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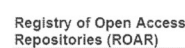
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## Section 1. Accounting

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### Classification of cost accounting system for motor transportation enterprises

**Abstract:** The article revealed issues of organization of accounting and analysis of the cost of providing services of cars. Classification of costs and methods of accounting and calculation. The results of the operations depend on the information that they use for planning, monitoring and control of management, and support decision making. The main criterion for effectiveness of the system is the efficient management of financial and human resources. Managerial Accounting provides the necessary information for this framework and mechanism for the implementation of this task.

**Keywords:** organization, analysis of costs, management accounting, costs, vehicles.

Management is a kind of the accounting “rules of the game”, developed individually for each company with all the features of its functioning. Among the characteristics of management accounting are the following: efficiency in the provision of management information; preparation of weekly and sometimes daily reports; the possibility of detail of information to the extent that the benefits of the information received is higher than the cost to develop it; analysis of the fait accompli of economic activities and planning for the next reporting periods [1].

A significant role in managerial accounting is given account of costs and cost of goods (works, services). The success of the issue, and even the continued existence of economic entities are directly dependent on the feasibility of produced costs that need to be taken into account and must be promptly analyzed in order to reduce them. Therefore it is necessary to disclose the nature and content of concepts such as costs, expenses and costs. These issues, along with issues of cost classification and methods of accounting and calculation will be discussed below. There will also be an objective necessity justified the feasibility of selection as an object of study accounting and analysis of transport and forwarding services costs, and will also be formulated approaches to the identification of the place and role of transport companies in the area of the national economy in the new conditions of its functioning.

Information about costs is also necessary and useful in the following recurring situations:

- establishing/analysis of the prices of goods (works, services);
- a solution on how to enter or termination of activities or products (works, services);
- a solution of an increase or decrease in volume of production, as well as reducing the “normal” price;
- a solution of an increase or reduction of capacity;
- assessment business investment, development and possible embodiments of the production process.

Also, tougher requirements for the management of the organization on the part of investors, including potential. They are interested in making a profit, not only today but also in the long term, ie, every company must make a profit consistently. For this income must exceed the costs incurred. Thus, the task management, managers, accountants, engineers and technicians of companies is to:

- already at the design stage to take into account future costs with the aim of maximum possible reduction of production costs;
- by possible to reduce the time of development work and thus their costs;
- the most effectively organize the entire process — from procurement of materials to production, to the costs were minimal;

– with the help of innovative products to achieve competitive advantages in strategically important areas and make it possible to increase revenue [2].

As previously noted, the costs that are subsequently transformed into the costs are subject to the financial, managerial and tax accounting. Therefore, the formation of an effective cost-accounting system that can meet the needs of managers at all levels of company management, it is first necessary to classify correctly all the major costs incurred in the course of economic activity.

Currently accounting costs uses several different classifications, each of which defines and describes the behavior of the cost. For example, the N. D. Wroblewski allocates 15 signs classification costs for production, O. D. Kaverina – 10 signs, etc. Karpova – 6 signs, L. V. Popov – 7 signs, etc.

Costs are performed during a certain period, which may end in two fundamentally different event types. The period of storage costs is determined by either the moment when met conditions- recognition of assets, in order to create and which were carried out these expenses, or when it becomes evident that the costs incurred reduce the economic benefits the organization, transforming into expenses, which then reduces the organization's income in order to determine financial result. Thus, after the accumulation period costs or result in the formation of assets or costs.

The study allowed the group all the costs of an economic entity in some sense in the context of accounting subsystems (financial, administrative, tax) [3].

The basis of the classification of costs dynamic balance theory was put in the framework of which the economic facts of life are recognized as capitalization, recapitalization and de-capitalization costs. The following types of costs are allocated in connection with the contact:

Capitalized costs — it costs initially recognized in the balance sheet assets. They are reflected in the accounts of the various sub-accounts “Investments in non-current assets” account “Fixed Assets” and “Investments”.tak same as in the case with neutral expenditure has additional costs (accrued cost elements that exceed the related costs) along with costs. Take, for example, the case where the financial accounting period of the fixed assets is greater than the internal data of the company for the purpose of management accounting [4].

For example, the depreciation charge for the purposes of the balance sheet amount to DM 1 000.00 per year, and for internal accounting DM 1 500,00, in this case, the additional costs would amount to DM 500,00. Furthermore, the controversial issue discussed by German

scientists is a necessary economic sense to invest in the concept of “cost.” Within the delineation of the payment terms, costs and expenses allocated cost approach to the definition of “cost”. Along with the treatment of the value of the concept of costs in the economic literature of Germany, there is a different approach to the determination of costs. The basis of the terminological differences of concepts is that different authors pursued in determining the goals and concepts of unequal choose different theoretical background for his argument.

On this basis it is not surprising that there are many interpretations of this concept. We consider this the most comprehensive definition, while making three significant observations on this concept: It should certainly go consumption property. At the same time a property is necessary to understand all the available valuation used objects, not just real estate, services and rights, but also nominal assets such as money or loan amount of financial capital. In addition, the use is understood not only as a physical consumption of raw materials, but as productivity and utilities, the space-time use of the means of production and rights.

To use property rank as well as the payment of official fees, in particular taxes. We are talking about the consumption of property in the general sense of the word, if the property in accordance with its participation in the process of production of the final product is completely or partially loses its properties, so that you can use to overcome the problems alternatively implemented; -Consumption property must apply to the manufacturing process. Not every property consumption is a matter of cost accounting, and only required for manufacturing purposes and assess the results and production organization to maintain productivity. For example, for the main purpose of the brewery — beer production and sales. At the shoe factory main purpose is defined in the proposed range of footwear. Costs considered only a consumption of this terminology, which will inevitably arise in the implementation of the main objectives. If this is not close to the target, ie, the costs do not arise in the performance of production targets, the question of costly nature of such expenses is not. In this case we speak of non-production-raskhodah. necessary valuation consumption.

This observation is different from that in the first two signs of the level. If the first two specifies that should be taken into consideration relating to the production process of the product consumption. Third — how to embrace and reflect the economic sense of the real use ; the value of money. Relating to the production process of property consumption should be reflected in monetary

terms, as the heterogeneous levels of consumption can not be directly added together.

For road transport companies these approaches are implemented through cost management based on advanced cost management methods. In other words, to reduce the cost of ATP can be used a variety of cost management techniques aimed at achieving savings based: in the transport experiment (the longer, the company was engaged in this type of traffic in this area, the easier it is to control the route cost to promote their service, etc. e) A.; the hard cost control, allows you to get a competitive advantage as a result of tariff reductions and the use of savings for the further development of the enterprise; to minimizing the cost of the study traffic and customer requirements, advertising and other transport services.

In the implementation of differentiation, the focus is on upgrading the range of company's products through the creation of something that is felt by consumers as something rare and unique. Approaches to take into account product differentiation: the commitment to the brand, quality of service, availability of dealer network, design and features of products and/or technology.

For road transport enterprise approaches to differentiation of transport services take into account: customer commitment to a particular ATP, maintenance (best execution of documents, forwarding services, etc.), especially mode of transport used for the carriage of cargo transport information technology.

Differentiation of products for road transport can result in serious non-recurrent costs, such as buying an expensive rolling stock with higher technical and performance characteristics, advertising campaigns, a deeper study of the market of services and potential customers.

From a common approach to cost management move on to management practices. Consider the method of constructing the value chain. The essence of this method is as follows. Design and analysis of value chain, first of all, determines where in the value chain can be increased value for the customer, or reduced costs. value chain system — a method of classification of the chain on a strategically important economic activities, to determine the behavior of costs and sources of differentiation. Thus, the total value chain for each enterprise — is unique.

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### Development of auditing methods in accordance with international criteria and standards

**Abstract:** The issues of auditing development in accordance with international criteria and standards are highlighted in the article.



**Keywords:** audit, auditing, international criteria, standards, method, internal inspection, audit risk, the level of importance.

The increasing number of organizations requiring auditor's services, establishing joint ventures, bringing foreign investment in real sector of our country's economy lead auditing to develop in accordance with international standards. Therefore, as the president of Uzbekistan Republic noted: "Auditing should be developed in order to defend the interests of entrepreneurs" [1]. Advancement of this area depends firstly on the development of framework which regulates auditing in compliance with international criteria and standards. Consequently, "... the universal economic model for settling problems causing regress in world's economic system and establishing proper control over it has not yet created" [2].

The economic players should possess the information on costs, control and analyses in order to be competitive in current world's financial recession. This in turn, assists, firstly in generation of reliable financial accounts, secondly, enables to regulate negotiations between consumers and partners within making decisions and managing various activities.

Internal control can be highlighted as one of the most effective tools in regulating management system of economic player within theoretical and practical approach. Internal control is an integral part of a management system of economic player, it combines "accounting, inspection terms and conditions and particular instruments" [3], thus all together they are used to form a reliable financial report. Due to this economic player will be able to collect crucial information to evaluate correctly fulfilled job and to differentiate fixed account indexes.

The general conception of governing economic player, trends of organizing internal control, disorders in requirements of running accounting records, many auditing companies complicate the situation by achieving aims without learning the reliability of internal auditing instruments. This happens due to the fact that there is no suitable and reliable method to evaluate above-mentioned instruments.

Thus "expanding the role of the auditing companies and developing its system, ensuring its stability and effectiveness in accordance with international criteria and standards, broadening variety and scale of auditing services in our country" are determined as important tendencies [4].

Therefore it's important to conform auditing regulation system to international auditing standards and develop methods of assessment of internal inspection during auditing.

"While checking financial report and relevant financial information by auditing organizations" [5], the method of evaluation internal checking should be based on complex of methods and procedures containing auditing internal standards.

Internal control is very important to take measures against depression in Uzbekistan and to take financial and economic decisions by economic players. As the President of Uzbekistan Republic had noted: "... If only there is a guidance of development and strategies to implement comprised of profoundly considered distinct goal and sustainable methods which provide opportunity to foreseen the growth and recession of world's economy and possible challenges can a country and its nation attain a progress" [6].

Taking previous thoughts into account its crucial to set up internal control effectively in order to implement tasks which lead economic players to stable functioning and producing goods of high quality," to increase competitiveness of companies at the expense of creating exceedingly frugal system, encouraging to reduce manufacturing expenses and product's net cost" [7]. As far as this system is effective the auditing risk will also be a minimum.

In normative documents auditors are given at least three stages to assess internal control system:

- 1) General familiarization with internal control system;
- 2) Primary assessment of reliability of internal checking system;
- 3) Confirmation of reliability of internal control system.

Likewise, auditing organizations can also decide to use multiple choices of evaluating internal control system" [8]. However technological process of evaluating internal checking system is comprised of many stages, so highlighted stages are also comprised of interim steps. Auditors are given instructions at other standards.

Unfortunately representing recommendations on evaluating internal control system in different standards does not lead all organizations to establish the only method to evaluate internal control system. This creates a necessity to develop the complex of internal standards for auditing organizations. Therefore, during the research based on international auditing standards, 24 technological steps on assessing internal control system were worked out.

One of the most important steps in planning auditing is assessing economic players' accounting and internal control system and regulated by corresponding national standard [8]. It's well known that supervision is

one of the functions of management. Therefore organizing internal control system and its implementation is a supportive instrument for manager to regulate the management system of economic player.

Effective internal control system depends, first of all, on responsible employees who were appointed to run related work. The process of selecting, employing, upgrading professional skills, advance training of workers should be appropriately lead them to the high professional competence.

The economic book [9] elucidates the algorithm called “the method of direct testing”, which means distribution of absolute cost of the level of importance among separate paragraphs of financial report. This, in turn, contains following points:

1. To select assets and liabilities to distribute the level of importance as per the most considerable segment at the end of balance.

2. To distribute the significance level amongst selected debit and credit operations. Here, the significance level is defined not by the percentage of the end of balance, but by representing indexes as a percentage in the balance sheet (currency of balance (2%) and the amount of private capital (10%)) and in the report of financial results (gross sale volume (2%), general costs (2%), balance sheet profit (5%)), as it is recommended in related standards [10].

According with international experience “an audit defines the level of importance based on own experience.

Usually audits identify the level of importance using designated characteristics. The most popular of them are: from 5 to 10 percent of income before paying profit tax; from 0,5 to 1,0 percent of all assets; from 0,5 to 5,0 percent of private capital; from 0,5 to 1,0 percent of net profit” [11].

R. D. Dustmuradov proposes to use following seven quantitative indicators: proceeds from sale (service and work) (5%), net cost of sold goods (3%), temporary cost (3%), private capital (10%), currency of balance sheet (5%), uncompleted production (3%), undistributed profit (2%)” [12]. Whereas N. F. Karimov set forward the following five items of financial reports of commercial banks: “net profit of balance sheet (3,2%), gross profit (2,7%), gross assets (1,3%), stock capital (5,3%), general expenses (3,0%)” [13].

It is not aimed to designate absolute cost of the level of importance in normative documents. However, it’s indicated that “while finding out the absolute cost of the level of importance an audit should take as a base the most important indexes which, on one hand characterise the liability of the report of economic player, and on another hand named as major indicators of financial report” [14].

As a result of analysing international experience it’s suggested to allocate the level of importance to the portion of some balance sheet accounts in gross balance. Therefore, we can use indexes of table 1.

Table 1. – Fundamental indexes of financial report

The items of balance sheet assets	The sum, in thousand sum	According to international criteria		According to offered criteria	
		Portion%	Level of significance, in thousand sum	Portion%	Level of significance, in thousand sum
The gross profit from sale (service and work) (2-form, 030-line)	857821	–		2	17156
The profit before paying income tax (2-form, 240-line)	441503	5–10	44150	5	22075
Gross assets (1-form, 400-line)	2226600	0,5–1,0	22266	0,5	11133
Authorized capital (1-form, 410-line)	650910	0,5–5,0	32545	5	32545,5
Net profit (2-form, 270-line)	368489	0,5–1,0	3684	1	3684

$$(17156+22075+11133+32545+3684)/5=86594/5=17318;$$

$$(17318-3684)/17318=78,7\%; (32545-17318)/17318=87,9\%$$

The derived index is to be compared with the least and the biggest numbers:

If the difference goes above 30%, two (3684 and 32545) numbers should be excluded and these numbers will no longer be used in calculation. Calculation is to be

carried out based on the rest indexes:

$$(17156+22075+11133)/3=50364/3=16788;$$

The derived number can be multiplied or decreased, it should not overtop 20% due to international standards. This number is to be decreased:

$(16788-15000)/16788=10,6\%$ ; (lower than norm).

Thus, we can designate the level of importance as 15 000 sums. The derived level of importance can be

allocated among balance sheet accounts and their portion in the balance itself, the reached results are shown in the table 2.

Table 2. – Equal distribution of the index of significance level by balance structure\*

The items of balance sheet assets	Sum, thousand sum	Portion,%	The level of significance, thousand sum	Balance pas-sive items	Sum, thousand sum	Portion,%	The level of significance, thousand sum
Fixed assets	197202	8,8	1320	Authorized capital stock	650910	29,2	4380
Long term investment	828357	37,3	5595	Subjoin capital	80993	3,8	570
Stock of resources and goods	1036312	46,5	6975	Reserve capital	565877	25,4	3810
Debtors	96273	4,3	645	Retained income	405034	18,3	2745
Monetary funds	68456	3,1	465	Operating obligations	523786	23,3	3495
Total	2226600	100	15000	Total	2226600	100	15000

\*compiled by author from the indexes of “Uzdonmahsulot” incorporated company’s financial report.

In this way, during auditing an audit designates fixed assets, long term investment, authorized capital stock and others as 1320; 5595; 4380 thousand sum respectively, moreover it is obligatory to designated in audit’s general plan. The level of importance shows the highest

level of the mistakes audit can possibly make or miss. It’s suggested to equally distribute the index of level of importance on debit — credit recordings of an economic player (Table 3).

Table 3. – Equal distribution of the level of importance according to debit-credit recordings

Numbers of items *	Debit turn-over, thousand sum	Portion in total turn-over,%	The level of significance, thousand sum	Credit turn-over, thousand sum	Portion in total turn-over,%	The level of significance, thousand sum
1	2	3	4	5	6	7
0100	95517	0,11	16,5	149275	0,2	30
1000	369476	0,44	66,0	506216	0,6	90,0
1010	83747	0,10	15,0	–	–	–
2810	21365801	25,5	3825,0	21271938	25,3	3795,0
4000	56128746	67,2	10080,0	56080913	67	10050,0
5100	1955362	2,3	345	1954341	2,2	330,0
5200	296684	0,3	45,0	283721	0,3	45,0
5500	842845	1,12	168,0	830879	1	150,0
6000	1891955	2,35	352,5	1597896	2	300,0
6100	10098	0,01	1,5	215496	0,2	30,0
6300	–	–	–	11873	0,1	15,0
6400	62969	0,07	10,5	–	–	–
6520	–	–	–	888	0,1	15,0
6600	15988	0,01	1,5	–	–	–
6700	–	–	–	17699	0,1	15,0
6900	–	–	–	6171	0,1	15,0
7250	21374	0,02	3,0	–	–	–
7810	141500	0,16	24,0	–	–	–
8300	–	–	–	600840	0,7	105,0



1	2	3	4	5	6	7
8500	–	–	–	18273	0,1	15,0
8700	264357	0,31	46,5	–	–	–
Total	83546419	100	15000	83546419	100	15000

To conclude, this method has following advantages: there is possibility to calculate the turnover based on debits and credits of an account designated for distribution, because the methods of distributing the level of importance among account remainders can be used by the audit in auditing conclusion to confirm the report.

However the cost of level of importance can have various forms in this method, likewise the balance sheet accounts of precise period may not rank by the largest criteria while making-up balance sheet. Particularly, the costs of the level of importance are distributed among the accounts of long term assets and accounts payable too.

\* The name of accounts:

0100 – Accounts on accounting of the basic means;

0400 – Accounts on accounting of non-material assets;

1010 – Not Finished productions;

2810 – Finished goods;

4000 – Accounts received;

5100 – The Settlement account in bank by calculation to native currency;

5200 – The Settlement account in bank by calculation to foreign exchange;

5500 – Money funds in the special bank account;  
6000 – Accounts paid to suppliers and contractors;  
6100 – Accounts paid дочерных and dependent economic societies;

6400 – Accounts on indebtedness accounting in the budget;

6500 – Accounts on accounting of indebtedness on insurance and to target state funds;

6600 – Accounts on accounting of indebtedness to founders;

6700 – Accounts on accounting of calculations with the personnel on payment;

6900 – Accounts on accounting of indebtedness to other creditors;

7200 – Accounts on accounting of long-term obligations;

7800 – Accounts on accounting of long-term credits and loans;

8300 – Accounts on authorised capital accounting;

8500 – Accounts on reserve capital accounting;

8700 – Accounts on accounting unallotted has arrived (no coverings a loss).

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## **Organization of accounting and cost analysis of provision of cars**

**Abstract:** The article revealed issues of organization of accounting and analysis of the cost of providing services of cars. Classification of costs and methods of accounting and calculation. The results of the operations depend on the information that they use for planning, monitoring and control of management, and support decision making. The main criterion for effectiveness of the system is the efficient management of financial and human resources. Managerial Accounting provides the necessary information for this framework and mechanism for the implementation of this task.

**Keywords:** organization, analysis of costs, management accounting, costs, vehicles.

Management accounting is an area of expertise that are in demand by all involved in entrepreneurial activity in order to achieve the goals of their administration or the owner of the organization. The results of the activities depends on the information that they use for planning, monitoring and control of management, as well as support decision making. The value of this account is to systematically consider issues within the organization of operational planning, control and accounting of certain types of activities. The main criterion for the effectiveness of the system is the effective management of financial and human resources and management accounting provides this essential information base and the mechanism of realization of this task.

Management is a kind of the accounting "rules of the game", developed individually for each company with all the features of its functioning. Among the characteristics of management accounting are the following: efficiency in the provision of management information; preparation of weekly and sometimes daily reports; the possibility of detail of information to the extent that the benefits of the information received is higher than the cost to develop it; analysis of the fait accompli of economic activities and planning for the next reporting periods [1].

A significant role in managerial accounting is given account of costs and cost of goods (works, services). The success of the issue, and even the continued existence

of economic entities are directly dependent on the feasibility of produced costs that need to be taken into account and must be promptly analyzed in order to reduce them. Therefore it is necessary to disclose the nature and content of concepts such as costs, expenses and costs. These issues, along with issues of cost classification and methods of accounting and calculation will be discussed below. There will also be an objective necessity justified the feasibility of selection as an object of study accounting and analysis of transport and forwarding services costs, and will also be formulated approaches to the identification of the place and role of transport companies in the area of the national economy in the new conditions of its functioning.

In contrast to Marx's theory of marginality theory traditionally distinguishes four groups of factors: land, labor, capital, entrepreneurial activity [2].

The main differences between the two systems are as follows:

– marxism comes from the fact that the factors of production as an economic category determined by the social orientation of production. Already in the original basis of the production process formed the class composition of society and the need for class struggle for "justice." Marginality also consider factors such as the general technical and economic elements without which the production process is unthinkable;

– marginality under capital assets and understand the subject of work, and the natural conditions of release in a special fund. Marxists combine natural conditions, the means of labor and objects of labor in a single real factor;

– If marginality recognize entrepreneurship as a factor of production, the Marxists deny it.

In general, the difference in the classification of the factors of production is mainly due — class approach to the analysis of natural production. In economic theory, post-industrial society as factors of production are allocated and environmental information. They are both closely linked with the achievements of modern science, which itself acts as an independent factor, as it has a decisive impact on the level of production efficiency, the process of preparing a skilled workforce, and improving human capital and capabilities [3].

Modern economic theory under the cost understands “the monetary value of the costs of production factors necessary for the implementation of enterprise production and business activities related to the production and sales of products and provision of services, that is all, what it costs to the enterprise product production and sales (products)”.

The relationship between the costs and expenses shown in the diagram (Shmalenbah).

