violation of currency, customs, tax legislation related to exports.

Along with the study of common indicators of foreign economic activity (exports, imports, foreign trade turnover) in the international practice widely used various relative indicators, in particular the system of economic indices, of which the main ones:

- The index value;
- price indices;
- volume indices;
- the terms of trade. [2]

The above indices are used for the most complete characterization of the export of the organization. The purpose of this study is to establish the changes that have occurred in the commodity structure of exports, the emergence and development of new exports, the change in volume of exports in current and basic prices.

Relationship value indices, price and volume can be represented as follows (11-13):

; (11)

; (12)

(13)

where IN - index value;

Iq- volume index;

Ip - price index.

q0, q1 - physical volume of goods sold in the baseline and reporting period;

p0, p1 - price of the underlying and the reporting periods.

These formulas show that the relative change in total revenue from sales of products is formed as the product of the relative changes in two factors: the volume of products sold and prices. Absolute deviation (increase) productive indicator - sales revenue ( $\Delta N$ ) is defined as follows (14):

$$\Delta N = N1 - N0 = q1p1 - q0p0, (14)$$

where N1 - the amount of revenue from sales during the reporting period;

N0 - the sum of sales for the previous period.

This deviation is formed under the influence of changes in the physical volume of products sold and prices. To determine the effect of each factor must use the technique of elimination, ie the calculation of the effect of one factor to eliminate the influence of the other. The difference between the numerator and denominator for calculating the volume index shows the effect of varying the number of products sold in the amount of sales revenue ( $\Delta Nq$ ), as in this case will be eliminated (removed) the influence of prices. The difference between the numerator and denominator for calculating the price index shows the effect of price changes the amount of sales revenue ( $\Delta Np$ ), as in this case will be eliminated (removed) the effect of the number of products sold. Formulas for calculating the effect of the following factors (15):

$$\Delta Nq = q1p0 - q0p0; \Delta Np = q1p1 - q1p0; \Delta Nq + \Delta Np = \Delta N. (15)$$

In the study of the dynamics of foreign trade study not only the change in value, price and volume, but also to assess the current conditions of trade. To do this, consider the following parameters [3]:

- General terms of trade;
- real conditions;
- Gross conditions;
- the terms of trade on income.

The ratio of price changes and the "real trading conditions" can be regarded as an index of the purchasing power of a fixed volume of exports. [4]

The Results. Discussion and Analysis.

Index of gross terms of trade index is the ratio of the volume of exports to the index of physical volume of imports.

Terms of trade index for income is defined as the product of the real terms of trade volume index of exports and have improved terms of trade in the current period compared with baseline. Mainly used in the practice of real terms of trade index.

Along with the analysis of conventional indicators of foreign economic activity, an analysis of the quality of the exported products to meet the specifications of orders. This indicator shows the quality of export products, delivered on any contract.

Summary and Conclusions.

Analysis of exports is based on the calculation of relative indicators characterizing the various aspects of the organization's activities and its financial position. However, the main thing is not to analyze the calculation of indicators, and

the ability to interpret the results.

In the analysis of the financial performance of the organization from exports estimated net revenues, profit or loss received by the organization in the analyzed period.

Analysis and conclusions on the financial performance of the organization should contain detailed answers to the following questions:

- How has the net proceeds from export operations organization for the period under review?

- main activities for the implementation of which the organization was established, for the analyzed period was profitable or unprofitable to break even?

- from any kind of activity the organization received a basic income for the period under review?

- how much profit (loss) before income tax was the organization as a result of the implementation of all activities at the end of the period?

- as evidenced by the lack of organization in retained earnings?

Thus, managers and other users of information should be mindful of the direction of the analysis of export transactions, which is their helper in making decisions on entering international markets, the expediency of such decisions and to study the dynamics of profit.

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**ACCOUNTING VALUATION ALLOWANCES ACCORDANCE  
WITH IFRS**

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*Abstract. The article deals with the application of IFRS (IAS) 37 «Provisions, Contingent Liabilities and Contingent Assets» in relation to the production of information on the estimated reserves in the financial statements of the company. Provisions represent liabilities for uncertain time or amount of performance. The author draws attention to the production of professional judgment of the company's management, as it based on professional judgment based on the experience in similar transactions and, in some cases, according to the opinion of independent experts assesses the amount of valuation allowances.*

*Keywords: accounting, international financial reporting standards, valuation reserves, accounting policies, financial reporting.*