Under neutral expenditure understand the costs, which do not meet any costs, they are divided into three categories:

– not related to this enterprise, characterized by the fact that the cost of consumption is not at all to do with the production of the final product (eg, donations);

Extraordinary expenses are then, if they arise as a result of the production of the final product, but are so extreme that they can not be included in the cost, otherwise the cost of that period iz-za suddenly emerged consumption costs will increase in the future can not be the basis of any planning for prices or to calculate prices or to establish the lower boundary of the price;

– neutral costs that are caused by assessing the implications, if the expenses are greater than the amount of expenses based on their nature. It the case when, for example, the amount of depreciation for financial accounting depreciation above, taken into account in management accounting. This is due to two reasons: either does not match the term of the fixed assets for management and financial accounting purposes, or basis for determining the depreciation is the cost of the original purchase (financial accounting) or the cost of a new purchase. Additional costs may arise in connection with the following circumstances: [4] vozmesche-

nie for services available to an entrepreneur the factors of production are not considered as expenses, as an entrepreneur (sole proprietorship or partnership) does not pay himself a salary for their work and for the use of the equity interest, this compensation is in front of part of the profits. The preparation of these funds are fully using the profits, not costs. In managerial accounting, as opposed to the wage (for individual companies and partnerships) and participation in the capital shall be included in profits. The manufacture of products and provision of services must take into account to not periodically occurring losses due to risky transactions in management accounting is carried out by means of calculation taking into account the risk premiums. Thus, there is “per iodization costs”, which do not occur periodically. In the period when there is no loss due to the risk, and no costs accrued risk premiums are in full incremental costs. If the loss arises from such operations, it is recognized as an exceptional items and is not taken into account in the management account. That same as in the case with neutral charges have additional costs (costs accrued types that exceed the related costs), together with cost. Take, for example, the case where the financial accounting period of the fixed assets is greater than the internal data of the company for the purpose of management accounting. For example, the depreciation charge for the purposes of the balance sheet amount to DM 1 000.00 per year, and for internal accounting DM 1 500,00, in this case, the additional costs would amount to DM 500,00. Furthermore, the controversial issue discussed by German scientists is a necessary economic sense to invest in the concept of “cost.” Within the delineation of the payment terms, costs and expenses allocated cost approach to the definition of “cost.” Along with the treatment of the value of the concept of costs in the economic literature of Germany, there is a different approach to the determination of costs. The basis of the terminological differences of concepts is that different authors pursued in determining the goals and concepts of unequal choose different theoretical background for his argument. On this basis it is not surprising that there are many interpretations of this concept [5] We consider this the most comprehensive definition, while making three significant observations on this concept:

– It should certainly go consumption property. At the same time a property is necessary to understand all the available valuation used objects, not just real estate, services and rights, but also nominal assets such as money or loan amount of financial capital. In addition, the use is understood not only as a physical consumption of

raw materials, but as productivity and utilities, the space-time use of the means of production and rights [6]. To use property rank as well as the payment of official fees, in particular taxes. We are talking about the consumption of property in the general sense of the word, if the property in accordance with its participation in the process of production of the final product is completely or partially loses its properties, so that you can use to overcome the problems alternatively implemented; -Consumption property must apply to the manufacturing process. Not every property consumption is a matter of cost accounting, and only required for manufacturing purposes and assess the results and production organization to maintain productivity. For example, for the main purpose of the brewery — beer production and sales. At the shoe factory main purpose is defined in the proposed range of

footwear. Costs considered only a consumption of this terminology, which will inevitably arise in the implementation of the main objectives. If this is not close to the target, the costs do not arise in the performance of production targets, the question of costly nature of such expenses is not. In this case we speak of non-production profits. necessary valuation consumption. This observation is different from that in the first two signs of the level [7]. If the first two specifies that should be taken into consideration relating to the production process of the product consumption. Third — how to embrace and reflect the economic sense of the real use, the value of money. Relating to the production process of property consumption should be reflected in monetary terms, as the heterogeneous levels of consumption can not be put directly between themselves.

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## Section 2. Logistics

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### Overview of current state of information logistics in Russia

**Abstract:** This article contains an analytical overview of the current state of information logistics, use and implementation of information systems, an integrated logistics information tools for organizing the optimal flow of information on the economic entities of the Russian Federation. In the article the problems, as well as positive trends.

**Keywords:** information logistic, logistics, e-commerce, supply chain, information system, information technologies.

#### Content

For analyze and identify the current status of development and implementation of information logistics for the subjects of the Russian Federation entities, using of integrated tools for the organization of optimal information flows, it is necessary to answer the questions: How to evaluate and what are the criteria? What will be the source of the data for the evaluation criteria?

The answer to the first question can be obtained from previously received definitions of category information logistics [2; 4; 6; 7].

Taking into account the previously stated position of the term information it is metalogistics of Transport — and Logistics System material and financial flow management. The object of information control acts logistics of information flow and streaming processes of a business entity. Information management is provided by the management of the complex hardware, software and network facilities. The development, use and optimization of the architecture of the complex, is also a priority area of theoretical and applied research information logistics.

The goal of information logistics — minimizing the costs associated with the movement of logistics information flows, both directly and indirectly joined with all other flow processes of a business entity.

Information flows occur between nodes logistics information system. The nodes in the information

logistics system are the hardware-technological technology, computer technology. Computer technologies create a net for a business subjects. Consequently, it is necessary to use criteria such as the communication speed, communication quality. Computer technologies are useless without the application software, integrated enterprise systems, covering the business processes of a business entity.

The answer to the second question, how to collect information that will serve as a source of data? Within the framework of the target program «Electronic Russia» were developed a variety of information resources, including electronic statistical resources. One of these resources, “The Federal State Statistics service” [5].

According to the data was got from the Federal State Statistics Service of the in 2013, economic entities of the Russian Federation, companies and organizations have the following indicators:

Denmark leads in the IDI, surpassing Republic Korea, which had first. Rest countries included in the top ten for the IDI, They are located mainly in Europe (Sweden, Iceland, United Kingdom, Norway, Netherlands, Finland and Luxembourg), as well as in the Asia-Pacific region (Hong Kong (China)). Among the top 30 countries by IDI appear above all the countries of Europe, a number of countries with a high level of income from the Asia-Pacific region (Japan, Australia, Sin-

gapore, New Zealand and Macau (China)), The United States and Canada, as well as Bahrain, the only country from the region Arab States. All countries included in the

first thirty have IDI value greater than seven. Leaders of the IDI have high levels of income, competitive markets and efficient population.

Table 1. – The costs of information and communication technologies in 2013 (million rubles)

	ICT costs	Including						
		for buying computers technologies	for buying software	for payment-services of telecommunications	for payment Internet access	for employee training	for services from third parties and specialists of ICT	other costs
Russian Federation	1245705,1	322423,6	170111,9	405109,6	170769,4	4638,0	267706,4	75715,6

Interestingly, what a form a software component of economic entity has (information systems classes). The

majority of organizations have a class ERP system.

Table 2. – The proportion of organizations used special software, the total number of organizations surveyed in 2012 (percentage)

	Organizations, which used special software all	Of them							
		For scientific research	for projecting	for control of automated manufacturing or separate technical means and processes	for solving the organizational, managerial and economic problems	for financial calculations in electronic form	for providing access to databases via global information networks, including the Internet	publishing systems	etc
Russian Federation	86.0	3.1	11.7	16,7	59.8	61.2	29.3	6.2	

As well as the integration between various business entities (their information systems). Data for the assessment of this criterion can be used with some approxima-

tion as a percentage of the total number of surveyed organizations that are automatically exchange data with other organizations on the means of its information system.

Table 3. – Share of organizations which used flow of documents, the total number of organizations surveyed in 2012 (in percent)

	Organizations which use	
	electronic document management system	automatic data exchange between their and external information systems, according to the exchange formats
Russian Federation	60.4	24.3
Central Federal District	58.8	23.3
Northwestern Federal District	62.6	26.9
Southern Federal District	58.1	23.5
North Caucasian Federal District	60.6	26.2
Volga Federal District	62.7	24.4
Ural Federal District	63.0	26.9
Siberian Federal District	58.9	23.3
Far Eastern Federal District	58.4	23.2

The next indicator — computing equipment, the organization of the automated workplaces (AWP) for business entities. Data for the assessment of this criterion can be used with some approximation as the number of PCs per 100 employees you can see in Table № 4. It is also important criterion for the organization is own

web-site. Web — site as mentioned earlier, may be a prerequisite for the economic entity to e-commerce. From a simple site to a big portal with more functionality for users or existing customers (selling your own products or services through a global network, the support, call-center, etc.) (Table 5).

Table 4. – The number of PCs per 100 employees (units) in 2013 year

	Personal computers — in general	Including with Internet access
Russian Federation	44	26
Central Federal District	50	31
Northwestern Federal District	48	28
Southern Federal District	43	26
North Caucasian Federal District	38	21
Volga Federal District	41	23
Ural Federal District	40	22
Siberian Federal District	42	25
Far Eastern Federal District	43	24

It is obvious that there is a positive trend. Using the method of analytic alignment [3] and predict that the trends of the equation is a straight line, we get:  $y$

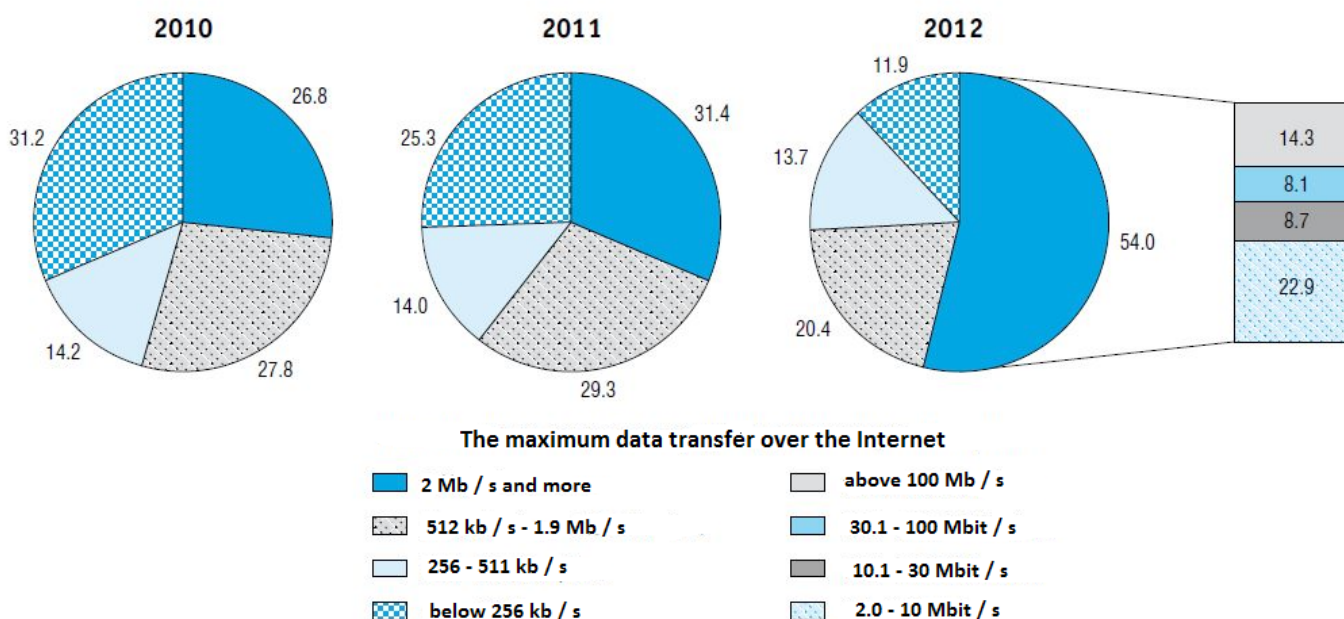
$(t)=31.42+2.64*t$  for the growth of the number of PCs per 100 employees in 2013, presumably 42 employees will be equipped with personal computers.

Table 5. – The share of organizations which have website, the total number of organizations surveyed (in percent)

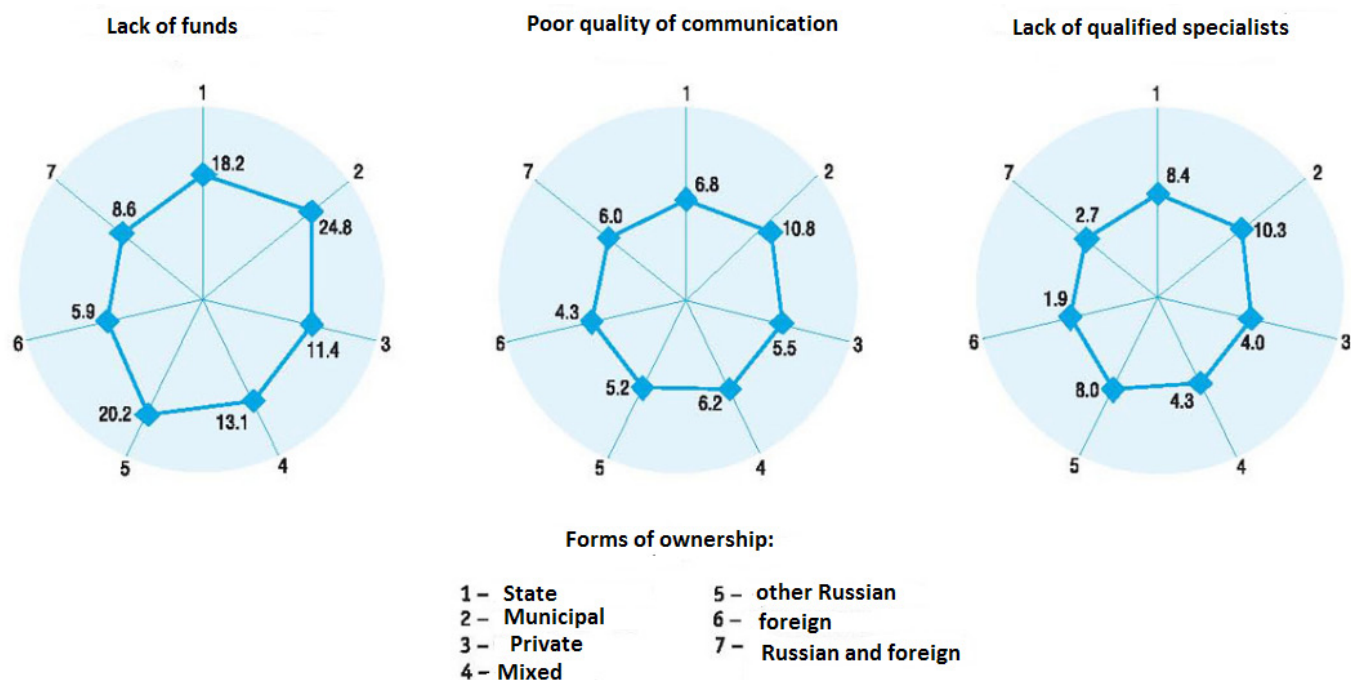
	2012 year
Russian Federation	37.8
Central Federal District	41.3
Northwestern Federal District	43.8
Southern Federal District	32.7
North Caucasian Federal District	36.4
Volga Federal District	38.7
Ural Federal District	39.4
Siberian Federal District	32.5
Far Eastern Federal District	32.0

It remains to find out the quality of communication (Internet connection) and the cost of services, the factors hindering the use of the Internet connection. To

do this, you must turn to other information resources «Statistical collections of Higher School of Economics» [1].



Рісунк 1. Distribution of organizations by the maximum data transfer rate over the Internet (as a percentage of the total number of organizations using the Internet)



Рисунік 2. Significant factors constraining the use of the Internet  
(as a percentage of the total number of organizations)

We can make the following conclusions:

1. The main trend — a shift to e-commerce (online logistics) [2], but according to statistics at the moment about 5 of the 10 companies in the Russian Federation have a “face” in the global network;

2. There is a positive trend in equipment of jobs by computers, including Internet access;

3. The quality of communication (the speed of access to the network) and the cost remains low in remote

areas, far from big cities. Integration of various entities directly dependent on the quality of communication (video conferencing, work through VPN protocols, fast transfer of data);

4. ICT is not enough funded, primarily the purchase and implementation of new software, the Russian Federation has the low indicators on ICT in the economics entities in comparison with the leading countries.

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## Section 3. Marketing

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### Supplying food safety issues in Uzbekistan

**Abstract:** The article presents an overview of food security, the development of the purchasing power of the domestic market, providing the population with food products in the Republic of Uzbekistan.

**Keywords:** Economy, food security, internal labor markets, the modernization of the rural economy.

The food safety issue is of great importance in all countries. The fact that the decrease of the material level of the families in 54 countries were observed, the majority of the population of more than 20 countries were in difficulty of starvation, decrease of length of live in 12 countries, and more than 840 million people of the world suffer of starvation are the vivid proof of it. [1]. Therefore much attention is paid to food safety all over the world.

According to the Food and Agricultural Organizations of the UN, “to reach food safety means to supply all human beings with physically, socially and economically safe food products any time. These products should satisfy a person according to physiological norms, meet his needs and should form healthy mode of life”.

Food safety proves to manage satisfying the population of the country with self-supply of basic food products independently. As well as it means to get rid of full

relying on food imports. It is appropriate to state that food safety is not limited only with full self-supplying of food products. In this case food import is also taken into consideration.

In food safety policy of the state, it, mainly, takes into consideration its agricultural production and developing its inner market, and partially on the basis of the import of food products from abroad to satisfy appropriate need of the population for food. The state policy of maintaining of food safety directed at self-supplying with food products and rational balancing of their importing, creating a guaranteed possibilities to supply the population of the country with food products and ability of it to establish international cooperation in this respect. In addition, this policy is also directed at creating of renewing food reserves [2].

Food safety includes supplying of food physically and economically as well as nutrition safety (Table 1).

Table 1. – Components of Food Safety [3]

Physical Supply with Food	Economic Supply with Food	Safe Nutrition
Effective activity of agriculture and processing	Supporting of stable level of population's income	Product and raw material quality control
Development of food products and raw market	Maintaining of economic stability in the country	Creation of quality managing system and certification
Development of trade networks	Creating favourable conditions for purchasing plot of land	Improvement of population health
Creation of new workplaces	Creating safe conditions for getting land areas	Formation of healthy life-style
Supporting of the population employment	Increase of budgetary payments	

As is seen from the table, physical supplying with food requires the increase of producing food. Economic supply with food requires the increase of population's income, through preserving the inflation on satisfactory degree to increase the population's capacity of buying food production. Safe nutrition means the increase of population's healthy nutrition elements.

It should be stressed that food safety for each person means decreasing the waste (by-products), increasing of the quality of food and nutrition, keeping out a person from over nutrition, supplying food with macro- and microelements and the balance of energy and calorie. Specific features of types of food and nutrition include religion, customs and traditions, as well as advertisement and psychological state of the population.

Providing food safety is the guarantee of social-economic and political stability in Uzbekistan. According to the statistic research, at the period when the former Soviet Union broke up, i. e. in 1989, there were 95% of shortages in supplying of all types of food and it caused to introduce ration card system in the former Soviet Union. In the interviewing held by the Republican organs of statistics among the population of Uzbekistan 89,3% of the participants of the inquiry informed that they do not eat meat products sufficiently. And this index on milk products comprises 56,5%, on sugar – 55,3, confectionary – 49,5 and potatoes – 17,5% [4].

These figures show that food safety had strong threats on the thresholds of independence of Uzbekistan and Uzbekistan was not able to provide with safe food. There-

fore after gaining independence providing food safety became vital.

On the basis of improvement of supplying the population of Uzbekistan with the basic agricultural products providing food safety started on the initiative of the First President of the Republic of Uzbekistan I. A. Karimov before gaining independence. At the state meeting of the Republic headed by I. A. Karimov held August 17, 1989 there was adopted a Resolution "On Creating All Favorable Conditions for Supplying Every Family which lives in the Village with Truck Farms". The Resolution specified to allot in average 25 hundred parts of land for every person who lives in the village and increase of truck farm lands by 4,5 times. As a result of implementation of the Resolution more than 1,5 mln families obtained additional land between 1989–1990. 700 thousand families obtained truck farm lands. And along with it cotton growing plan was decreased by 700 tons [5]. It was an initial but very important practical step towards of eliminating cotton monopoly.

Starting from the first days of independence of Uzbekistan a strategy directed at carrying out agrarian reforms envisaged re-considering the structure of the agricultural crops and improving it. It was also directed at obtaining crop independence in the country. Implementation of the programmer requires great social and economic importance. As a result of it during the independence years in 2015 potato growing increased by 705,0%, fruits – 528,6%, grapes – 323,8%, vegetable products – 298,5% and melons and gourds 199,8%, and crops by 4 times in comparison with 1991. (See: Table 1).

Table 2. – Indexes of some agricultural products in the Republic of Uzbekistan (thousand tons) [6]

Types of production	1991	1995	2000	2010	2015	2015 in comparison with 1991
Crops	1908	3215,3	3915	7391,0	7500,1	393,1
Fruits	516,6	602,3	801,0	1710,3	2731,0	528,6
Grapes	480,5	620,9	573,0	997,5	1556,0	323,8
Vegetables	3324,1	2712,6	2643,1	6346,4	9923,0	298,5
Potato	355,7	439,9	730,7	1692,9	2670,0	705,0
Melon and Gourd	925,8	471,9	359,1	1182,4	1850,0	199,8

Structural changes are also taking place in cattle breeding. If the number of cattle in 1995 was 5,2 and by 2005 its number reached 6,5 mln and in 2015 it reached 11 mln 635 thousand. The number of sheep and goats in 1995 was 9,3 mln. Their number reached 11,3 mln in 2005 and in 2015 it reached 18 mln 906 thousand (Table 3).

The number of cattle in 2005–2015 increased by 77,06% including cows 42,5%, sheep and goats – 57,7% and poultry – 2,9 times.

As a result of sharp increase of agricultural products the volume of it per capita also increased. Growing of fruit, vegetables, melon and gourd, potatoes and grapes shows that supplying the population with agricultural food products per capita also is growing (Table 4).

Table 3. – Growing dynamics of cattle and poultry in the Republic of Uzbekistan (at the beginning of the year, thousand heads) [7]

Types of cattle	2005	2015	In 2015 in comparison with 2005 in%
Cattle	6571	11635	177,06
Including cows	2821,3	4020,6	142,5
Sheep and goats	11351,9	18906	157,7
Poultry	20540,4	60800	296,0

Table 4. – Principle consumption products in the Republic of Uzbekistan (per capita, in kgs) [8]

	1990	2000	2010	2014	2015	In 2015 in comparison with 1991 in%
Cereals	170	167	160	173	170	100
Meat and meat products	31	34	38	42	42,5	138,7
Milk products	183	162	239	248	266,4	145,6
Egg (pieces)	97	47	138	215	230,4	2,38 thousand
Vegetable and melon and gourd	107	128	238	281	285	2,66 thousand
Potato	29	36	45	55	57	196,6
Vegetable oil and other oils	12	12	13	22	22	183,3
Sugar	12	16	17	28	28	2,35 thousand
Fruit, grapes	23	42	83	142	145	6,3 thousand

During the period of analyzing, i. e. in 2015 consumption of vegetable and melon and gourd products per capita grew by 2,66%, potatoes — 196,6% and fruit and grapes by 2,33 time in comparison with 2005. If we take the norm per capita producing grape products grew by 3,1 times. Other products also have more than per capita volume. It proves that during the independence years as a result of reforms in the sphere of agriculture and structural changes efficiency of using agricultural lands increased and therefore the volume of producing agricultural products and crop-producing power increased and providing food safety became stable. Therefore in 2015 Uzbekistan was recognized and awarded, along with 14 countries, for the attained the goal of millennium development in the field of providing food safety among the member countries of Food and Agriculture Organization of the UN [9].

The increase of the agricultural products is determined by a number of factors including the increase of soil fertility and improvement of soil structure which are considered to be one of the topical issues of the present day. One of strategic tasks in this respect is to decrease the cotton field step by step and widen fields of items of food.

According to the Resolution # PD-2460 as of December 29, 2015 adopted by the President of the Republic of Uzbekistan “On Measures of More Reforming and Developing of Agriculture in 2016–2020”, the strategy of decreasing the cotton fields starting from 2016 and

during 5 years 170,5 thousand hectares will be decreased and growing raw cotton to 350 thousand tons. And grain fields starting from 2017 will be decreased 50 thousand hectares and along with this at the expense of increasing crop-producing power to preserve the volume of growing grain were determined [10].

During 2016–2020 sowing fields will be decreased at the expense of cotton and grain in 36 thousand ha (16,3%), 91 ha (41,2%) vegetables, 18 thousand ha (8,1%) intensive gardens, 50,3 thousand ha (22,8%) fodder plants, 14 thousand ha (6,3%) oil plants and 11,2 thousand ha (5%) other food plants in total out of 220,5 thousand hectares of sowing fields will be placed in our country. During 2016–2020 cotton growing fields from 1285,5 thousand ha in 2015 will be decreased to 1115 thousand in 2020 and crop-growing capacity will reach 26,9 metric center from 26,1 metric center. Cereals from 1329,5 thousand ha in 2015 will decrease 1279 thousand in 2020 and productivity will comprise 66,4 metric center from 54,9 metric center, i. e. it will increase 121% [11].

As a result of optimization of sowing areas and implementation of modern agro technology it is planned to increase growing grain crops by 16,4 times and gain its volume 8 mln 500 thousand tons, potatoes – 35%, vegetables – 30%, fruit and grapes – 21,5%, meat – 26,2%, milk – 47–3%, eggs – 74,5% and fish breeding by 2,5 times.

It should be underlined that in the time when the world financial-economic crisis is still going on and in the time when the population is growing and demand for food products is increasing it would be of great importance to optimize the sowing areas and diversification of the structure of the products in providing food safety in our country.

The implementation of scientifically grounded system of building up economy into production practically is considered to be the most important direction of efficient use of land areas in agriculture. As a result of it they manage to use the sowing areas intensively and efficiently without expanding them. In addition, in order to place the land types efficiently it is appropriate to consider soil-climate conditions, lay of land and organization of production economically cost-effective and others. In this case the land use will be economically grounded and effective from production point of view. This, in its turn, equals to expanding of the land areas in agriculture. For example, vivacious fruit trees should be re-planted from irrigated cotton plain lands to piedmont (submontane) and mountainous areas and by this it is possible to empty large parts of irrigated areas for other agricultural crops; removing plants from cotton complex from sandy, stony and other types of land to fertile lands will enable to increase the volume of farming products.

The most efficient way of using irrigated lands is to improve the sowing lands, scientifically grounded rotation of

crops cotton, rice, vegetables and others, and to improve the structure of the soil. And it, in its turn, will increase productivity of plants, will create fodder base for developing cattle breeding and increase fertility of the soil.

To our opinion, the most important directions of increasing agricultural food products include the following:

- More deepening economic reforms in agrarian sphere and improving the formation of property relations and building up economy;
- Improving the mechanism of using lands and encouragement of effective use in agriculture;
- Studying the modern agro technologies and taking it up seriously and implementation of it in practice, improving selection and working out a complex of measures on increasing productivity of agricultural production;
- Developing the branch of re-processing of agricultural raw production and increasing export capacity in agrarian sphere;
- Improving the system of rendering services in villages;
- Improving financial-credit, taxation and insurance systems in agriculture;
- Developing agrarian science and implementing scientific achievements and advanced foreign experience to production;
- Using effectively the labor resources and increasing population's income.

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## Section 4. Management

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### Organizational change in the context of synergetic axioms

**Abstract:** Organizational researches rely on methodology of the “hard” determinism assuming search of univocal, linear links between any relevant events in the organizations and their causes. The modern scientific methodology refuses a mechanistic ideal for benefit of consideration of the organization as the complex self-organized dynamic system which trajectory of development is determined by nonlinear relations and regularities. The methodological foundation of such approach is the synergetics.

**Keywords:** Organizational development, nonlinear dynamic systems, self-organization, synergetics.

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### Организационные изменения в контексте аксиом синергетики

**Аннотация:** Организационные исследования опираются на методологию «жесткого» детерминизма, предполагающего поиск взаимно-однозначных, линейных связей между любыми релевантными событиями в организациях и их причинами. Современная научная методология отказывается от механистического идеала в пользу рассмотрения организации как сложной самоорганизующейся динамической системы, траектория развития которой определяется нелинейными связями и закономерностями. Методологической основой такого подхода является синергетика.

**Ключевые слова:** Организационное развитие, нелинейные динамические системы, самоорганизация, синергетика.

Теория организации с момента своего возникновения в работах классиков менеджмента (А. Файоля, Ф. Тейлора, Г. Эмерсона и др.) строилась по образцу

и подобию естествознания своего времени, где ставилась задача построения каузальной модели наблюдаемых организационных процессов, их научного

объяснения на строго детерминистской основе и последующей выработки рекомендаций для улучшения работы организаций.

Новые перспективы построения общей концепции организационных изменений возникли с появлением синергетики, когда теоретики обнаружили возможности и преимущества использования разработанных в естествознании моделей развития динамических нелинейных систем для понимания того, как и почему происходят перемены на уровне индивидов, групп и организаций в целом.

Аксиомы синергетики, лежащие в основе новой парадигмы организационных изменений, могут быть представлены следующим образом:

1. Сложная система квазистойчива и адаптивна: гомеостаз системы поддерживается путем постоянных изменений, направленных на поддержание динамического равновесия с ее внешней средой, а изменения среды приводят к новым параметрам адаптации.

2. Свойства сложной самоорганизующейся системы не сводятся к сумме свойств ее частей, так же как теряет свою эффективность редуционистский метод, выводящий объяснение поведения сложной системы из понимания закономерностей поведения ее частей.

3. Существует тесная взаимозависимость между частями сложной системы (подсистемами), а также частей с системой как целым.

4. Сложная система нелинейно реагирует на внешние и внутренние возмущения, отклоняющие ее от состояния динамического равновесия с внешней средой.

Хотя эти принципы лишь в совокупности обеспечивают методологические основы новой организационной парадигмы, каждый из них может быть рассмотрен с точки зрения вклада в формирование образа организации как саморазвивающейся нелинейной динамической системы.

**Первый принцип: равновесие через постоянные изменения**

Сложные системы являются квазистабильными: стабильность — это видимость, где изменения незначительны, неочевидны и представляются несущественными.

Развивая данный подход, исследователи организационной сложности рассматривают организации как диссипативные структуры, для которых характерна самоорганизация, самообновляющиеся организационные процессы, что сопровождается диссипативностью (снижением уровня концентрации) значительных ресурсных потоков [9; 11]. Диссипативные структуры требуют, чтобы потоки энергии, информации и ресурсов, собственно создающие

самоорганизующиеся нелинейные динамические системы, для своего прохождения встречали минимальное сопротивление, генерируя тем самым постоянное давление в направлении перемен, это давление объясняет, почему организационные системы самоорганизуются.

**Второй принцип: свойства сложной самоорганизующейся системы не сводятся к сумме свойств ее частей**

Ключевое положение парадигмы сложности состоит в том, что самоорганизующиеся динамические системы обладают холистскими свойствами, которые обеспечивают их эмерджентность, которая может быть определена как процесс, посредством которого «паттерны или структуры глобального уровня возникают из интерактивных процессов локального уровня» [3, Р. 1059]. Это «нечто, чего раньше не было» имеет свойства, которые вообще не сводятся к чему-либо, прежде существовавшему — именно это и есть случай возникновения качества эмерджентности системы.

Исследователи сложности выражали принцип эмерджентности по-разному. Дж. Холланд описывает его как свойство «агрегации», которое проявляется как «возникновение сложного долговременного поведения из составного взаимодействия менее сложных частей» [6, Р. 11]. Р. Ив, М. Хорстхолл и М. Ли анализируют антиредуционистский настрой исследователей сложности. Они пишут: «В пределах любой системы возникают различные свойства, которые не являются просто совокупными свойствами составляющих ее частей. Другими словами, редуционизм — нежизнеспособный метод для изучения сложных систем. Знание свойств составляющих не является вместе с тем и знанием целого или крупных его частей. Эмерджентные, несводимые, но существенные свойства организаций включают политические коалиции, ценности, неформальные структуры и доминирующую логику» [5, Р. 10–11].

На наш взгляд продуктивную для исследования организационной сложности идею выдвигает американский исследователь Р. Мэрион, когда связывает сложность с более эффективным использованием ресурсов, и, тем самым, с повышением организационной адаптации. Он утверждает: «Возникновение или формирование нового организационного порядка обуславливается наличием ресурсного потенциала, который еще не доступен, но доступ к которому можно получить через создание или самоорганизацию коалиции или неформальной надорганизационной структуры, создающих большие возможности для

трансферта знаний и ресурсов, необходимых фирме для ее функционирования и развития» [7, Р. 34]. Здесь можно сделать, используя понятие самоорганизации сложных систем, обобщение такого характера: поскольку потребление ресурсов, технологий, информации является ключевой функцией фирмы, то скорость «переработки» этих факторов отражается на ее производительности, и, в конечном счете, эффективности ее работы.

**Третий принцип: существует тесная взаимозависимость между частями сложной системы и частей с системой как целостностью**

Представление об организации как о сложной динамической системе предполагает, что переход в процессе локальных, затрагивающих лишь отдельный элемент или подсистему изменений через барьеры, заданные доминирующей логикой, может вызвать серьезное изменение всей системы: «Если имеют место достаточно радикальные изменения, то организация может отойти довольно далеко от прежнего равновесия, чтобы преодолеть препятствия и перейти в новое равновесие, в котором будет развиваться новая доминирующая логика» — пишут Р. Беттис и К. Прахалад [9, Р. 12].

Наиболее интересны для исследования изменений в организационных системах такие случаи, когда незначительные воздействия на элемент, часть системы, которые можно назвать возмущениями микроуровня, приводят к непропорционально мощному ответу — изменениям — системы в целом, то есть на макроуровне. Такие, фиксируемые эмпирически эффекты позволяют утверждать, что в сложных динамических системах «отсутствует линейная логика воздействия и соответствующей реакции. При этом элементы системы не являются независимыми друг друга, и взаимодействия между ними носят нелинейный характер» [4, Р. 26].

**Четвертый принцип: сложная система непропорционально реагирует на внешние и внутренние воздействия, направленные на вывод ее из состояния равновесия**

Системная теория сложности показала, что сложные самоорганизующиеся системы обладают свой-

ством нелинейности, что означает, что их реакция, масштабы и качество изменений могут быть непропорциональными масштабу и величине движущих сил. Нелинейность означает, что незначительные по задействованным объемам энергии, вещества, человеческих ресурсов воздействия могут вызывать крупные организационные изменения. Однако такие воздействия должны осуществляться не в любое время и не в любом локусе системы. Должен быть подходящий момент и выявлено «слабое звено», неустойчивость в котором приведет в случае воздействия на него к крупным лавинообразным изменениям в организации. Это могут быть, например, изменения в финансовой подсистеме, подсистеме сбыта, подсистеме приема заказов, подсистеме маркетинга и т. д. «Предначертанность» предписываемых аттрактором системных организационных изменений проявляется в явлении изоморфизма изменений, то есть их схожести подобия, повторяемости. Можно предположить, что механизм, обеспечивающий изоморфизм изменений, подобен дарвиновскому естественному отбору, который оставляет право на существование не любым сочетаниям лучших индивидуальных признаков организмов, но только тем, которые в совокупности обеспечивают лучшую адаптацию.

Нелинейная системная динамика проявляется таким образом, что «при воздействии ниже определенного уровня, трансформационные (т. е. перестраивающие систему) изменения маловероятны, однако при воздействиях выше определенного предела, изменения неминуемы и пертурбации возрастают» [10, Р. 18].

Практическое значение для организационного управления этой идеи заключается в требовании сосредоточения в руках менеджмента, ответственного за изменения, достаточного количества ресурсов для того, чтобы вывести систему из прежнего стабильного состояния и перевести в новое. Если ресурсов недостаточно, но принято решение о проведении радикального изменения, высока вероятность, что они будут растрочены на расшатывание устойчивости системы, но при этом на проведение собственно изменения сил и средств будет недостаточно.

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## Section 5. World economy

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### Sustainable development: socioeconomic prerequisites

**Abstract:** Macro statistics socio-economic prerequisites for sustainable development of national economies. Socio-economic development is aimed at harmonizing the three pillars of sustainable development: economic development, environmental protection and social justice.

**Keywords:** sustainable development, socioeconomic development.

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### Устойчивое развитие: социально-экономические предпосылки

**Аннотация:** Макростатистические показатели социально-экономических предпосылок для устойчивого развития национальных экономик. Социально-экономическое развитие направлено на согласование трех основных составляющих устойчивого развития: экономического развития, охраны окружающей среды и социальной справедливости.

**Ключевые слова:** устойчивое развитие, социально-экономическое развитие.

Устойчивое развитие по формулировке комиссии Брундтланд это модель развития общества, при которой достигается удовлетворение жизненных потребностей нынешнего поколения без лишения такой возможности будущих поколений. Потребности у общества есть социальные, экономические и экологические, а именно индустриальное развитие, эффективное использование труда и пр. в области экономического роста; равенство, социальная мобильность, сохранение независимости и пр. в области социального развития; сохранение биоразнообразия, чистый воздух и вода, природные ресурсы в области экологической устойчивости.

Способствуя процветающей, инновационной, ориентированной на знания, конкурентоспособной и экологически эффективной экономике, которая обеспечивает высокий уровень жизни и высокое качество занятости, социально-экономическое раз-

витие направлено на согласование трех основных составляющих устойчивого развития: экономического развития, охраны окружающей среды и социальной справедливости.

Валовой внутренний продукт (ВВП) является наиболее известной мерой макроэкономической деятельности и рассматривается некоторыми как индикатор общественного прогресса. Тем не менее, по конструкции и назначению, на него нельзя полагаться в информировании по всем вопросам, связанным с политикой, и его недостатки в качестве меры благосостояния получают все более широкое признание. Тем не менее, ВВП тесно связан с целым рядом вопросов, весьма актуальных для экономического развития, таких как занятость или инвестиции в НИОКР. С учетом изменений в структуре производства и потребления, рост ВВП также связан с использованием ресурсов и изменением

климата, особенно, когда повышение ВВП не совпадает с аналогичными повышением эффективности использования ресурсов. Кроме того, наличие экономических ресурсов определяет потенциал технологических и научных инноваций, необходимых для перехода на «низкоуглеродную» и ресурсосберегающую экономику.

Реальный ВВП на душу населения шел вверх в долгосрочной тенденции, увеличившись на 2,6% в год в среднем за период с 2000 по 2015 год; мировая экономика сократилась на 2,9% в период между 2008 и 2009 годами в результате кризиса, но восстановилась в последующие годы. В период с 2009 по 2014 год реальный ВВП на душу населения вырос на 0,7% в год в среднем, что указывает на то, что идет хрупкое восстановление.

Реальный валовой внутренний продукт (ВВП) на душу населения в мире постоянно растет со средним темпом прироста 2% в год в период с 1995 по 2007; тенденция изменилась с нача-

лом экономического кризиса в конце 2008 года, а в 2009 году было отмечено снижение в 2,9%. Это было самое сильное падение за последние два десятилетия. В период с 2009 по 2011 год, реальный ВВП на душу населения возобновил рост, отмечено умеренное увеличение на 0,7% в год в среднем. С 2011 по 2015 год экономическая активность сократилась на 1,7%. В период с 2000 по 2015 год реальный ВВП на душу населения вырос на 2,6% в год в среднем, следуя вверх в долгосрочной тенденции. В краткосрочной перспективе, с 2009 года, среднегодовой темп роста был немного ниже на 0,7% из-за затянувшихся последствий экономического кризиса (Рисунок 1). Следует отметить, что реальный ВВП на душу населения варьируется по странам. Некоторые страны, особенно те, которые накопились крупные макроэкономические дисбалансы до 2008 года, были более подвержены влиянию кризиса и испытывали большие провалы в 2008 и 2009 годах, в то время как другие были затронуты в меньшей степени.

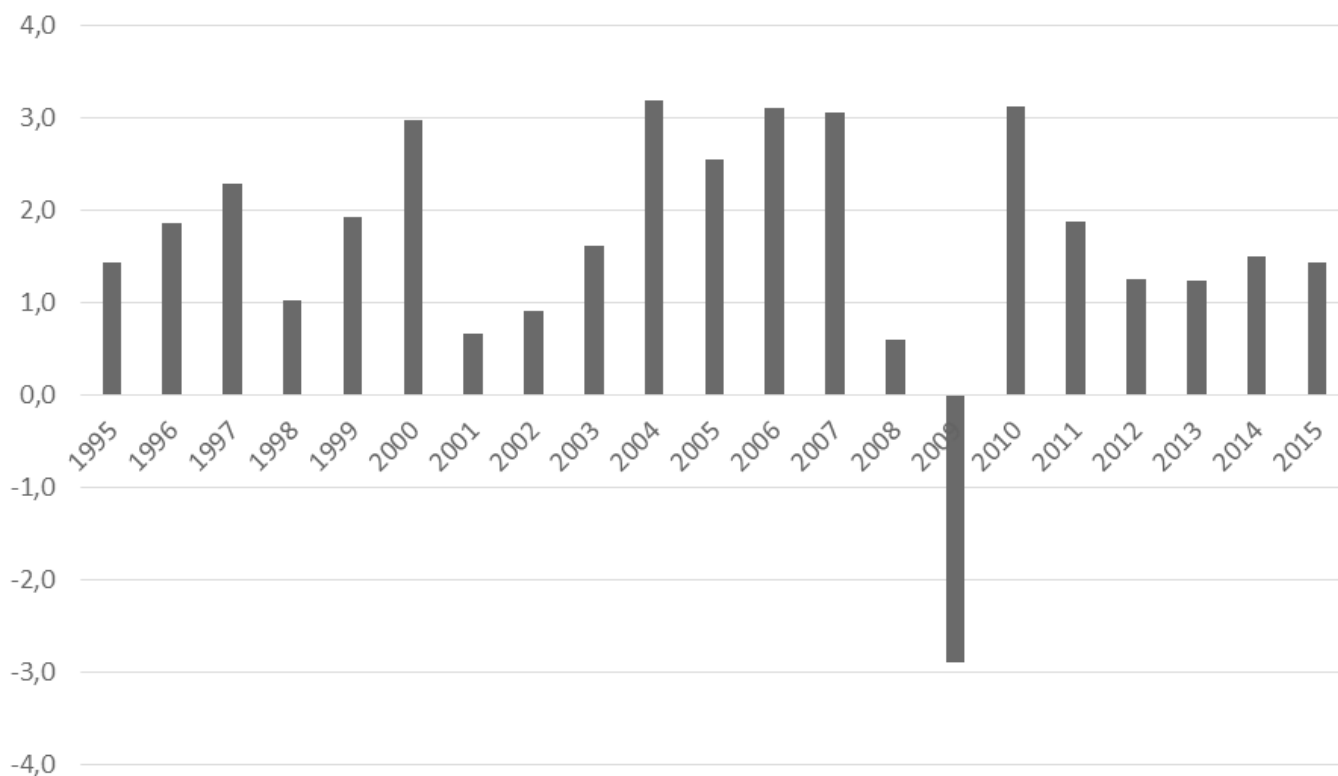


Рисунок 1. Прирост реального ВВП на душу населения в мире, 1995–2015, %  
Источник [7]

В период с 2000 по 2007 год наблюдались высокие среднегодовые темпы роста в Китае (9,9%), Российской Федерации (7,6%), Индии (5,2%), Южной Корее (4,8%). В противоположность этому, реальный ВВП на душу населения в некоторых странах вырос менее чем на 2% в год в среднем. Самые низкие темпы роста

наблюдались в Японии (1,4%), Мексике (1,3%). В Соединенных Штатах наблюдается темп роста 1,7%. Самое сильное снижение роста ВВП на душу населения в период с 2007 по 2014 год наблюдалось в странах Европейского Союза, Соединенных Штатов Америки и Российской Федерации (Рисунок 2).