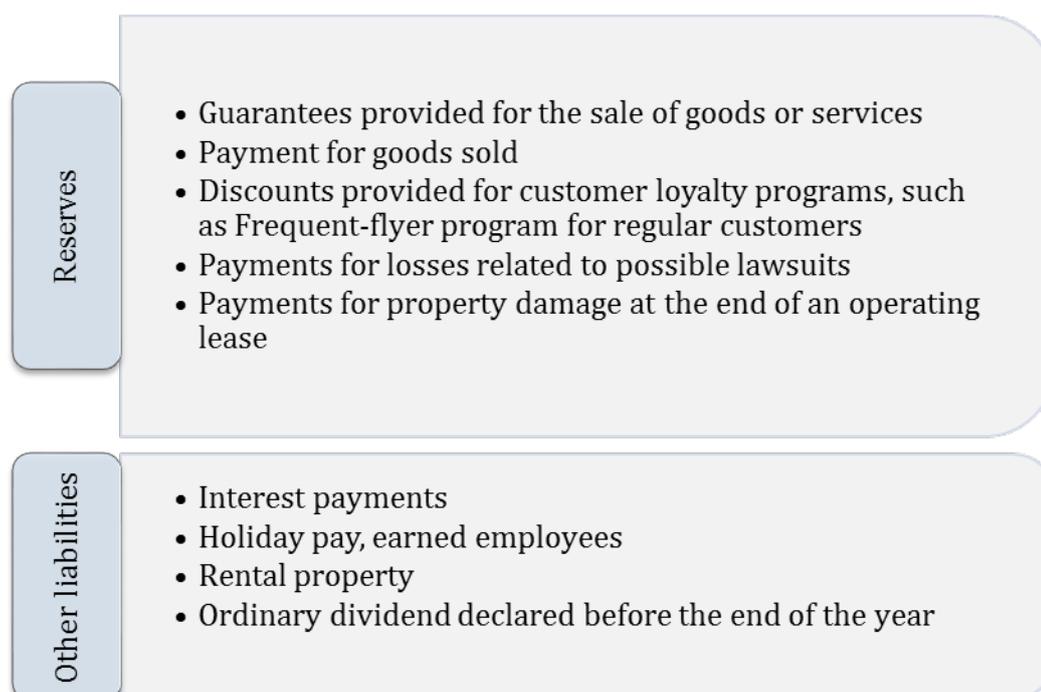
**Introduction.** In accounting companies are required to form a valuation allowance, allowance for doubtful accounts and the upcoming holiday payments. By its nature, reserves established to enforce the obligations of the future, characterized by uncertainty. In some cases, reserves used to provide the effect of «smoothing» profit: in good years, the amount of reserves overestimated, resulting in reduced profits, and under unfavorable conditions the established provisions, thereby artificially high profits, cover the costs.

**The main text.** In accordance with IFRS (IAS) 37 «Provisions, contingent liabilities and contingent assets» «reserve - a liability of uncertain time or amount of performance».

**Obligation** - a current obligation arising because of a past event, the settlement of which will occur through an outflow of resources embodying economic benefits.

In the tax records to create reserves for future expenses is voluntary. This means that each company independently decides to create her similar reserves for tax purposes or not. This decision reinforces the company in the accounting policies. This decision of the company can explained as follows: - the tax burden of the company for various reasons cannot evenly distributed throughout the year. Achieve a uniform cost accounting from the beginning of the year, as well as to increase spending and thus reduce the current tax can created by different provisions.

Provisions differ from other liabilities because they are uncertain maturity or the amount of spending on settlement. Analyzing the IFRS standards (IAS) 37 «Provisions, contingent liabilities and contingent assets» can distinguish types of commitments, which usually counted as reserves and other liabilities taken into account both (picture 1).



**Picture 1 - The composition of the reserves and liabilities in accordance with IFRS (IAS) 37**

In the regulations on accounting, definition of "valuation reserves" is missing. However, now to the valuation allowance are provision for impairment of inventories; provision for impairment of financial investments; allowance for doubtful accounts.

Valuation allowances allow reflecting variations in the value of tangible assets, financial investments and receivables.

Formation of valuation allowances in accounting is required.

It produced in order to provide one of the basic requirements of accounting - diligence. This requirement means a greater willingness to recognize in accounting costs and commitments than possible income and assets, avoiding the creation of hidden reserves. They use substantially improve the reliability and quality of financial reporting. Users of financial statements may see certain assets are not valued at actual cost of acquisition, and their fair value at the balance sheet date.

Values displayed in the balance sheet net of conformity assessment applied in the IFRS concept of the so-called fair value. In contrast to the «historical cost», that is, at cost, «fair value» more accurately reflects the current yield of the asset.