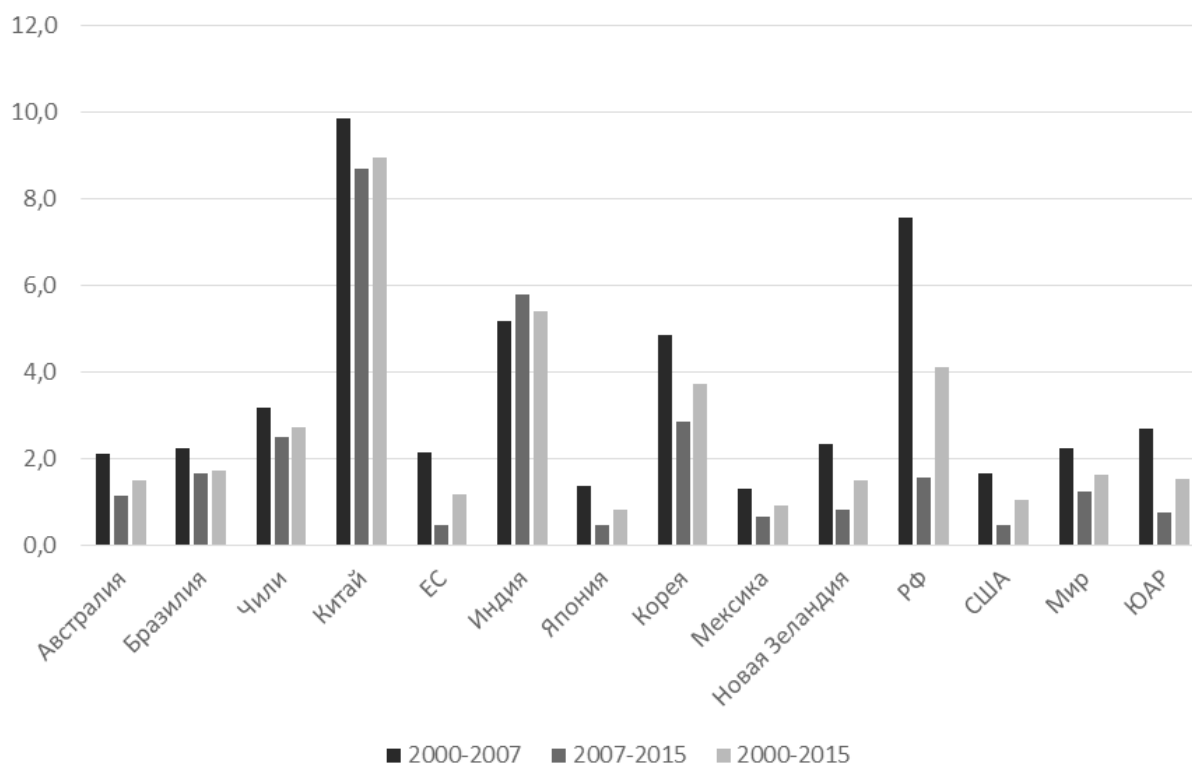


Рисунок 2 . Прирост реального ВВП на душу населения по странам, 2000–2007, 2007–2015, 2000–2015,%. Источник [7]

Устойчивый экономический рост достигается за счет повышения производительности, как внутри секторов, так и за счет перехода на секторы, которые генерируют более высокую добавленную стоимость, и которые дают преимущества для работников, работодателей, и экономики [7, 16]. Умеренный рост вернулся в крупные экономики, когда последствия мирового кризиса начали медленно отступать. Тем не менее, экономические показатели расхирились по регионам и восстановление, как ожидается, останется неравномерным. Среди стран с развитой экономикой, рост устойчив в Соединенных Штатах и, как ожидается, останется сильным за счет улучшения внутреннего спроса и низкой стоимости энергии. Япония пережила более слабое восстановление после экономического спада из-за снижения внутреннего спроса и частных инвестиций. Что касается стран с формирующейся рыночной экономикой, темпы роста были значительными в Китае и Индии. В отличие от этого, ВВП сократился в России из-за падения нефтяных доходов и политической напряженности, а также остался слабым в Бразилии и Южной Африке. Экономический подъем был в ЕС медленнее, чем в других странах с развитой экономикой. Ожидается, что он останется слабым во многом из-за затянувшихся последствий кризиса евро зоны, неблагоприятного инвестиционного климата и медленных темпов осуществления реформ.

Экономическое измерение социально-экономического развития анализируется с точки зрения располагаемого дохода домашних хозяйств и сбережений населения. Располагаемый доход домашних хозяйств является важным средством для достижения более высокого уровня жизни, так что имеет решающее значение для социальных целей устойчивого развития. Норма сбережений домохозяйств также играет важную роль, особенно в обеспечении ресурсов и возможности справедливого распределения ресурсов между поколениями. Она определяет объем финансовых ресурсов, доступных для инвестирования в улучшение запаса продуктивного, природного и человеческого капитала.

Располагаемый доход населения в мире в среднем вырастает на 2% в год. Наиболее активный рост располагаемого дохода населения наблюдается в Австралии (3.9%), Канаде (3.1%), Новой Зеландии (3.1%), Корею (2.6%). В последние годы наблюдается снижение темпа прироста располагаемого дохода населения. С 2008 по 2013 средний темп прироста располагаемого дохода населения в Австралии составил 3.2%, в Новой Зеландии — 2.3%, в США — 1.2%. Единственной экономикой, где наблюдает увеличение темпа прироста оказалась Япония (0.8%). В Европейском Союзе же напротив с 2008 по 2013 в среднем наблюдается снижение располагаемых доходов населения (Рисунок 3).



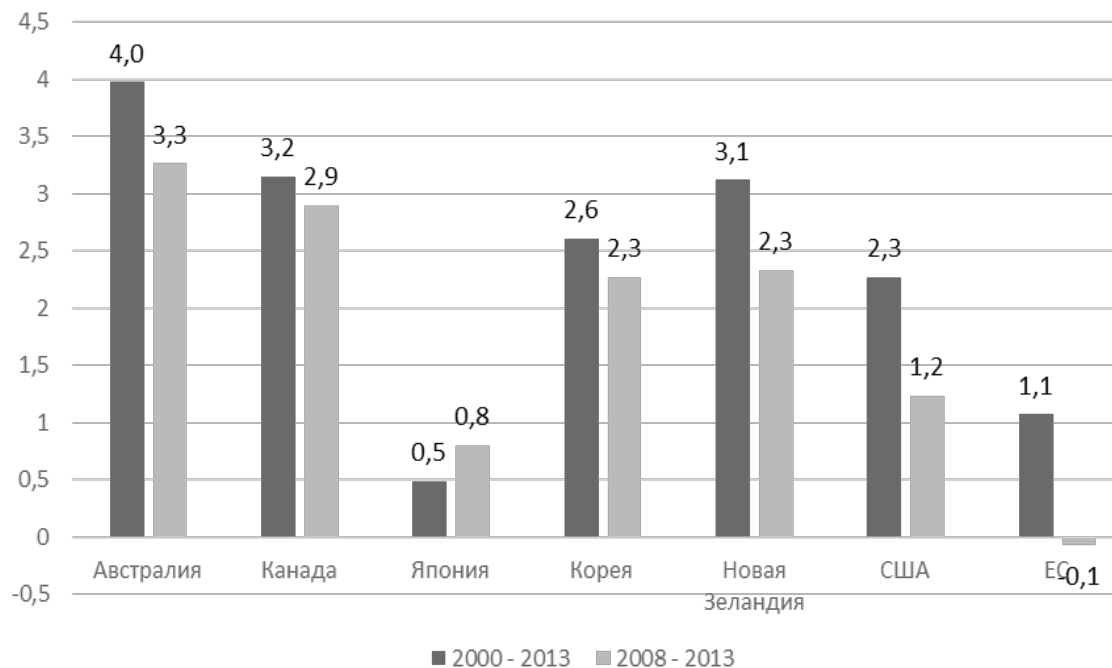


Рисунок 3. Изменение располагаемого дохода населения по странам, 2000–2013, 2008–2013, % Источник [4]

В 2013 году норма сбережений домашних хозяйств в разных странах варьируется от 0,02% в Японии до 38,4% в Китае. Отрицательные и нулевые показатели говорят, что в среднем домохозяйства в этих странах потратили все свои регулярные доходы или больше, чем их регулярный доход и финансировали разницу за счет кредитов, продажи активов или траты наличных денег и депозитов. Средние показатели сбережений домохозяйств также были низкими в Новой Зеландии (2%), США (5,2%) и Канаде (5,2%). На другом конце спектра был Китай со сбережениями домохозяйств значительно выше среднего мирового по-

казателя (38,4%). В Чили, Японии, Корее и Мексике с 2005 г. произошло снижение нормы сбережений домашних хозяйств. В Австралии, Канаде и Новой Зеландии, напротив, произошло значительное увеличение нормы сбережений. В частности, в Новой Зеландии в 2005 году был отмечен отрицательный показатель –5,4%, а в 2013 была зарегистрирована положительная норма сбережений 2% (Рисунок 4). Вариации показателей в разных странах могут быть результатом комбинации факторов, включая, среди прочего, различия в налоговых ставках, инфляции, пенсионных системах, ценах на акции и жилье, и реальных процентных ставок.

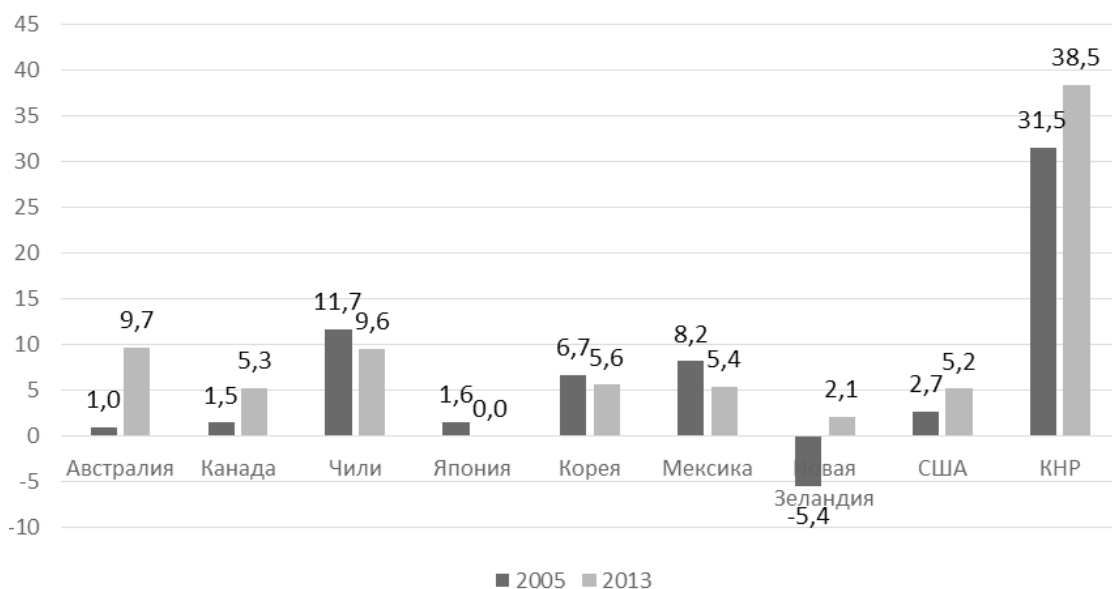


Рисунок 4. Норма сбережений домашних хозяйств по странам 2005 и 2013 г., % Источник [4]

Возможности экономики для инноваций, конкурентоспособности и экологической эффективности анализируются с помощью показателей расходов на НИОКР, производительности труда, эко-инноваций и энергоемкости. Девятая цель устойчивого развития призывает страны создать устойчивую инфраструктуру, содействовать всесторонней и устойчивой индустриализации и стимулировать инновации. Одним из показателей инноваций является интенсивность научных исследований и разработок, измеряемая как расходы на исследования и разработки в процентах от ВВП. [7, 21] Доля расходов на НИОКР, через связь с образованием, инновациями, занятостью, производительности труда и экономического роста, имеет решающее значение для процветания и конкурентоспособности экономики. Расширение научно-технических знаний может помочь обществу справиться с некоторыми из наиболее острых проблем, таких как изменение климата, старение населения, рынка труда и достижения безопасности материально-технического снабжения. Эко-инновации позволяют увеличить экономическое процветание при сохранении окружающей среды и более эффективном использовании природных ресурсов. Формирование человеческого капитала (навыки, знания и опыт, которыми обладают индивидуумы или группы населения) посредством образования и профессиональной подготовки увеличивает уровень академических знаний и инновационных технологий, которые, в свою очередь, способствуют созданию новых рабочих мест, росту производительности труда и эффективности использования ресурсов. Производительность труда является важным фактором, определяющим будущую конкурентоспособность и долгосрочный экономический рост экономики.

Устойчивый экономический рост, однако, если не уравновешивается улучшением экологической эффективности, может привести к повреждению окружающей природной среды и поставить под угрозу экосистемы, тем самым существенно влияя на благосостояние в долгосрочной перспективе. Устойчивое развитие опирается на обеспечение экономического процветания при одновременной минимизации нагрузки на окружающую среду и избегании чрезмерной эксплуатации ресурсов. Энергоемкость экономики имеет важное значение в этом отношении, поскольку она подчеркивает прогресс в отделения экономического роста от ухудшения состояния окружающей среды. Седьмая цель устойчивого развития призывает страны коллективно удвоить глобальные темпы повышения энергоэффективности, и техниче-

ский прогресса и переход от энергоемких видов деятельности может поддержать этот процесс. Уровень энергоемкости показывает энергоэффективность, или сколько энергии используется для производства одной единицы экономической продукции. Более низкое соотношение указывает на то, что меньше энергии используется для производства одной единицы продукции [7, 15].

Производительность труда в ОЭСР постоянно увеличивается в период между 2000 и 2015 гг., и эта тенденция не была прервана началом экономического кризиса в 2008 году и последующим ухудшением экономических условий. Однако сегодня мир продолжает ощущать последствия экономического спада через восемь лет после начала кризиса. В 2010 году сильный рост производительности ознаменовал начало глобального восстановления, однако темп восстановления был необычайно слаб и рост производительности труда в странах ОЭСР остается ниже докризисного уровня. [4, 20] Замедление роста производительности во время экономического спада может отражать слабые инвестиции в условиях высокой экономической неопределенности, что приводит к медленному накоплению капитала. В 2015 году выработка на одного работающего увеличилась до 50,5 долларов в час (Рисунок 5). Во время экономического подъема, производительность первоначально росла активнее, поскольку компании увеличивали интенсивность работы сотрудников, а не нанимали новых работников. Тем не менее, поскольку фирмы начинают брать больше работников это повышение производительности, вероятно, выровняется.

Все крупные экономики извлекли выгоду из повышения производительности труда в период между 2000 и 2015 гг. Повышение производительности труда было наиболее выражено в Чили (116%), Южной Корее (100%) и Российской Федерации (212%) [4]. Это может быть результатом более эффективного использования рабочей силы или накопления физического и человеческого капитала. Это также может быть связано с большим сдвигом от отраслей и видов экономической деятельности с низким уровнем производительности до тех с более высокими уровнями, даже если деятельность сама по себе не стала более продуктивной.

В уровне продуктивности наблюдаются существенные различия между странами, на одном полюсе высокая продуктивность в США (68), Австралии (56), на другом низкая продуктивность труда в России (25), Мексике (19).

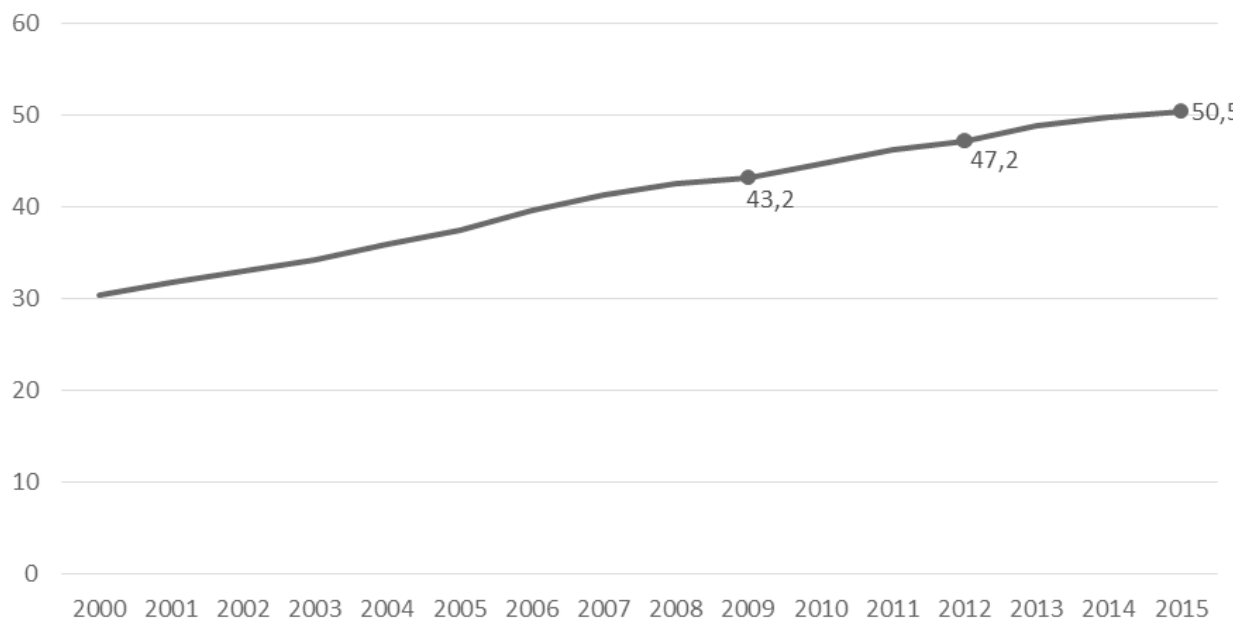


Рисунок 5. Производительность труда в ОЭСР, 2000–2015, долл. в час. Источник [4]

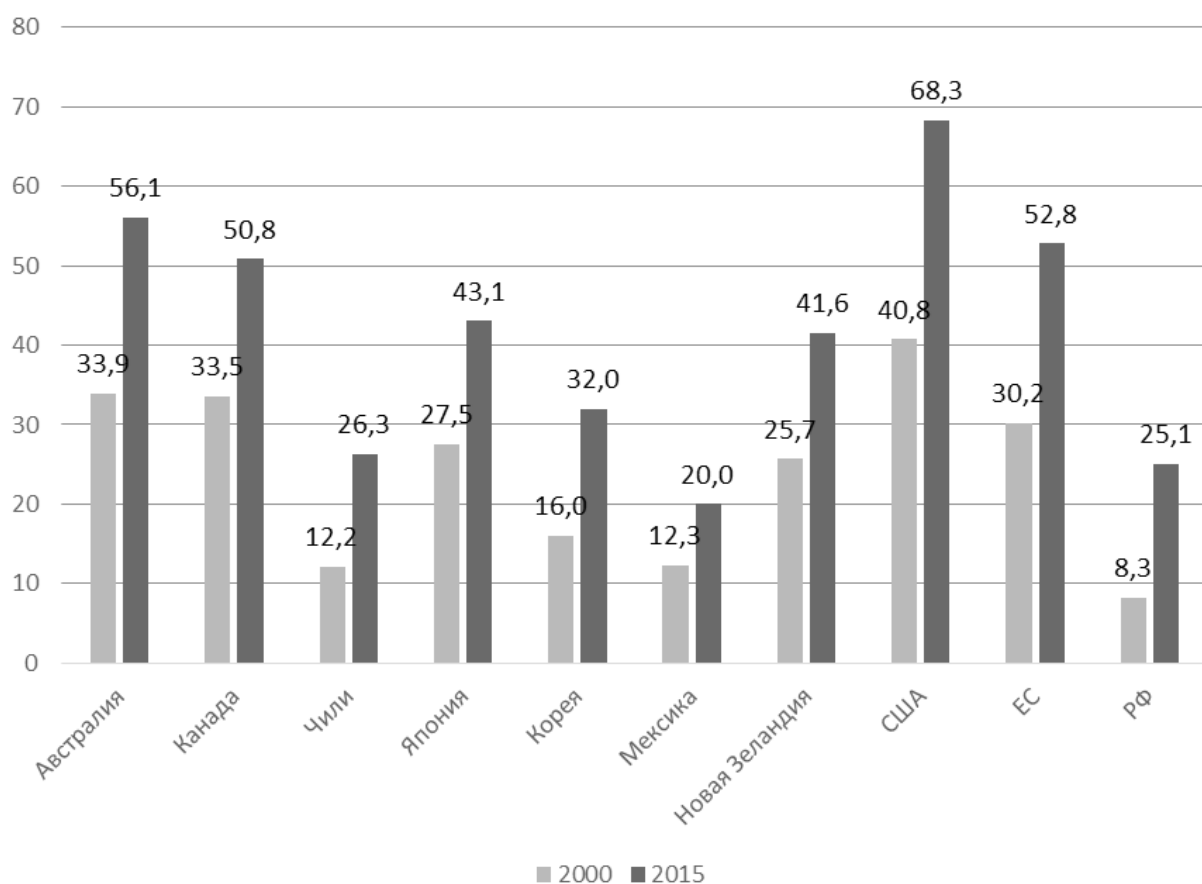


Рисунок 6. Производительность труда по странам, долл. в час, 2000 и 2015 г. Источник [4]

В странах ЕС ведется статистический учет инновации в области экологических технологий, продуктов и услуг (эко-инновации). При этом наблюдаемые показатели существенно отличаются во всех странах ЕС. В 2013 году десять государств-членов выступили лучше, чем в среднем по ЕС с точки зрения эко-инновационной деятельности. Финляндия, Швеция

и Германия получили самые высокие оценки, формируя группу «эко-инновационных лидеров в ЕС. Тем не менее, эти страны не обязательно являются лучшими с точки зрения экологических последствий, так как умеренная корреляция наблюдается между относительно высокими эко-инновациями и материальным потреблением, и выбросами парниковых

газов [5, 23]. На другом конце шкалы, эко-инноваций был наименее заметным в Болгарии, Польше, Кипре и Словакии (Рисунок 7). Индекс эко-инноваций показывает, насколько хорошо отдельные государства выступают в области эко-инноваций по срав-

нению со средним показателем в ЕС. Она основана на 16 показателей в пяти областях: вклад эко-инноваций, эко-инновационная деятельность, результаты эко-инноваций, экологические показатели и социально-экономические последствия [2, 24–27].

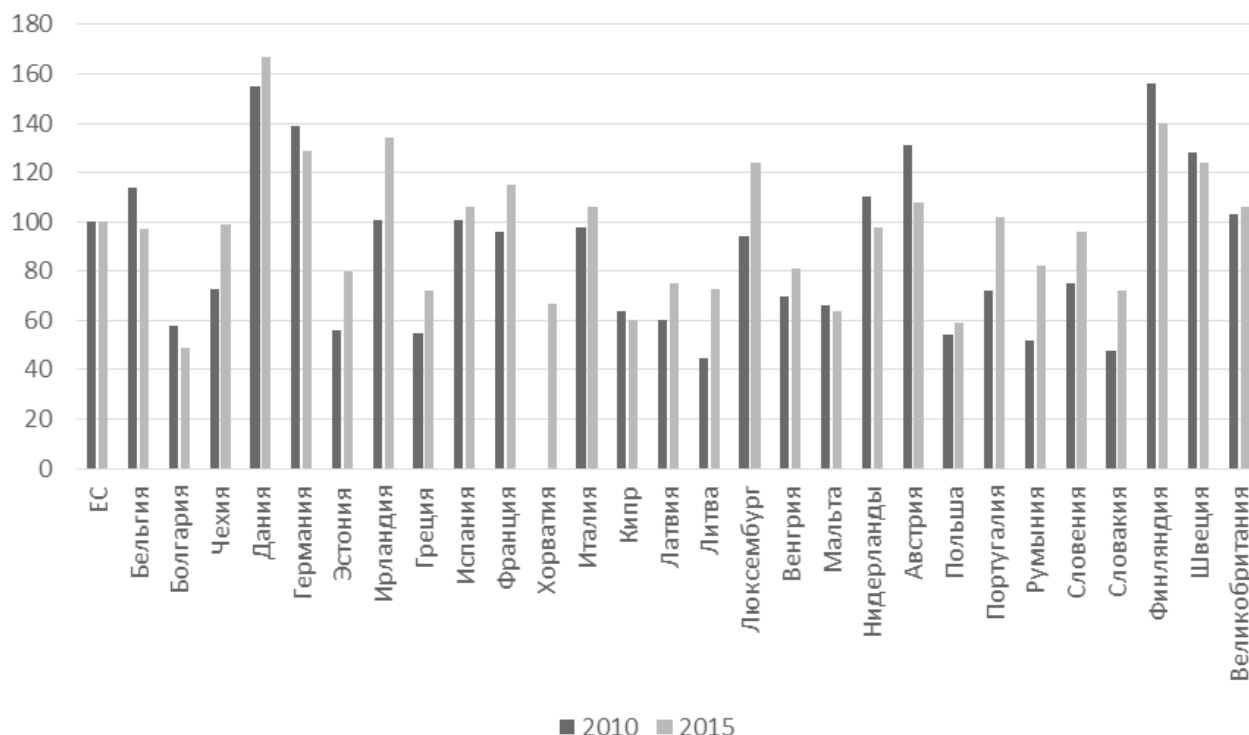


Рисунок 7. Индекс эко-инноваций по странам ЕС, 2010 и 2015 г. Источник [1]

В период с 2001 по 2007 год доля расходов на НИОКР в ВВП в мире оставалась относительно стабильной, около 2%, с тенденцией к снижению с 2,1% до 1,95%. Несмотря на замедление экономи-

ческой активности в период кризиса, зафиксировано незначительное увеличение интенсивности НИОКР по сравнению с 1,95% ВВП в 2007 году до 2,1% ВВП в 2012 году (Рисунок 8) [6, 20].

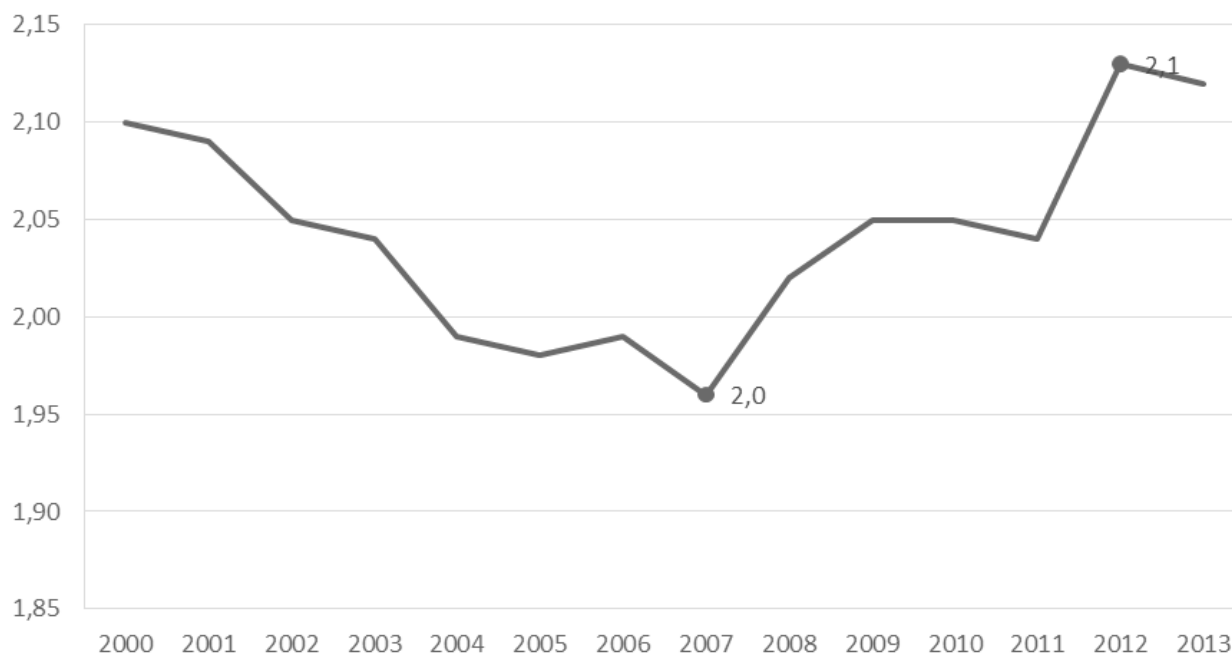


Рисунок 8. Доля расходов на НИОКР в ВВП в мире, 2000–2013, % Источник [7]



Одной из причин увеличения интенсивности НИОКР после финансового и экономического кризиса является то, что ВВП упал более быстрыми темпами, чем расходы на НИОКР. Кроме того, отдельные страны выступили с целью поддержки государственных расходов на НИОКР, чтобы смягчить последствия кризиса и стимулировать экономический рост.

В мире доля расходов на НИОКР варьируется по странам от 0,5% до 4% от ВВП. Наиболее высока доля расходов на НИОКР в ВВП в Японии (3,5%), Корее (4,1%). При этом Корея почти вдвое увеличила расходы на НИОКР с 2000 г. Кроме этих стран границу в 2% от ВВП перешли Австралия, КНР, США и страны Европейского Союза (Рисунок 9).

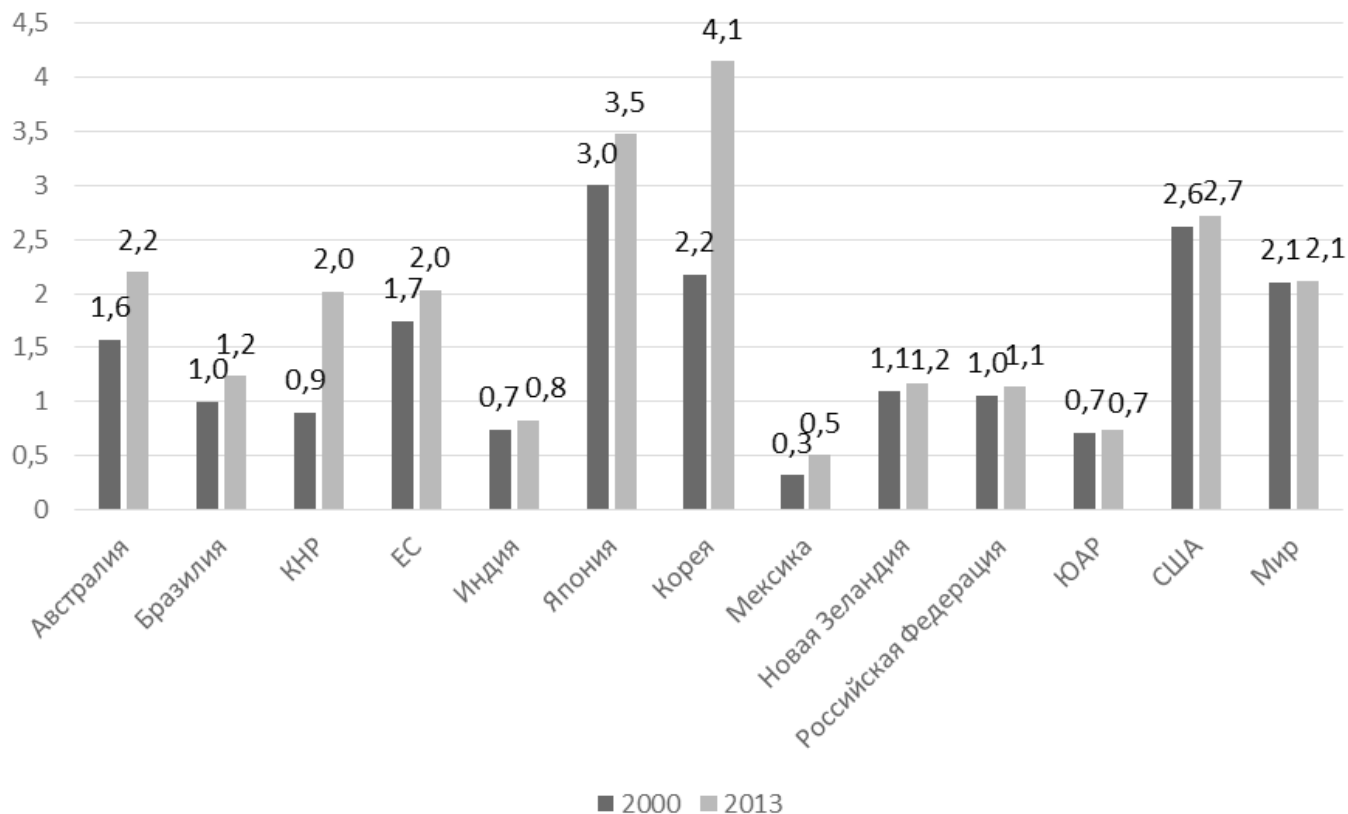


Рисунок 9. Доля расходов на НИОКР в ВВП, по странам, 2000 и 2013 г. Источник [7]

Энергоемкость — энергия, используемая для производства одной единицы экономической продукции — существенно снизилась за последнее десятилетие. В период с 2002 по 2013 год энергоёмкость зафиксировала падение на 16%, что указывает на снижение степени корреляции потребления энергии от экономического роста. Декаплинг потребления энергии от экономического роста имеет важное значение для согласования экономических и экологических целей. Снижение энергоёмкости может наблюдаться как при наличии абсолютного декаплинга (падение потребления энергии, несмотря на экономический рост) и относительного декаплинга (потребление энергии растет более медленными темпами, чем экономический рост). Энергоемкость имеет тенденцию следовать за экономическим циклом. Между 2003 и 2008 энергоёмкость в мире неуклонно снижается, в основном по-

тому, что ВВП растет более быстрыми темпами, чем валовое внутреннее потребление энергии. Во время экономического спада, с 2008 до 2009 года ВВП сократился, но энергоёмкость также снижается из-за уменьшения потребления и производства (Рисунок 10). Снижение энергоёмкости в 15,5% за последнее десятилетие происходило под влиянием повышения энергоэффективности (как с точки зрения конечного потребления так и производства электроэнергии), а также переход к использованию возобновляемых источников энергии в структуре выработки электроэнергии. Повышение экологической эффективности, которое нашло отражение в пониженной энергоёмкости, также происходило в результате структурных экономических изменений. К ним относятся переход к основанной более на секторе услуг экономике и менее энергоёмким отраслям с более высокой добавленной стоимостью.

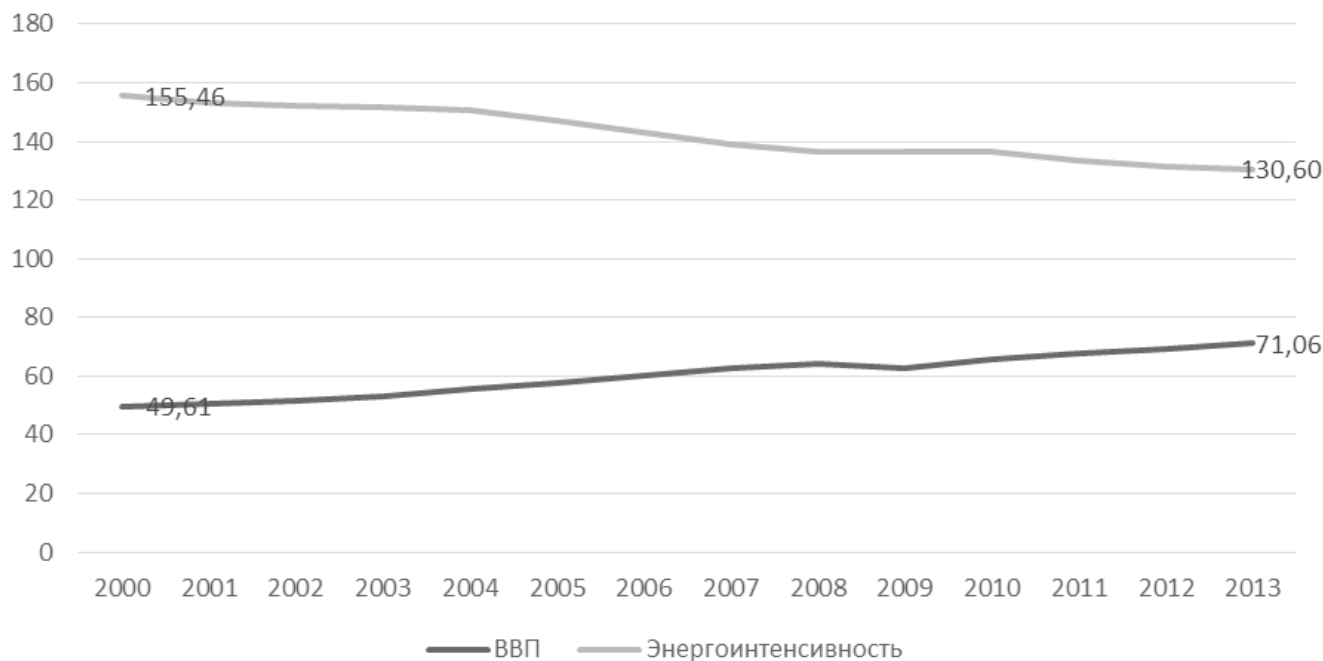


Рисунок 10. Энергоемкость в мире, кг. топлива на 1000 долл. ВВП, 2000–2013 г. Источник [7]

Переход к устойчивому развитию делает необходимым включение экологического фактора в систему основных социально-экономических показателей развития. Во многом применяемые в процессе принятия решений экономические и финансовые показатели, которые не в полной мере отражают реальные экономические, социальные и экологические процессы, и привели к глобальному кризису. Так, ВВП, классический и наиболее распространенный в мире показатель, является примером индикатора, некорректного с точки зрения устойчивости развития.

Из-за того, что хозяйственная деятельность напрямую зависит от условий, в которых она осуществ-

ляется, общественно-политического устройства, уровня развития, внешнего политико-экономического окружения страны, во-первых, достижение всеобщего равенства и благополучия является невозможным, во-вторых, основные усилия по достижению целей устойчивого развития должны быть активизированы на уровне стран. В контексте устойчивого развития факторы экономического роста с одной стороны должны рассматриваться как явления и процессы, которые обеспечивают развитие и увеличивают масштабы производства, с другой — сводят к минимуму негативные последствия хозяйственной деятельности.

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## Financial globalization and economic development

**Abstract:** The purpose of this paper is to evaluate the impact of financial globalization on economic growth. Advantages and disadvantages have been analyzed, applying various theoretical aspects, as well as empirical data for the period of 2000–2011.

**Keywords:** Financial globalization, financial integration, GDP growth, developing countries.

The worldwide practice combines dozens of articles about how to stimulate economic growth and what factors contribute to this process. However, the majority of the studies are concentrated on country/region-specific problems and underline individual topics, such as the banking sector, the evolution of insurance industry, taxation, regulatory frameworks, etc. Despite the abundance of various papers, there is no clear and unambiguous answer on how globalization and financial integration affects economy.

The topic of financial globalization and its impact on socio-economic environment became popular among the world's leading economists over the past decades. Special attention was devoted to the case of developing countries. According to one of the most popular definition, financial globalization is the movement of foreign goods and services, foreign direct investments, foreign capital and commercial transactions between the domestic and international markets. In other words, it could be described as integration of local financial system with international financial markets and institutions [4].

Formation of world market and capitalistic systems, technological achievements in the field of communication and transportation, increased foreign economic activities between countries, production efficiency, sophistication of management and other economic/political factors have led to the creation of financial globalization. In addition, a significant contribution comes from development of financial markets, transnational corporations and international institutions.

There are different opinions regarding positive and negative aspects of globalization. Supporters talk about

economic and technological achievements that accompany this process, while anti globalists, mainly, argue that globalization wiped out culture and identity of smaller countries, such as Georgia. Globalization allows people to benefit from free trade, satisfying customer requirements and utilizing world's resources in the most efficient way. All of this lead to increased competition, innovations and improved living standards. On the other hand, globalization deepens inequality and poverty, as well as significantly contributes to the creation of financial and currency crises.

According to research conducted by International Monetary Fund (IMF), in theory there are number of direct and indirect channels, through which financial integration (financial globalization) can have positive impact on economic growth in developing countries [2]. For instance, we can consider several direct factors from the same study:

1) Increase of domestic savings: because of augmented savings, the capital flow grows from developed to developing countries, which is beneficial for both sides. On the one hand, developing countries receive access to more money and are able to complete various projects. While, on the other side, developed countries receive higher return on investments, because such investments are considered to be more risky, and therefore, have higher profits. Ultimately, all of this diminishes risk-free rate in developing countries.

2) Fostering the development of domestic financial sector: international capital flows rise the liquidity of domestic stock markets. Foreign ownership of domestic banks can also be associated with various benefits. For

example, the participation of foreign banks can increase an access to international financial markets. Besides, it helps to develop and improve the legal framework and control standards in the domestic banking industry. It should be mentioned as well, that in many cases, foreign banks introduce new financial products. All of this increases the level of competition and the quality of service on internal market.

3) Decrease in the cost of capital through better risk allocation: Financial globalization improves risk allocation process, which means that local and foreign investors have opportunity to diversify risks more efficiently. In addition, an increase of capital flow rises liquidity in the domestic

stock market, which reduces the market risk premium in turn, therefore — cost of capital diminishes.

Despite abovementioned positive theoretical factors, numerous empirical studies conducted by economists, suggest that the relationship between economic growth and financial globalization is not necessarily positive. In particular, their results revealed to differ in some countries, having negative and partially positive correlation, as per IMF research [4]. Similarly, we conducted empirical analyses of several countries to evaluate the relationship between financial integration and GDP growth (see below charts). We utilized time-series data for the period of 2000–2011.

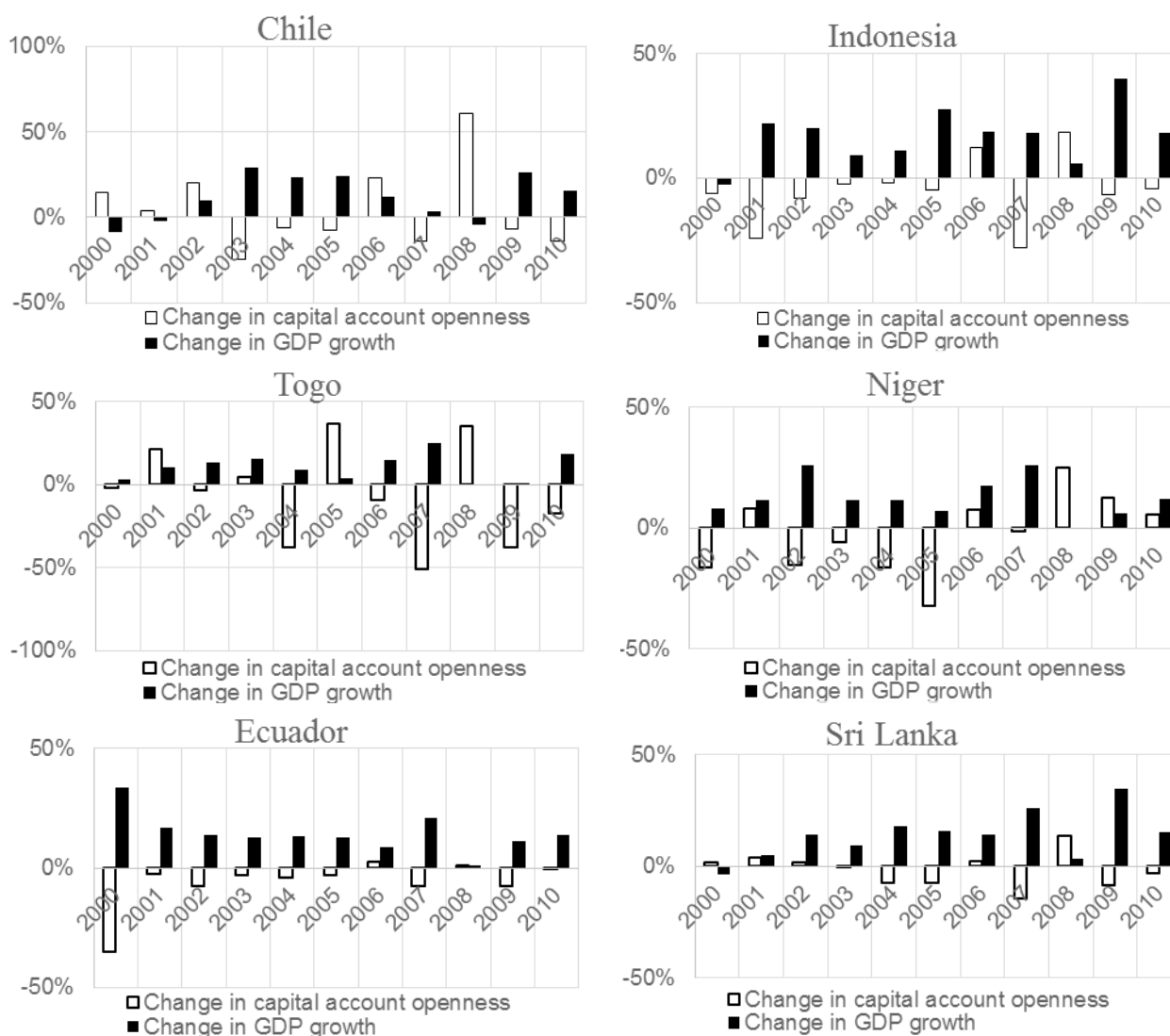


Figure 1.

Note<sub>1</sub>: Capital account openness is measured as a country’s aggregate assets plus liabilities as a percentage of GDP, and includes the categories of foreign direct investment, portfolio equity investment, external debt, and official reserves.

Note<sub>2</sub>: GDP is in (current US\$).

Source: Own calculations based on the World Bank’s World Development Indicators (WDI) Database and Lane & Milesi-Ferretti’s (2011) index (total).

As our results exposed, in some countries financial globalization and economic growth have negative correlation. This supports opinion that countries with no (or



limited) financial integration can still achieve significant economic growth. This is clearly shown in the case of Indonesia. In year 2009 Indonesia's GDP growth reached 40%, while its capital account openness was negative for the same year. Another conclusion, which can be derived from the charts above is, that financial integration is not sufficient condition for economic growth. As it is illustrated in Chile's example, the country's capital account openness has increased by 60% in 2008, while GDP growth was down by 4%.

Furthermore, apart from direct impact-channels, the financial globalization is characterized by indirect factors, through which it stimulates economic growth. For instance, economists believe that the country's willingness towards financial integration can be seen as indicator of future loyal policy of attracting foreign investments. This can be expressed by creating a favorable environment for investors and various deregulation policies. Therefore, the country's readiness to become a part of financial globalization is considered as indirect impact factor on economy [2].

In our opinion, one of the most important factors of (financial) globalization is a psychological aspect, which also belongs to a group of an indirect impact channels. Rapid pace of development of globalization has led to the changes in psychology of consumers, business entities, managers and others.

Globalization provided opportunity for big companies and brands to develop further and become global leaders on the market. Consequently, nowadays people trust and consume better-known products, gradually becoming addicted to international brands. This further enhances the market position of big and transnational companies, and to some extent, prevents development of local products. On the other hand, however, contributes to the formation of competitive environment, and thus increases efficiency. Additionally, having vast choice of goods, globalization made consumers more wary, demanding and "pretentious". The worldwide threat of genetically modified products (GMO) has further increased consumers' precautions.