Valuation allowances established in accordance with the accounting rules fail, regardless of the financial results of the organization to ensure the requirements of diligence.

The formation of accounting policy on a particular issue and Veda-of accounting is used to select one of several ways permitted by the legislation of the Russian Federation and (or) normative legal acts on accounting (paragraph 7 of the Regulations on Accounting 1/2008).

In accordance with the order of the Ministry of Finance of the Russian Federation of 13.12.2010 № 167n companies are obliged to create a reserve for

vacation pay. To evaluate the estimated costs that the company will have to incur to fulfill its obligations to pay vacation pay, you need at least a quarterly basis - before reporting. When a provision for vacation pay is essential information on it to open in the financial statements (paragraph 24 of the Accounting Regulations 8/2010). Accounting for this type of provision is conducted on account 96 «Provisions for liabilities and charges».

Company's balance sheet should include the amounts in net assessment, that is, net of control variables (paragraph 35 Accounting Regulations 4/99). This means that the receivables should be reflect in the balance sheet net of the allowance for doubtful accounts.

Changing the estimated value reflect in accounting prospectively. That is, the change in the allowance for doubtful accounts recorded at a higher cost or the period in which the reserve created or modified. Its creation, increase or decrease must necessarily be reflect in accounting as an expense or income (paragraph 4 Accounting Regulations 21/2008).

Provisions are determined separately for each bad debt that not secured by appropriate safeguards. At the same time, divide doubtful debts into two groups:

- 1- Receivables not paid within the period prescribed by the contract;
- 2 - Doubtful receivables, which with high probability will not repaid within the period specified in the contract.

The allowance for doubtful accounts, which relates to the second group, is determined, in our opinion, by an expert, which based on the professional judgment of an accountant.

Provision for doubtful debts is to change the estimated value (item 4 of Accounting Regulations 21/2008). Changes in estimates reflected in accounting as an expense in the reporting period in which the change occurs.

Provision for impairment of tangible assets created for each unit of inventory adopted in wham-business accounting. You can create reserves for depreciation of tangible assets types (groups) of similar or related stocks. At the same time, we can create a reserve for depreciation of tangible assets specific operational or geographical area.

In order to improve the organization of accounting reserves of the company, in our opinion, it is advisable to pay attention to the following aspects.

To account 96 «Provisions for liabilities and charges» in the work plan accounts should provide the following sub-account «Provisions for vacation pay to employees». To this sub-account can also create an account on the analytical categories of workers.

Specific methodology for determining the value of a provision for holiday pay legislation does not provide. Section III Accounting Regulations 8/2010 set out only the following general procedure: a provision recognized in accounting at the balance sheet date in the amount necessary to pay off the creditors or the obligation to transfer to another person. The procedure for calculating the amount of the organization need to define yourself. The selected method should fixed in the accounting policy for accounting purposes. In addition, the accounting policy for accounting purposes, in our opinion, should prescribe the estimate of the allowance for the selling amounts:

- 1) The frequency of estimating the amount of the reserve;
- 2) The calculation formula;
- 3) The increase in the provision taking into account the premiums.

Mechanism for calculating the company has the right to choose your own. In our view, the following options:

- Easy payment by the company as a whole on the basis of targets payroll (this is the least time-consuming, but also the least accurate option);
- Calculation based on the data on the amount of vacation time, actually accrued in the previous calendar year, adjusted by a factor of higher wages and coefficient of variation of the number of employees;
- The exact calculation for each employee (the exact version).

Conclusions and summary. In the comparative analysis of the theoretical foundations of an allowance for doubtful accounts, we have identified deficiencies in the current system of an allowance in the Russian method of accounting, including in comparison with IFRS.

The main drawback of the current system of an allowance for doubtful debts in the Russian practice is to have significant limitations that do not allow full use of the opportunities offered this reserve. Given the need for convergence of the Russian accounting and IFRS, we carried out a comparative analysis of methods for calculating the allowance for doubtful accounts used in Russian and international practice based on the object of study. The most optimal variant used in the IFRS method "accounts receivable aging of payment." Thus, in the Russian accounting the most effective method is to use a combined form of provision for doubtful debts. The essence of this method is that the amount of the reserve formed based on the forecast interest doubtful debts resulting from the analysis of the previous periods, but the maximum amount of the reserve shall not exceed the limit specified in the tax law.

The analysis suggests that IFRS are more loyal to the company and provide greater freedom. So in particular IFRS provides for the possibility of an allowance in different ways, the Russian method of accounting methods of formation not provided at all. In addition, IFRS companies have the right to determine the terms of overdue debt and interest payments to the reserve.

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