In line with enlarged competition and consumers' caution, entrepreneurs (companies) are forced to become more active and seek different ways for development, to meet local demand. Otherwise, they will be "swallowed" by bigger and stronger companies. Business entities are continuously trying to advance technologies, sophisticate their operations, improve efficiency indicator (s), seek opportunities to enter new markets etc. All this is caused by the psychological fear, which is based on raising awareness of globalization — "development, or financial collapse". Companies are conscious that without permanent development of their business, financial failure is imminent.

With amplified financial integration, management's psychology has experienced changes, as well. Proper management and timely/effective decision-making process is one of the vital factors in successful business environment. Accordingly, the management bodies are trying to devote more time and money to increase professionalism of their employees. The management's awareness, that the competence and "know-how" are essential, is that indirect factor, which is affected by financial globalization. On its turn, "know-how" is positively correlated with economic growth. However, it should be mentioned that economists [6] consider managerial "know-how" as a direct impact factor on economy. For instance, according to study conducted by IMF, financial integration escalates flow of foreign direct investments from one country to another. The accompanying element of this is a transfer of managerial knowledge. As a result, we get an increased level of productivity and economy.

To conclude, the impact of financial globalization varies across different countries, changing their economic environment. In our opinion, it is impossible to speak of the consequences of globalization in advance, since the globalization process itself is influenced by various economic and social factors. As a result, in assessment of advantages and disadvantages of financial integration the researchers should pay significant attention to the risks associated with the globalization process.

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## Section 6. Regional economy

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### Regional features of the Russian Federation in international economic relations

**Abstract:** It should be noted that it is not in full, at the moment, affect the complex problems of the Russian Federation, including their regional characteristics [1, 230].

**Keywords:** subjects of the Russian Federation, foreign economic activity, regions of Southern Russia.

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### Региональные особенности субъектов Российской Федерации во внешнеэкономических отношениях

**Аннотация статьи:** Следует отметить, что не в полной мере, на текущий момент, затрагивают комплекс проблем субъектов Российской Федерации, в том числе их региональные особенности [1, 230].

**Ключевые слова:** субъекты Российской Федерации, внешнеэкономическая деятельность, регионы Юга России.

Понятие внешнеэкономической деятельности (ВЭД) в нашей стране появилось с началом осуществления внешнеэкономических реформ. В результате, в процессе проведения внешнеэкономических реформ сложилось два понятия: внешнеэкономические связи (ВЭС) и внешнеэкономическая деятельность, последнее из которых изменило существующее ранее значение и характер ВЭС [2, 174].

Переход к открытой рыночной экономике требует преобразований во внешнеэкономической сфере с тем, чтобы обеспечить включение России в мировое хозяйство. Необходимость преобразований определяется:

1. неблагоприятной структурой внешнеторгового оборота;
2. распадом СССР.

В современных условиях интеграция экономической жизни идёт по многим направлениям, в частности, через:

- обмен средствами производства, технологиями, информационными структурами;
- развитие торговли;
- рост обмена научно-техническими знаниями;
- международную миграцию рабочей силы [3, 31].

На рубеже XXI века внешнеэкономические связи и внешнеэкономическая деятельность России переживают сложный период глубоких качественных преобразований, связанных с осуществлением реформ и поиском путей интегрирования в систему мирохозяйственных отношений.

Основными тенденциями развития внешнеэкономической деятельности в современных условиях могут быть:

1. восстановление и развитие экспортного потенциала страны;
2. использование иностранных кредитов для технического переоснащения;
3. повышение конкурентоспособности российских товаров на внешнем рынке на основе модернизации производства;
4. изменение структуры импорта за счёт увеличения удельного веса продукции промышленного производства в форме высокоточных технологий;
5. обеспечение экономической безопасности страны за счёт совершенствования экспорта и импорта [4, 245].

На всех исторических этапах развития России внешнеэкономическая деятельность оказывала влияние на решение экономических проблем на различных уровнях: народного хозяйства в целом, отдельных регионов, объединений, предприятий.

В современных условиях ход экономической реформы в России определяется тем, что центр тяжести всё в большей степени переносится на места, то есть в регионы. На региональном уровне, так же как и на государственном, происходит становление системы управления вообще и внешнеэкономической деятельности в частности [5, 441–448].

Система и методы региональных исследований постоянно совершенствуются. Основная методологическая задача заключается в решении общих и частных теоретических и практических проблем по двум взаимосвязанным направлениям:

1. научное предвидение и всестороннее обоснование процессов и тенденций, определяющих эффективное размещение производительных сил в различные периоды экономического развития страны;
2. выявление многосторонних факторов и научное обоснование системы целенаправленного формирования экономического и социального развития отдельных регионов, находящихся в различных природных условиях и на разных стадиях экономического развития [6, 76–86].

Совершенствование и развитие внешнеэкономической деятельности регионов Юга России в условиях становления рыночной системы хозяйствования способно стать эффективным фактором оздоровления и последующего развития не только экономики региона, но и всей страны. Как составная часть хозяйственного комплекса внешнеэкономическая деятель-

ность должна воздействовать на совершенствование внутривозрастных пропорций, развитие производительных сил, повышение уровня занятости населения. Решение этих проблем важно для всех регионов, но особую актуальность они приобрели для Юга России.

Внеэкономическая деятельность субъектов этого субфедерального образования имеет разнобразную динамику и структуру, однако используется недостаточно.

Однако в условиях становления рыночных отношений обозначилась разная степень готовности отдельных регионов России к развитию внешнеэкономической деятельности. К основным факторам, определяющим социально-экономическую ситуацию в регионах Юга, относятся имеющиеся производственный потенциал, географическое положение, природно-климатические факторы, ресурсный потенциал, демографический потенциал и структура населения, структура и специализация хозяйства, объемы иностранных инвестиций, экспорт, а также степень государственного влияния на экономику [7, 69–71].

В соответствии с общими принципами государственного устройства России федеральные законодательные акты, указы и распоряжения Президента, постановления Правительства Российской Федерации, нормативные акты федеральных органов исполнительной власти в установленном порядке действуют на всей территории Российской Федерации. Все это в полной мере относится к сфере внешнеэкономической деятельности (ВЭД). Вместе с тем это не означает, что у субъектов федерации нет никаких прав в сфере внешних отношений с иностранными государствами, их субъектами и фирмами.

Необходимость единой внешнеэкономической политики и внешнеэкономической линии РФ и ее составных частей диктуется единством и взаимозависимостью хозяйственного комплекса страны. Механизм внешнеэкономической деятельности как часть целостной системы организации и управления хозяйственным комплексом страны призван расширить хозяйственную самостоятельность всех участников внешнеэкономических связей. Повышение роли региональных органов в хозяйственной деятельности предполагает их участие во внешнеэкономической деятельности как важного звена, регулирующего, координирующего и стимулирующего ВЭД на подведомственной территории. Осознание субъектами Федерации полезности скоординированных действий во внешних делах дает широкие возможности в воз-



действии на деятельность государства, в том числе и в области ВЭД [8, 243–254].

Разграничение предметов ведения — это вопрос об отношениях между Федерацией и ее субъектами, а вопрос о разграничении компетенции и полномочий касается отношений между отдельными видами федеральных органов и органов субъектов Федерации.

В предметах ведения выражаются и конкретизируются функции государства. Для более успешной реализации они могут быть распределены между государством в целом (Федерацией) и его составными частями (субъектами Федерации). И здесь возникает один из сложнейших вопросов государственного строительства — оптимальность распределения сфер деятельности предметов ведения Российской Федерации и ее субъектов.

После принятия Конституции РФ 1993 г. возникало и возникает много сложностей с реализацией предметов ведения как Российской Федерацией, так и ее субъектами. Со всей остротой эти проблемы встают и при осуществлении в последнее время укрепления вертикали государственной власти.

Проблема определения компетенции федеральных органов власти является главной и наиболее сложной в любом федеративном государстве. Федерация не может обладать неограниченными полномочиями по управлению страной, она обязана делиться этими полномочиями с субъектами Федерации, без чего государственная власть не может носить демократический характер. Субъекты Федерации заинтересованы в существовании сильной федеральной власти, наделенной широкими полномочиями для защиты и обеспечения общих интересов. Но в то же время они не хотят утратить своей самостоятельности и обладать правом решать лишь второстепенные вопросы жизни своего населения. Это — объективное противоречие любой федерации, заставляющее власти тщательно и оптимально проводить разграничение компетенции государственных органов федерации и ее субъектов [9, 418–423].

Деятельность органов государственной власти субъектов Российской Федерации актуальна с точки зрения влияния этих органов на развитие правового государства. Законодательные органы субъектов Российской Федерации ответственны за построение «нижнего этажа» правовой системы.

В настоящее время в субъектах Федерации существуют различные виды взаимоотношений законодательной и исполнительной властей, учитывающие

особенности этих субъектов Федерации. Не всегда региональное государственное строительство укладывается в стандарты, заданные Конституцией Российской Федерации и Федеральным законом «Об общих принципах организации законодательных (представительных) и исполнительных органов государственной власти субъектов Российской Федерации». Однако это не означает жесткой унификации организации власти на уровне субъектов Российской Федерации. Унифицированы могут быть только основные принципы деятельности органов власти субъектов Российской Федерации. Сама идея федеративного государства предполагает многообразие подходов к решению конкретных вопросов организации системы органов государственной власти.

Законодательные органы субъектов Федерации обладают значительным набором полномочий в различных сферах жизни соответствующего субъекта Российской Федерации: организации государственной власти и местного самоуправления, в области бюджета, экономических и финансовых отношений, в области землепользования, природопользования, охраны окружающей природной среды, объектов природы, истории и культуры и др.

Законодательные полномочия образуют главную составляющую компетенции представительных органов субъектов Российской Федерации. Именно реализации законодательных полномочий посвящается основное время деятельности данного органа государственной власти субъекта Федерации.

В соответствии с Конституцией Российской Федерации федеральные органы исполнительной власти и органы исполнительной власти субъектов РФ могут по взаимному соглашению передавать друг другу осуществление части своих полномочий.

Постановление Правительства РФ определяет порядок взаимодействия и координации деятельности органов исполнительной власти субъектов РФ и территориальных органов Министерства внутренних дел РФ, Министерства РФ по делам гражданской обороны, чрезвычайным ситуациям и ликвидации последствий стихийных бедствий, Министерства юстиции РФ, Федеральной службы исполнения наказаний, Федеральной службы судебных приставов, федеральных министерств и иных федеральных органов исполнительной власти, руководство которыми осуществляет Правительство РФ, федеральных служб и федеральных агентств, подведомственных этим министерствам (далее — территориальные органы) [10, 171–174].



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## Section 7. Finance, money circulation and credit

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### State regulation of funding of social standards in Ukraine

**Abstract:** In conditions of recession, instability of world economy development significant importance are the issues of social security of the population and overcoming of the differentiation of social strata, financial security standards. For Ukraine, the characteristic is a profound differentiation of social security, declining living standards of the population, increasing levels of poverty.

In these conditions it is appropriate to establish institutional criteria for social standards, their funding given the macroeconomic situation, improve the mechanism of financial provision of social standards, in terms of further reform of the methodological foundations of fiscal and social policy. In modern conditions important is the development of a financial strategy focused on the social protection of the population.

**Keywords:** incomes, social standards, development priorities in the social sphere, social justice, financing of social standards.

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### Государственное регулирование финансирования социальных стандартов в Украине

**Аннотация:** В условиях рецессии, нестабильности развития мировой экономики весомое значение имеют вопросы социального обеспечения населения, преодоления дифференциации социальных слоев, финансового обеспечения стандартов. Для Украины характерной является глубокая дифференциация социального обеспечения, снижение уровня жизни населения, повышение уровня бедности.

В данных условиях целесообразным является установление институциональных критериев размеров социальных стандартов, их финансирование с учетом макроэкономической ситуации, усовершенствование механизма финансового обеспечения социальных стандартов, в условиях дальнейшего реформирования методологических основ бюджетной и социальной политики. Важной является разработка финансовой стратегии ориентированной на социальную защиту населения.

**Ключевые слова:** доходы населения, социальные стандарты, приоритеты развития отраслей социальной сферы, социальная справедливость, финансирование социальных стандартов.

**Введение.** Процессы формирования и реализации социально-экономической политики страны должны быть направлены на создание соответствующих условий для развития человеческого капитала

с учетом распределения благ и услуг. Использование института социальных стандартов содействует определению нужд населения в получении широкого спектра товаров и услуг в сфере образования, науки, здравоохранения, жилищно-коммунального хозяйства на уровне, который обеспечивает всестороннее развитие личности.

Значительный вклад в развитие теоретических и практических аспектов осуществлено такими зарубежными учеными и практиками как У. Беверидж, Ш. Бланкарт, М. Кастельс, Дж. М. Кейнс, Э. Линдал, Дж. Ст. Милль, А. Пигу,

Д. Рикардо, Дж. Стиглиц, С. Янова.

Вопросам социальных стандартов, усовершенствования институциональных основ финансирования общественного развития посвящены труды отечественных ученых: Т. Боголиб, О. Василика, В. Гейца, В. Демянишина, Э. Либановой, И. Лютого, О. Макаровой, С. Юрия.

Вместе с этим актуальным и целесообразным является применение комплексного подхода к формированию и развитию системы финансирования социальных стандартов, который усилит эффективность управленческих решений государственных финансовых институтов. В условиях европейской интеграции важным является использование опыта стран с развитой и трансформационной экономикой в сфере финансирования социальных стандартов и гарантий, учитывая особенности украинской модели экономики и социальной сферы. Активизация бюджетного регулирования в сфере усовершенствования социальных стандартов нуждается в росте эффективности расходов бюджета и целевых фондов, повышения уровня адаптивности бюджетной политики и циклических колебаний экономики.

**Основная часть.** Социальная сфера Украины нуждается в надлежащем финансовом обеспечении социальных стандартов. Важной задачей государственной политики является создание благоприятных условий, возможностей для стимулирования развития человеческого капитала смотря на необходимость усиления конкурентных преимуществ воспроизводства производительных сил, повышения уровня благополучия. Необходимой является поддержка политики роста доходов населения, удовлетворения существующего в обществе спроса на услуги образования, медицинские услуги, социальную защиту, жилищно-коммунального хозяйства. Социальные стандарты являются определенными требованиями к качеству и уровню жизни населения, которые ос-

новываются на совокупности норм и нормативов их измерения. Формирование механизма финансового обеспечения социальных стандартов осуществляется зависимо от условий экономической модели развития страны и спектра социальных функций, которые возникают в государстве на определенном этапе. Институт финансового обеспечения социальных стандартов направлен на укрепление человеческого капитала.

Бюджетная составная финансового обеспечения социальных стандартов является наиболее весомым элементом механизма эффективности расходов социальной направленности [3, 175]. Важным является дальнейшее развитие методологии бюджетного планирования и прогнозирования, качества предоставления общественных услуг, их соответствия установленным критериям, механизма идентификации экономических и социальных рисков в случае выявления необусловленных размеров определенных социальных стандартов.

Государственные социальные стандарты в сфере доходов должны иметь цель определения достаточного уровня доходов населения с учетом особенностей и нужд демографических категорий для обеспечения жизнедеятельности и развития личности [2, 69]. В процессе прогнозирования и планирования государственного и местных бюджетов, а также бюджетов государственных фондов общеобязательного социального страхования указанные стандарты являются базовыми показателями для расчета доходной, расходной части бюджета и соответственно их дефицита. Размер прожиточного минимума, минимальной заработной платы, оклада первого разряда Единой тарифной сетки для работников бюджетной сферы должны быть согласованы с возможностями финансовой способности и сбалансированности вышеуказанных бюджетов. Кроме того, финансовые публичные институты должны уделять значительное внимание установлению соответствующих пропорций между приведенными показателями с целью обеспечения принципа социальной справедливости, создания условий для роста мотивации к труду, что является фактором влияния на уровень их качества и производительности.

Дальнейшее развитие государственных социальных стандартов целесообразно осуществлять с учетом ведущего зарубежного опыта в этой сфере, определения возможностей его адаптации к условиям социального и экономического развития государственных стандартов в странах с развитой экономикой предусматривает внедрение соответствующей бюджетной политики государства с поэтапным определением планов

ее реализации. Развитие социально-ориентированной экономики сопровождается реализацией комплексных мероприятий, направленных на преодоление диспропорций в размерах доходов населения, создание соответствующего уровня качества жизни, обеспечение прозрачности предоставления социальной помощи. Базовыми условиями формирования эффективной системы предоставления социальных стандартов является определение реальных финансовых источников их обеспечения, устранения монополизации при предоставлении общественных услуг, публичность при разработке перспективных направлений бюджетной и социальной политики. При этом в основу формирования социальных стандартов положены принципы обоснованности, полноты, прозрачности и адаптивности.

Механизм обеспечения социальных стандартов является динамической системой, которая учитывает цикличность экономики, структурные сдвиги в отечественной и мировой экономике, последствия интеграционных процессов, трансформационные преобразования государства как института общества [4, 231]. Нагроможденный мировой опыт свидетельствует, что механизм финансового обеспечения отличается в зависимости от модели социально-экономического развития страны — азиатской, скандинавской, американской, западноевропейской. Обеспечение достаточно высоких социальных стандартов за счет бюджетных средств, в большей степени, наблюдается в скандинавских и западноевропейских странах, что связано со степенью перераспределения валового внутреннего продукта через бюджетную систему. Среднее значение удельного веса государственных расходов на социальную защиту в валовом внутреннем продукте в странах Европейского Союза с трансформационной экономикой за период 2007–2016 годов составил в Польше – 16,3%, Литве – 12,0%, Болгарии – 11,9%, Румынии – 11,8%, Латвии – 11,0% [7]. При этом удельный вес расходов, которые осуществляются за счет средств целевых фондов социального страхования в данных странах колеблется в рамках от 66,2% в Румынии до 84,6% в Болгарии [7]. Уровень минимальной заработной платы в странах с развитой рыночной экономикой превышает размер установленного прожиточного минимума, что ориентировано на обеспечение расширенного воспроизводства производительных сил. Расходы бюджетов данных стран направлены на развитие человеческого капитала, повышение качественного уровня социальной инфраструктуры и инновационных преобразований в отраслях общественного производства.

В Украине Закон «О прожиточном минимуме» был принят в 1999 году и введенным с 2000 года прожиточный минимум не менялся, при этом произошло значительное повышение потребительских цен в 2008–2009 годах, 2014–2016 годах, инфляция в 2008–2009 годах составила 100%, в 2014–2016 годах — 300% [1, 12; 10]. Повышение прожиточного минимума как указано в Законе должно осуществляться раз в 5 лет, но только в ноябре 2016 года были рассчитаны новые параметры, которые значительно отличаются от уровня минимальной заработной платы — 3200 грн. [7]. Правительство сознательно не рассчитывало прожиточного минимума в 2005; 2010; 2015 году, чтобы не увеличивать социальные стандарты такой подход приводит к социальному напряжению.

Формирование государственных стандартов осуществляется с целью определения механизма реализации социальных прав и гарантий населению; обоснованности объемов нужд расходов государственного и местного бюджетов на социальную защиту и обеспечение, содержание и развитие социальной сферы; планирование и прогнозирование объема расходов государственных целевых фондов социального страхования; определения основных приоритетов государственной социальной политики на среднесрочную перспективу. На основе определенных государством социальных стандартов, прежде всего минимального размера заработной платы и пенсии по возрасту, оклада первого тарифного разряда Единой тарифной сетки, размеров государственной социальной помощи и других социальных расходов. Базовым государственным социальным стандартом в сфере доходов населения является прожиточный минимум, который определяется исходя со стоимости минимальных наборов продуктов питания, непродовольственных товаров и услуг.

Социальные стандарты являются весомыми показателями бюджета, которые влияют на динамику перераспределения ВВП через бюджетную систему, государственные целевые фонды. В период 2002–2016 годов частица расходов сводного бюджета на социальную защиту и социальное обеспечение у ВВП составила 7,73%, образование – 6,27%, здравоохранение – 3,7%, духовное развитие и физическую культуру – 0,83% (табл. 1) [9, 24]. Значительная часть бюджетных расходов на социальную сферу направляются на содержание сети бюджетных учреждений и учреждений, заработную плату и начисления на заработную плату работникам бюджетной сферы.



Таблица 1. – Удельный вес расходов сводного бюджета за период 2002–2016 годов (к ВВП)

	2002–2006	2007–2011	2012–2016	2002–2016
Расходы сводного бюджета, в том числе:	28,83	33,14	34,01	31,99
• на социальную защиту и социальное обеспечение	6,17	8,10	8,93	7,73
• пенсионеров	3,26	4,96	5,14	4,45
• семей, детей, молодежи	0,64	1,40	2,13	1,39
• ветеранов войны и труда	0,56	0,46	0,34	0,45
• на случай потери трудоспособности	0,19	0,32	0,47	0,33
• помощь в решении жилищных условий	0,66	0,24	0,32	0,41
• на образование	5,46	6,70	6,65	6,27
• на здравоохранение	3,43	3,80	3,87	3,70
• на духовное и физическое развитие	0,72	0,88	0,89	0,83
• на оплату труда	7,44	8,06	7,88	7,79

\* Источники: Статистические ежегодники 2002–2015 – К.: Госстат., 2003–2016; Закон Украины «О Государственном бюджете на 2016 год» – К.: ВР, 2016–176 с.

В разрезе экономической классификации расходов сводного бюджета расходы на оплату труда и начисления на заработную плату с расходами на социальное обеспечение составляют около 60% в их общей структуре [7]. Тенденция роста весовых значений расходов на социальную защиту и социальное обеспечение в структуре расходов сводного бюджета и ВВП вызвана, в достаточной степени необходимостью усиления социальной защиты лиц, которые потеряли трудоспособность, активизацией государственной политики в сфере семьи, детей и молодежи, поддержкой платоспособности уровня доходов населения [2, 70]. Кроме того, рост расходов на социальную защиту и социальное обеспечение происходит в направлении ускоренного финансирования системы социальных услуг, которые являются компенсаторным инструментом социально-экономической политики.

**Выводы.** В Украине сложилась неблагоприятная система социальных стандартов, что привело к усилению социального напряжения. Состояние финансового обеспечения социальных стандартов зависит от приоритетов бюджетной политики на соответствующий период и экономической конъюнктуры. Социальные стандарты не определены приоритетами государственной политики, государство не заботится о людях. За период 2014–2016 годов увеличилась дифференциация доходов населения. 78% пенсионе-

ров имеют пенсии 1300 грн. (средний показатель), судьи, народные депутаты, прокуроры имеют пенсии 70–100 тыс. грн.; а жители ДНР, ЛНР, и так называемой серой зоны вообще не получают пенсий, в разы разница заработных плат [7].

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тарифной сетки имеют по состоянию на 01.11.2016 года заработную плату 4300 грн., техработница госпредприятия Нефтегаз Украины — 20000 грн., а с 01.01.2017 года ее заработная плата составит 200000 грн. Нефтегаз анасировал увеличение зарплат в 10 раз. Государство не регулирует деятельности госпредприятий, способствует росту бедности и значительной дифференциации.

Формирование социальных стандартов должно иметь индикативные ориентиры качества жизни населения с установленным сроком их достижения. Социальные стандарты должны характеризовать не только размер доходов населения, но и количественные и качественные параметры предоставления общественных услуг. Отечественная система предоставления социальных услуг требует усовершенствования критериев относительно их получения, а также расширения границ ответственности за нарушение требований относительно получения социальной помощи.

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## Analysis of new financing opportunities for Russian pension insurance system

**Abstract:** The revision of socio-economic development's forecast of Russia for the year 2016 leads to make the adjustments of the Pension Fund of Russia (PFR)'s budget size. The main reasons associated with a fall in GDP, the reduction of which in 2015 was 3.7%, and the declining of the employees' wage funds on which were charged the pension contributions. Thus, in 2016 the budget of the PFR for compulsory pension insurance benefits payments was formed with a deficit of 810,5 billion RUB. The possible sources of funding this deficit are: state budgetary transfers, encouraging later retirement and, potentially, use the assets of National Welfare Fund.

**The purpose of this article is to analyze the possibility of PFR's deficit financing due to:** (1) the involvement of employees individual contributions (up to 2% of their income) and (2) by eliminating restrictions on the maximum size of the accruals for pension contributions of relatively highly paid groups of citizens.

The main conclusions will be done regarding the possible size of PFR's deficit reduction and they will be based on the results of the additional pension insurance contributions amounts' modelling.

**Keywords:** the deficit of Pension Fund of Russia, increasing the size of pension accruals, mandatory employees' contributions into public pension system, financial stability of Pension Fund of Russia.

**JEL codes:** J140, H68, G23, G28

### Introduction

The economic crisis in the Russian Federation gave impulse to Russian mandatory pension insurance system to opt for the further way of development.

There are a number of key socio-economic challenges of the pension system: (1) necessity of ensuring the adequate level of postretirement income; (2) dynamically changing structure of the labor market; (3) increased labor migration within the country and between the states; (4) the permanent ageing of population and (4) the deficit in the budget of the Russian Pension Fund (PFR). [2]

The purpose of this article is to analyze the outcomes in the result of the possible decisions, which are debating by the public. These decisions are connected with introduction of compulsory pension contributions, which have to be done by employees. At the moment, in Russia, employees are exempted from payment of any social taxes on their income and the responsibility for that is the employers' burden.

Additional source of PFR's budget deficit indemnification is the taxation of highly income employees. Now contributions to PFR are taken in the full amount (22%) only from the first 796 thousand Rubles of annual payroll fund in the year 2016 and in excess of this amount are

charged only 10%. So, in this research there will be investigated the effect of this “ceiling” elimination.

All proposals under review herein are aimed exclusively at enhancement of PRF’s revenues formation with due account of the rights of pensioners.

Table 1. – Main indicators of the forecast of the socio-economic development of the Russian Federation for 2016–2018 [5]

	2011	2012	2013	2014	2015	2016	2017	2018
	Reported				Estimated	Forecasted		
Consumer price index as of December of the previous year,%	106,1	106,6	106,5	111,4	112,2	106,4	106,0	105,1
GDP, bln. Rubles.	55 967	62 147	66 194	71 406	73 515	78 673	84 910	91 930
Rate of GDP growth,%	104,3	103,4	101,3	100,6	96,1	100,7	101,9	102,4
Payroll fund, bln. Rubles..	12 864	14 667	16 379	17 737	18 599	19 903	21 617	23 424
share of Payroll fund in GDP,%	23,0	23,6	24,7	24,8	25,3	25,3	25,5	25,5
The nominal monthly average gross payroll per one employee, Rubles.	23 369	26 629	29 792	32 495	34 352	36 838	40 092	43 601
The pensioner’s minimum subsistence level, Rubles per month	5 032	5 123	5 998	6 617	8 182	8 803	9 340	10 367

*For the reference:* The exchange rate at March 23, 2016 was 75,69 RUB per 1 EUR.

Let’s make some comments on the choice of indicators. Thus, CPI (Consumer price Index) determines the value of indexation of insurance pensions from the 1<sup>st</sup> of February of the year under planning. The situation faced by the pension system in 2016 was unique as far as such indexation is concerned — indexing was made by incomprehensible 4% instead of 12,2% (it was noted that 4% is a target inflation rate of the Central Bank of the Russian Federation) however it is well known that the issue concerning the additional indexation will be reopened in the second half of the year based on the performance of economy. The pensioner’s subsistence minimum determines, respectively, the minimum possible amount of the pension benefits of the retiree. Where the amount of a pension is below a minimum subsistence income for a variety of reasons, a pension supplement shall become established to the pensioner, be funded by the federal or regional budget and paid through the PFR.

GDP and the payroll fund in particular, are the grounds for calculation of the revenues of the budget with regard to collected insurance contributions for mandatory pension insurance system [3].

Having identified the main indicators of the forecast of the socio-economic development from which we

### Analysis & Methodology

In the table 1 there is a brief analysis of the socio-economic development indicators of the Russian Federation forecasted for the period of 2016–2018 based on the data of the Federal State Statistics Service.

are to make a start while summing up a situation in the mandatory pension insurance we will try to assess the extent of the challenging issue — a size of deficit reduction of the PFR’ budget.

For this purpose, we will refer to the data relevant to planning and implementation of the PFR budget (see table 2.). Under the deficit is implied herein an inter-budget transfer from the federal budget to the budget of the Fund of mandatory pension insurance (hereinafter «Transfer»).

It should be noted its uneven dynamics: a decrease in the share of transfer in the revenue side to 5,5% in 2014 was caused by the recovery growth of the economy and especially by the growth of the payroll fund and its share in GDP. From 2014 onwards the share of transfer is increasing: it was affected by the transition to the stage of stagnation since 2013 and further deterioration of the economic situation in 2014–2015, as it was most obviously illustrated by the growth of consumer price index.

Thus, it is necessary to determine the most expedient tactical decisions focused on the enhancement of the revenues of the PFR’s budget. Increasing of contribution rates — it is a rather widespread measure accepted among international systems of mandatory pension insurance [1].

Table 2. – Dynamics of the Pension Fund of the Russia's budget deficit, covered by the state budget transfer for 2011–2016 [4]

Year	Revenues of PFR, total (bln. Rubles)	Of which a transfer for mandatory pension insurance (bln. Rubles)	Share of transfer to the bal- ance the PFR's budget (%)
2011	5 255,6	924,4	17,6
2012	5 890,4	1 033,1	17,5
2013	6 388,4	942,8	14,8
2014	6 159,1	336,3	5,5
2015 (forecast)	7 146,8	689,9	9,7
2016 (forecast)	7 528,8	810,5	10,8

*For the reference:* The exchange rate at March 23, 2016 was 75,69 RUB per 1 EUR.

At the same time the measures, which had been already adopted in our country became a frequent practice abroad, for example, extension of the minimum length of pensionable service granting a right to an insurance old-age retirement pension as well as toughening of requirements allowing to receive an early old-age pension.

It should be noted that the Russian Federation — is the only country in the world where only an employer pays insurance contributions, therefore the employee has no relation to the CPI funding system [7].

As of 2016 and to the end of 2018 the insurance contributions will be paid by the employer at the rate of 22% of the payroll fund; at that ceiling value of the base for assessment of insurance contributions will be subject to review on an annual basis by the Government of the Russian Federation and in the year 2016 it makes 796 thousand Rubles. The insurance contributions at the rate of 10% will be accrued on earnings above the established ceiling value of the base [9].

Existence of insurance contributions accrued in excess of the ceiling value of the base are of interest as well, as the contributions in this particular case are de-personalized in its nature, do not affect in any way the pension rights in future and are used exclusively for the redistribution of funds in favor of current pensioners. The structure has much in common with the system of the pension payment funding on account of tax charges. Its application could become an outcome of using of the Uniform Social Tax (UST) practically during ten years, as in the 1990s there were no ceiling value of the base for accrual of the insurance contributions, however at that time it had become an analog of curbing pensions depending on the ratio of the insured person payroll versus an average one in the industry [10].

Let's analyze the impact on PFR's funding the scenario, when contributions would be made by the insured person at the rate of 2% of his earnings.

For assessment of the value of such increase we will calculate at first the prospective value of one percent of insurance contributions to be paid by an employee.

For this purpose, it will be necessary to admit some assumptions. As we assess the value based on the payroll fund, it will be necessary to exclude earnings of highly-paid employees as well as to apply a adjustment factor for payers of insurance contributions with established reduced rates.

In order to make a model more realistic it seems reasonable to use data concerning the collectability of insurance contributions by the PFR (for the purposes of these calculations we proceed on the assumption that in future PFR will be engaged in the administration of contributions for Mandatory Pension Insurance).

Therefore, the calculations will be made based on the formula:

$$C = PF * GCR * (1 - HPE) * (1 - TS) * CC [1]$$

$$VIC = C * GCR [2]$$

Where **C** — an expected amount of insurance contributions for mandatory pension insurance;

**VIC** — value of one per cent of insurance contributions for mandatory pension insurance;

**PF** — Payroll Fund (the actual value of the indicator will be calculated by Rosstat (Federal State Statistics Service), and a projected one— by the Ministry of Economic Development of Russia);

**HPE** — a share of employees having earnings above the established ceiling value of the base for accrual of the insurance contributions for mandatory pension system (an estimate indicator);

**TS** — a share of a transfer from the federal budget for compensation of shortfall in income of the Fund budget in connection with establishing of reduced rates for payment of insurance contributions for mandatory pension system (to be indicated in the explanatory note to the draft of the federal law on budget (forecast) or on the implementation of the PFR budget (actual);

**CC** — a ratio of insurance contribution collectability;

**GCR** generally established insurance contribution rate for assessment of the total amount of insurance contribution inpayments, and for the second time — for assessment of a value of one percent.

For assessing a share of **HPE** we will take the data for April 2015 available at present about the number of employees broken down by payroll rate. We will assess as well the rate of the gross payroll up to which the insurance con-

tributions are paid in full. In 2015 the ceiling value of the base for accrual of the insurance contributions was equal to 711 000 Rubles, so we will analyze the share of employees whose average monthly payroll was above 59 250 Rubles.

Table 3. – Breakdown of number of employees by the gross payroll rate for April 2015 [8]

Gross Payroll, Rubles per month	Share in the total number of employees, %
At the level of minimum wage (5965 Rubles)	1,4
from 5965,1 to 10600,0	10,5
from 10600,1 to 15400,0	13,0
from 15400,1 to 21800,0	17,4
from 21800,1 to 35000,0	26,6
from 35000,1 to 50000,0	15,2
from 50000,1 to 75000,0	9,4
including	
from 50000,1 to 59250,0	3,5
from 59250,1 to 75000,0	5,9
from 75000,1 to 100000,0	3,3
from 100000,1 to 250000,0	2,8
above 250000,0	0,4

*For the reference: The exchange rate at March 23, 2016 was 75,69 RUB per 1 EUR.*

The cap of average payroll falls within the range from 5 000,1 to 75 000,0 Rubles per month. Let us assume that the distribution of the gross payroll rates within the range is described as even. Then the share of employees, whose average monthly payroll does not exceed

59 250 Rubles, makes 87,6% (see table 3.).

The dynamics of collection of insurance contributions' ratio for mandatory pension insurance over the last three years are characterized by the values presented in table 4.

Table 4. – Value of insurance contributions' collection ratio for mandatory pension insurance in 2012–2014 [3]

	2012	2013	2014
Collection Ratio, %	98,7	98,7	98,7

In view of preserving the value of ratio at the level of 98,7 during three years we will use that particular value in our present calculations.

We will determine a share of a transfer from the federal budget for compensation of shortfall in income of the PFR's budget.

In spite of the fact, that the amount of transfer was increasing, in absolute terms, practically during all the past five years, its share in 2012–2014 was declining. However in the last two years the dynamics turned round and its share in the planned PFR budget for the year 2016 has practically reached the value of the year 2012.

### Results and discussion

Having received all necessary values of indicators required for one percent's value assessment of insurance contributions, we will calculate it using formulas [1] and

[2]. The estimated data are presented in the table 5.

Proceeding from the calculations, the implementation of liability to pay insurance contributions for mandatory pension insurance by the insured person at the rate of 2% of employment earnings is likely to attract about 295,8 billion Rubles into the budget of the Russian Federation Pension Fund according to the data for the year 2015. Initially, in the year 2015, it was planned a PFR's budget deficit amounted to 431,3 billion Rubles. After that, as a result of the decrease in the amount of the actually collected insurance contributions and increasing adjustments of insurance pensions amounts by 11,4% the size of deficit has grown by 258,6 billion Rubles and became 689,9 billion Rubles. Implementation of liability to pay 2% by employees themselves potentially could be effective in terms of the year 2015.



Table 5. – The assessed value of one percent of insurance contributions for mandatory pension insurance in 2015 [8; 5]

Share of employees with earnings not exceeding the ceiling value of the base for CPI insurance contributions,%	Payroll Fund bln. Rubles.	Collectability of insurance contributions,%	Share of a transfer for compensation of shortfall in income of the PFR's budget,%	Value of one per cent of insurance contributions, bln. Rubles.
87,6	18 599,0	98,7	8,0	147,9
Background information: Value of two per cent of insurance contributions for CPI, bln. Rubles.				295,8

*CPI – mandatory pension insurance*

*For the reference: The exchange rate at March 23, 2016 was 75,69 RUB per 1 EUR.*

If we assume, that in 2016 the potential revenue increase gained through implementation of liability to pay extra 2% will remain at the level of the year 2015 it will help to reduce an expected deficit of PFR budget from 810,5 billion Rubles (10,8% of the total budget revenues) to 514,7 billion Rubles (6,8%).

The increase of the aggregate rate of insurance contributions for mandatory pension insurance up to 24% (22% – on the part of employers + 2% – on the part of employees) will make it possible in the long run to come nearer to the financial stability of PFR system however the chances to succeed are slim.

It is important also to define in advance for what purpose the incoming insurance contributions will be used: (1) for the financing insurance pensions or (2) to finance the funded pensions or (3) it will be allowed for employees to make a choice between (1) and (2).

If these 295,8 billion Rubles will be used for the financing of the funded pension, this case should be clarified additionally. For example, if an employee accumulates a part of the mandatory funded pension using his own contributions, it seems advisable to reduce contributions for the funded component of the pension to be paid by his employer and increase contributions for insurance pension by a prescribed value. Otherwise, the increase of contributions will not be efficient.

Growing the aggregate rate of insurance contributions for mandatory pension insurance should result in the long-run increase of the retirement benefits' level for population.

However, the implementation of liability to pay insurance contributions on the part of employees, on the one hand enables to attract additional resources through legalization of labor activity, on the other hand — additional problems with irresponsible part of working population, who may not be ready for payment of additional insurance contributions due to low level of salaries.

Another way to avoid a deficit of PFR is to eliminate of ceiling value of the base for accrual of the insurance contributions [1], [6].

For example, the elimination of ceiling value of the base for accrual of the insurance contributions for mandatory pension insurance will make it possible to attract additional funds amounted 403,47 billion Rubles. The calculations were made according to the formula:

$$C1 = PF * GCR * (1 - TS) * CC * GCR [3]$$

Where **C1** — an expected amount of insurance contribution inpayments for mandatory pension insurance;

**PF** — Payroll Fund (the actual value of the indicator will be calculated by Rosstat (Federal State Statistics Service), and a projected one— by the Ministry of Economic Development of Russia)

**TS** — a share of a transfer from the federal budget for compensation of shortfall in income of the Fund budget in connection with establishing of reduced rates for payment of insurance contributions for CPI (to be indicated in the explanatory note to the draft of the federal law on budget (forecast) or on the implementation of the PFR budget (actual);

**CC** – ratio of insurance contribution collectability);

**GCR**— generally established insurance contribution rate for mandatory pension insurance.

Thus, taking into account the insurance contribution inpayments on the part of employees the PFR revenues are expected to increase by 735,96 bln. Rubles in aggregate. But, it is always necessary to take into account the previously described growth of liabilities to current and future pensioners.

### Conclusions

As we can see from the results of the analysis, PFR could get from 295 to 400 thousands Rubles if the proposed steps will be performed. These amounts could cover at least a half of the current PFR's deficit. For instance, the introduction of an additional contribution amounted 2% of the employee's income would reduce the expected budget deficit of PFR from 810,5 billion Rubles (10,8% of the total budget revenues in the year 2016) to 514,7 billion Rubles (6,8%).



Table 8. – Forecast of receipts from payment of insurance contributions for mandatory pension insurance in case of elimination of ceiling value of the base for accrual of the insurance contributions [8], [5]

	<b>Payroll Fund bln. Rubles</b>	<b>Rate of insurance contributions to CPI,%</b>	<b>Collectability of insurance contributions,%</b>	<b>Share of a transfer,%</b>	<b>Expected amount of insurance contribution in payments for mandatory pension insurance, bln. Rubles</b>
2	18 599,0	22,0	98,7	8,0	<b>403,47</b>
3	18 599,0	24,0	98,7	8,0	<b>440,16</b>

*For the reference:* The exchange rate at March 23, 2016 was 75,69 RUB per 1 EUR.

Moreover, introduction of updated legislation, imposing obligations on employees to pay an additional 2% of their wage will contribute legalization of salary payments, because in case of non-payment of pension contributions, the employee will bear the administrative responsibility. Along with this, there is still a risk of the opposite effect.

Another important effect of the proposed steps is strengthen the insurance character of the pension system and confirmation of thesis about the nature of pensions as deferred earnings.

Finally, all the proposed might reduce, but not to avoid completely the deficit of the PFR.

There are some tools, that may be used in future by the Russian Government to increase the financial stability of Pension Fund of Russia:

- increase in the retirement age, which at the moment is the lowest in the world (in Russia retirement age is 55 years old for females and 60 years old – for males);
- “freezing” of pensions’ payments to working pensioners;

- financing the funded pension by the employees themselves (in the size, for instance, form 2–6% of their individual payroll fund), while maintaining the size of the mandatory contributions by employers to the Pension Fund in the existing level of 22% of employees payroll fund;

- cancellation of second tier funded pension and its incorporation into the public insurance pension (this option can be used in case of further deterioration of the economic situation in Russia and the occurrence of Pension Funds’ insolvency scenario);

- reforming of early pension insurance system and determination of those categories of citizens who will not be subject to mandatory state pension insurance provision, for example, individual entrepreneurs (for these categories may be created the special retirement schemes on sectoral/industrial or occupational basis).

Only a complex of measures having an effect on the revenue and expenditure sides of the Russian mandatory pension insurance system will make it possible to avoid deficit in the future by Pension Fund of Russia.

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## Investment Alternatives for Individual Investor in Albania

**Abstract:** During the communism period, characterized by centralized economy, the sole investing alternative for population has been depositing the money in the sole financial saving institution — Institute of Savings and Insurance. After twenty seven years of free market economy, financial system in Albania is a bank based system. Therefore, bank products are the primary and the classic investment alternative for the major part of population. Are any other opportunities for investment by Albanian investors? This article aims to point the alternatives used by individual investors in Albania and the reasons for which using such alternatives.

**Keywords:** bank deposit, treasure bill, investment fund.

### Introduction

After the transformation of the economy from the centralized to open free market economy (in 1991), during the last two decades the financial system has been radically changed. Until 1990, the financial system has been composed of the Central Bank (functioning as a state bank and as a commercial bank as well), one depositary institution (Institute of Savings and Insurance), and one bank (Agriculture Bank, which had the monopoly of crediting the agriculture enterprises and cooperatives). All have been state owned institutions. No other financial institutes existed. Only after 1991, the foreign capital entered in the banking sector. During the first decade of transformation process (1991–1999), other commercial banks have been established and several credit unions have been opened. Therefore the formal investing alternatives have been very few. During this period, the pyramidal schemes have been designed, which provided extremely high interest rates. The most part of the Albanian citizen’s savings was invested in these informal institutions. After their closure in 1998, many of Albanian investors have lost their money. It was a very disappointed investment experience for Albanian investors. Only after 2000 the real transformation of the financial system began: the existing state owned financial institutions have been privatized, and new financial institutions

have been established. In the end of 2015, the financial system of Albania is composed of the following institutions, with respective share of the actives to total financial system actives:

- Banking sector – 90.13 percent;
- Investments funds – 4.64 percent;
- Insurance companies – 1.88 percent;
- Other financial institutions (loan and credit institutions, union credits, leasing and factoring companies, private pension funds) — 3.35 percent.

The financial system in Albania is supervised by two authorities: Bank of Albania and Albanian Financial Supervisory Authority. The legislation regarding the financial sectors has been radically changed and improved over years. There is no stock exchange in Albania. It has been opened in 1996 and it has been closed down in 2014. The absence of the stock exchange explains the few investment alternatives. Despite the various financial institutions operating in Albania, the most used investment alternatives from Albanian citizens are: banking deposits, government securities and investments funds. The aim of the article is to describe the investment alternatives used by the Albanian citizens, in order to point out the characteristics of Albanian individuals' investment. The article is organized in five sections. After the introduction, the next section describes the banking deposits.

The third and fourth sections describe respectively the treasury bills and investment funds. The conclusions are presented in the last section.

### **Bank deposits**

Opening of a saving account in a commercial bank is the traditional investment for the Albanian investor. The only investment possibility during the communism period (before 1991) has been the deposits in the commercial bank. Therefore, Albanian families have traditionally saved their money in the saving accounts. After the liberalization of the banking sector, the private and foreign capital entered in Albania. Actually there are 16 commercial banks operating in Albania. Customer's deposits constitute the most important and stable source of financing for the Albanian banking system, sharing 83.5 percent of total liabilities (2015). Households' deposits remain the main base of banking system's deposits with a share of 85% of total deposits.

In December 2015, total value of deposits in the system amounted ALL 1.1 trillion, with an annual growth of 2.8%. The share of domestic currency to total deposits was about 49 percent. Maturity structure recently is shifted to short-term maturities, as the current accounts and time deposits shrank upon the impact of the continuous lowering of the interest rates. In December 2015, ten largest depositors accounted for 4.5% of total banking system's deposits. Four largest banks of the system shared about 60 percent of the system total deposits. Two of them have been state owned banks which have been privatized. Although the second one (Raiffeisen Bank) has almost the lowest deposit interest rates, it shares about 22 percent of the system total deposits. This is due to the fact that the population savings before 1990 has been monopoly of the Institute of Savings and Insurance. In 1991 this institution has been transformed in the Saving Bank (today Raiffeisen Bank). Therefore the Raiffeisen Bank has inherited large amounts of deposits.

Following the reduction of the economic growth in Albania, the interest rates of the bank deposits have been decreased. In 2009, the deposit interest rate (12 monthly ALL deposit) was 6.75%. In 2013 it was 4.17%, and in 2014 it has been decreased in 1.51%. The reduction of interest rates has been continued in 2015 (1.46%). The interest rates during the last years have been even lower than inflation rates, resulting in a real negative rate of return for depositors.

After the collapse of pyramidal schemes and due to the low interest rates of bank deposits, Albanian individual investors have search for risk-free short term investment alternatives, such as Treasury bills.

### **Treasury bills**

After the collapse of pyramidal schemes in 1998, the Albanian individual investors have been more prudent in investing their money. They were more unconfident with investing alternatives other than banking deposits. However, they began to look for investing alternatives, which were considered risk free. Since 1994, government of Albania has used treasury bills and bonds to borrow funds from the public and financial institutions. Treasury bills are attractive to investors because they are backed by the government and therefore they are free of default risk. Another attractive feature of treasury bills is their liquidity, due to their short maturity. Existing treasury bills can be sold in the secondary market through dealers licensed by Albanian Financial Supervisory Authority, who profit by purchasing the bills at a slightly lower price than the price at which they sell them.

Treasury bills in Albania are sold to individual and institutional investors. Institutional investors include the Bank of Albania, commercial banks, insurance companies, private pensions, investment funds etc. As treasury bills are risk-free securities, they should provide the lowest yield in the market. But at contrary, the yield provided from the investments in Treasury bills has been historically greater than the bank deposit interest rates. In 2009, 2013, 2014 and 2015, the yield on Treasury bills (with maturity of 12 months) has been respectively 9.14%, 3.66%, 3.33% and 3.59%. This "paradox" is due to the fact that commercial banks invest a large portion of their liquidities in treasury bills, and as they have a lot of liquidity, they are not encouraged to attract more household's deposits. As result, the commercial banks have decreased the deposit interest rates, which has been even lower than the yield provided by the Treasury bills. The low deposit interest rates have oriented the Albanian individual investors toward Treasury bills, which offered them security. Therefore the participation of individuals in Treasury bills auctions has been increased as they were the most secured investment, providing higher interest rates than bank deposits. But the sharp continuous reduction of interest rates for bank deposits and treasury bills, has encouraged the Albanian individual investors to reallocate their savings toward other new investments, such as investments funds.

### **Investment funds**

Supervision of investment funds is exercised by Albanian Financial Supervisory Authority. The investment fund market in Albania started operation in 2012. It has been greatly expanded, ranking the second largest market after the banking market. In 2012 the ratio of in-

vestment funds assets to total financial system assets was 1.26%, while in 2015 the ratio is increased to 4.64%. The expansion dynamics of these funds show that domestic investors are interested in new saving and investment products. During 2015, two investment funds exercised their activity in the Investment Fund's market: the "Raiffeisen Invest Euro" dominated in Euro and "Raiffeisen Prestigj" dominated in All (Albanian leke). Both funds are collective undertakings with public offering established by Raiffeisen Invest sh. a. which is a management company for pension funds and collective investment undertakings. The funds invest mainly in government bonds, which consist 70% of fund assets. About 99.99% of fund members are individual investors. The minimum investment into the "Raiffeisen Prestigj" fund is All 5000. The subsequent investment amount is at least All 1000. During the period of initial offering of units in the fund, the price of issue is All 1000. After the initial offering, the price of unit is a uniform price equal to the fund net asset value per unit, calculated on the basis of the market price of all securities in the portfolio. This kind of investment provides liquidity as the unit holders may request at any time the redemption of their units, which has to be satisfied within seven days. In 2015, net assets value per unit of both investment funds is increased by 4.3% in comparison with 2014. "Raiffeisen Presitege" fund has the largest increase by 6.8%, while

"Raiffeisen Invest Euro" asset value per unit is increased by only 0.11%.

Individual who have invested their money in investment funds have provided higher rates of return than investments in bank deposits or treasury bills. But they have to know that they are exposed to several risks, such as market risk, credit risk and liquidity risks.

### **Conclusions**

Financial system offers a variety of investing alternatives for individual investors. As the banking system assets in Albania consist 90 percent of the total financial system assets, the bank products constitute the primary investing alternative for Albanian individuals. Bank deposits are considered as a traditional investment form for Albanian individual investor, inherited from the communism. The second investing alternative is investing in treasury bills, which historically have offered higher return rates than bank deposits. Treasury bills, which are risk-free investments, are taken in consideration as a good investment opportunity, especially for the Albanian investors disappointed by the pyramidal schemes. However, during the last years, when the interest rates have recorded their minimal values, Albanian investors have started to reallocate their savings to other alternatives, more risky, such as investment funds. Investment funds are attracting the individual investors due to high return rates and their liquidity.

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## Section 8. Economy Demography

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### **Inequality of opportunity in education: the effect of circumstances on individuals education in Morocco**

**Abstract:** This paper discusses the effect of inequality of opportunity on education in Morocco. Starting from an analysis of theoretical and empirical papers, we used the data from the National Survey on the levels of Living of Households 2006/07 to provide an estimation of the importance of these circumstances in education inequality in a country that has long suffered from inequality in education. We apply six circumstances variables which lie beyond the control of the individual — father's and mother's education; gender; milieu; region of birth and expenditure and make an inequality of opportunity index using two methods. Then we decompose this index using Shapley decomposition. Our result show that a significant part of inequality in education access is due to inequality of opportunity, and the most important source of this inequality of opportunity is area of residence.

**Keywords:** Inequality, circumstances, education.

#### **Introduction**

Many countries in the world have experienced a substantial increase in inequality over the last few years. In Morocco, although significant progress had been made at the national level, there are still differences between the treatment individuals. This inequality has a bad impact because it violates the principles of social justice [20] such as equal rights. It also has a negative effect on the efficiency of the economic system, children's education, employment, and so on.

For many years, inequality studies focused only in terms of income in relation to economic growth. However, this old debate introduced by authors such Kuznets, S. (1955) [16] and Lewis, W.A. (1954) [17], was replaced by a new one focusing on inequality of opportunity. This new concept aims to assess the effects of inherited social factors such as family background, race, and place of birth on the outcome. Also, inequality of opportunity was extended to different social fields such as education, health and employment.

In this paper, we focus on inequality in education. We make this choice because, firstly, the education of children is in large part influenced by circumstances of birth. Indeed, children cannot improve their living standards without their parents. This situation makes child education very sensitive to family backgrounds. Secondly, because of the importance given to promoting education in Morocco. The country established an emergency program in 2009. This continued program aims to resolve the problem of education access. However, despite the progress made, the problem of inequality in education continues to slow down the process of human development in Morocco as in the case of developed and developing country (Tawil, S., Cerbelle, S., Alama, A., & Unesco, 2010) [22] Gøsta Esping-Andersen. (2001) [14].

The main objective of this paper is to identify the share of total inequality in education due to circumstances beyond the control of the individual and to highlight the effect of these circumstances. To achieve this objective,



we estimated the effect of circumstances variables on education levels. We also studied the effect of inequality of opportunity on each level of education (primary, secondary, and higher). Then, we decompose inequality of opportunity into five groups and studied the contribution of each in total inequality.

### **The theory background: from primary goods to capability**

Starting from the egalitarian philosophers such as Rawls, J.A. (1971) [19] and Dworkin, R. (1981a) [9], the principle of equality of opportunity received more attention.

Rawls, J.A. (1971) [21, 92] introduce the notion of primary goods “things which a rational man wants whatever else he wants”. These goods include basic liberties and rights, freedom of movement, free choice of occupations, access to political and other offices, income, wealth, and the social bases of self-respect. For Rawls, J.A. (1971) [19], the distribution of these primary goods is essential to perform social justice. This justice is expressed in two principles according to this author:

“[...] each person is to have an equal right to the most extensive scheme of equal basic liberties compatible with a similar scheme of liberties for others” [19].

“Social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone’s advantage, and (b) attached to positions and offices open to all.” [19].

The first principle is based on Jean-Jacques Rousseau theory of social contract, which claims legal rights. The second aims to resolve the problem of inequality and ensure a fair equality of opportunity. In order to achieve this principles, Rawls, J.A. (1971) [19] consider inequality in the distribution of these primary goods acceptable only if it benefits the poor members of society.

Dworkin, R. (1981b) [10] has expanded Rawls [19] approach by integrating individual physical characteristics like health, talents and capacities among the resources that people have. According to him, people with no physical capacities should be compensated because this situation is an unchosen circumstance.

However, this perception of resources equality (physical capacity and primary goods) was widely criticized by Sen, A. (1995) [21]. One of his criticisms was that people required different amounts of goods to meet the same needs. To handle this, he introduced a new concept called “functioning”. This concept is related to what an individual can achieve, taking into account their capacities and resources. The different combinations of this functioning represent what Sen [21] called “capabilities”. Thus capability is the expression of the freedom for an in-

dividual to choose between different living conditions or achievements.

Rawls, J.A. (1971) [19], Dworkin, R. (1981) [9] [10], and Sen, A. (1995) [21], have a different perception of inequality. However, all these authors believe that an equitable society provides equal chances to all individuals to attain achievements. Indeed, once the individuals have an equal opportunity they can choose their achievements according to their efforts. That’s why the difference in the degree of achievement can be determined in large part by the inequality of opportunity. However, the question is how these inequalities can be measured?

### **Measuring the inequality of opportunity in education**

A large number of papers which attempted to analyze the question of equality of opportunity have faced up to the problem of measuring this kind of inequality. In order to cope with this problem, the authors distinguish between two parts of inequality of opportunity: inequalities that can be explained by the circumstances and those that are explained by the effort.

According to Checchi, D., Peragine, V., & Serlenga, L. (2010) [8], the first one is more ethically acceptable than the second one. Indeed, it’s ethically offensive to think that circumstances which are beyond an individual’s control have a large influence on individual outcomes. However, it’s not offensive to think that a great effort should generate a great outcome.

One of the papers which the authors tried to measure equality of opportunity was Bourguignon, F., Ferreira, F. H. G., & Menéndez, M. (2007) [5]. These authors try to quantify the role of inequality of opportunity associated with circumstances in current earnings in Brazil. They measure circumstances with five variables related to father’s and mother’s education, father’s occupation, race, and region of birth. Using these circumstances variables, they analyzed how the proportion of income inequality explained by the circumstances has evolved. However, this type of study does not directly address the inequality of opportunities in education. Other authors like Binder, M., & Woodruff, C. (2002) [3], tried to analyses the education achievement as a cause of income inequality. Despite the first who studied this type of inequality in the case of education as an endogenous phenomenon was ROEMER, J.E. (1998) [20]. He distinguishes between the circumstances beyond a children’s control which influence their abilities. These circumstances include family background, culture, and social milieu. For ROEMER, J.E. (1998) [20], if we want to handle the effect of the circumstance there need to redistribute educational resources like teachers, books, schools,

buildings, in order to compensate this effect. However, in order to ensure an equal redistribution it's necessary to target the children who have problems in their education by measuring the educational achievement. That's why different authors used three different approaches in order to measure individual educational achievement.

The first approach focused on academic mobility. This method has been used by Birdsall, N., Behrman, J.R., & Székely, M. (1998) [4], for Latin America. The weakness of this approach is the use of prospective data instead retrospective data. Indeed, the education achievement of an individual is linked to his academic life as a whole.

The second approach used by Chávez-Juárez, F., & Soloaga, I. (2015) [6], was the number of years of schooling. This measure is considered imperfect because it does not reflect the educational performance of the student. Indeed, a high number of years of schooling cannot reflect the achievement because it does not take into account the repeated school years. In their estimation, Chávez-Juárez, F., & Soloaga, I. (2015) [6], used Mexican data and they found that all variables of parent's background influence the probability of education achievement. They also observed that the effects of circumstances are the highest for 9 and 12 years in their schooling.

The third approach used by Ferreira, F. H. G., & Gignoux, J. (2011) [11] was on the basis of two types of measures: quantity and quality. The quantitative measure is enrollment age; the quality measure is a test score. This approach is considered to be the best because it reflects the academic achievement of the student. The result of this paper suggests that the most important circumstances are the family background variables.

In this paper, we use the level of education (primary, secondary and the second) in order to measure individual educational achievement. This approaches is quite similarly to that of Ferreira, F. H. G., & Gignoux, J. (2011) [11]. However, the level of education approach, unlike a number of years of schooling, reflect the educational performance.

### Research methodology: Variables selection and estimation method

There are two main approaches to analyzing inequality of opportunity: the ex-ante approach focuses on the circumstances, and the ex-post approach focuses on the effort. In this paper, we are interested in the ex-ante approach because children's education depends on the circumstances in which they grew up.

Different empirical studies use the ex-ante approach like Bourguignon, F., Ferreira, F. H. G., & Menéndez, M. (2007) [5], Gignoux, J., & Ferreira, F. H. G. (2010) [13],

Checchi, D., & Peragine, V. (2009) [7] and Chávez-Juárez, F., & Soloaga, I. (2015) [6]. In these studies, authors has proposed several methods to deal with ex-ante inequality of opportunity. However, the most popular method was the regression. With this method, we can know if circumstances variables affect the outcomes significantly.

In this paper, we estimate inequality of opportunity for a multi-way categorical dependent variable with four ordered values which measures the level of education, by using the method proposed by Ferreira, F. H. G., & Gignoux, J. (2011) [11]. The idea behind is to estimate the outcome  $y$  of an individual with a set of circumstances  $C$ . Formally, this equation can be written as:

$$\hat{y} = E[y|C]$$

Then, the relative measure of inequality is obtained by applying common inequality measure  $I(\cdot)$  to equation (1):

$$q = I(\hat{y})$$

This equation can be estimated by different methods depending on the outcome. In this papers, we used discrete outcome. That is why we used Barros, R. P. de, Ferreira, F. H. G., Vega, J. R. M., & Chanduvi, J. S. (2009) [2] method. These authors use a logit or probit model to estimate the equation of Ferreira and Gignoux (2011).

The idea behind the dissimilarity index is if we have equal opportunity, then the correspondence should be exact between the access rate of the groups defined by circumstances and the average access rate of the whole population. This correspondence is measured by the dissimilarity index ranges from 0 in the case of perfect equality to 1 in the perfect inequality.

$$\theta = D(\hat{y}) = \frac{1}{2N\bar{\hat{y}}} \sum_{i=1}^N e^{\hat{y}_i - \bar{\hat{y}}} |\hat{y}_i - \bar{\hat{y}}|$$

Where  $\bar{\hat{y}} = E[\hat{y}]$ .

However, according to Chávez-Juárez, F., & Soloaga, I. (2015) [6], this dissimilarity index has a limit related to his scale invariant. However, scale invariance is not a problem in the inequality index unless the inequality measure cannot satisfy the axiom of translation invariance. Thus, we can show that dissimilarity index does not satisfy this axiom:

$$\begin{aligned} D(\hat{y} + \mu) &= \frac{1}{2N(\bar{\hat{y}} + \mu)} \sum_{i=1}^N e^{\mu + \hat{y}_i - \bar{\hat{y}} - \mu} |\mu + \hat{y}_i - \bar{\hat{y}} - \mu| = \\ &= \frac{1}{2N(\bar{\hat{y}} + \mu)} \sum_{i=1}^N e^{\hat{y}_i - \bar{\hat{y}}} |\hat{y}_i - \bar{\hat{y}}| = \frac{\bar{\hat{y}}}{\bar{\hat{y}} + \mu} D(\hat{y}) \end{aligned}$$

To cope with this problem, Chávez-Juárez, F., & Soloaga, I. (2015) [6] proposed to simply drop in the denominator, which is the cause of the scale invariant. He modified the dissimilarity index:

$$\tilde{D}(y) = \frac{1}{2N} e^{\sum_{i=1}^N |\hat{y}_i - \bar{y}|}$$

This index can be decomposed into groups using Shapley method. This approach divides the outcome into shares that reflect the contributions of several groups in total inequality of opportunity. To compute this type of decomposition, we must calculate the average marginal effect of each circumstance variable on the global index.

In this paper, we compared the Chávez-Juárez, F., & Soloaga, I. (2015) [6] method (ws) and the Barros, R. P. de, Ferreira, F. H. G., Vega, J. R. M., & Chanduvi, J. S. (2009) [2] method (pdb). After that, we decompose our measure of total inequality of opportunity into groups, and we attribute a part of total inequality to each group of circumstances using Shapley decomposition. We used six circumstance variables. The selection of this variables is based on the theoretical and empirical contributions in literature. Among these variables, we have:

- *Father's education*: Much empirical evidence exists on the relationship between the father's and children's education. According to Pleck, E., H., & Pleck, J. H. (1997) [18], fathers are more likely to get involved actively in the care and education of children if they feel competent to do so. This competence can come from his own education. In the same way, Altintas, E. (2016) [1] examined time US parents spent in activities vital for child development between 1965 and 2013. He found that highly educated fathers spend more time on developmental childcare than their less-educated peers, even after controlling for their spouses' education.

- *Mother's education*: this variable certainly has an impact on their children's education. Indeed, educated mothers can outsource activities such as cleaning. Thus she can spend her time with her child. In the same way, educated mothers can help more with homework which helps their children to have good marks in the school. This mother's effect was observed by Hernandez, D. J. & Napierala, J. S. (2014) [15], in this study about the effect of mother's education in the US. His results show that there are enormous disparities between children whose mothers had not graduated from high school, and those whose mothers had a university education.

- *Milieu and region*: these two variables represent the spatial factors. This spatial variables allows to assess the inequality of opportunity due to the environment which offers more or fewer opportunities. In order to analyze the effect of this spatial factor Ferreira, S. G., & Veloso, F. A. (2006) [12] studied intergenerational educational mobility in Brazil, they estimate Brazilian inter-

generational elasticities. These results show that mobility patterns differ across regions and races in Brazil.

- *Gender*: gender inequality is more pronounced in developing countries like Morocco. This inequality was largely studied in economic literature. Indeed, in many poor countries, society suggests that women should marry early, have children young and must devote to her family which causes high school abundant in women population.

- *Expenditure*: this variable measures the difference in wellbeing. A low expenditure can indicate malnutrition or lack of health care which affects children's education.

#### The Data

The main data source used in this work is the national survey on the levels of living of households 2006/07 (ENNVN). It was collected from a sample of 7062 households, representative at the national level. The main purpose of this survey is to gather information about living standards in order to help define and evaluate social programs for better social inclusion of low-income households in the development process.

The success of this survey required the selection of a representative sample of households to provide reliable estimates of socio-economic indicators of the population. For conducting the survey on the living standards of households, a stratified three-stage was adopted. The first stage is the selection of 600 Primary Units from the 1848 Primary Units constituting the master sample. In the second stage, secondary units were selected from the each primary unit of the sample. In the third stage, 12 households are selected with a random with equal probability in each sample secondary unit.

In order to ensure to take people who finished their education, our sample includes 16053 adults aged 25 years and older.

Inequality of opportunity in education: Empirical results.

In this section, we present the result of estimating inequality of opportunity in education. In a first step we show, the result of ordered logistic regression, which links circumstance variables to the level of education (primary, secondary and higher). In the second step, we show the result of estimating the level of inequality of opportunity by comparing the Chávez-Juárez, F., & Soloaga, I. (2015) [6] method (ws) and the Barros, R. P. de, Ferreira, F. H. G., Vega, J. R. M., & Chanduvi, J. S. (2009) [2] method (pdb). Finally, we perform the Shapley decomposition to identify the main determinants of inequality of opportunity in education.



The Wald chi-square of 1025.99 with a p-value of 0.000 tells us that our model as a whole is statistically significant. The estimated output indicates circumstance variables have the expected sign. The father's education level increases the chances of increasing the child's educational level. In fact, the coefficient of higher education is higher than the coefficient of secondary

which is higher than the coefficient of primary school. The same result is observed in the mother's education, expect for the higher education, which had no significant effect. Also, the coefficients of the father's education are higher than those of the mother. This result means the father's education has a greater effect than the mother's education on the children's education in Morocco.

Table 1. – depicts the estimation of the ordered logit model

Student characteristics	Coefficients
Father's education (omitted=no education)	
Primary	0.65212361***
Secondary	1.3905079***
Higher	2.0588086***
Mother's education (omitted=no education)	
Primary	0.30259131***
Secondary	0.93468989***
Higher	0.77145082
Area (omitted=rural)	
Urban	1.6500741***
Region (omitted=center)	
South	-0.65875404**
North	-0.13813977*
Gender (omitted=Male)	
Female	-0.75457395***
log expenditure	0.65113631***
_cons	-1.899032***
Pseudo R2	0.1595
Wald chi2 (11)	1025.99
Prob > chi2	0.0000
/cut1	5.377427
/cut2	8.35164
/cut3	9.431044
legend: * p<0.1; ** p<0.05; *** p<0.01	

Moreover, place of residence seems to have a significant effect. Thus, living in an urban area compared to rural increases the probability to have a good education. Also, living in the South and in the North compared to the center decreases the probability of having a great education.

As also expected, the gender seems to have a significant effect on the level of education. Being a woman reduces the probability of the increase in the levels of education.

In the same way, consumption which is a measure of the standards of living affects positively the level of education. Thus, the poor have less probability of the increase their level of education in relation to the rich.

Regarding the effect of total inequality of opportunity, Table 3 show the part of the variability of each dependent variable categories attributed to inequality of opportunity. This table tells us variability in primary access is due to inequality of opportunity varies between 12.5% using Barros, R. P. de, Ferreira, F. H. G., Vega, J. R. M., & Chanduvi, J. S. (2009) [2] method (PdB) and 37.38 using Soloaga, I., and F. Chávez Juárez (2015) [6] method (WS). In addition, variability in higher education access due to inequality of opportunity varies between 35% using PdB method and 17.36% using WS method. However, both PdB and WS method shows that variability in secondary education access due to inequality of opportunity is around 33%.



Table 2. – Inequality of opportunity in the level of education

Threshold	PdB	ws
Primary	0.125477	0.373801
Secondary	0.330674	0.330129
Higher	0.350004	0.173621

This total inequality of opportunity was decomposed into five groups of variables in order to measure the contribution of each group of circumstances (Table 3).

Table 3. – Decomposition of Inequality of opportunity index (Shapley method)

Variable	Value	Percentage
Group1	0.075014	21.27%
Group2	0.040447	11.47%
Group3	0.118294	33.54%
Group4	0.01208	3.42%
Group5	0.104977	29.76%
TOTAL	0.352742	100.00%

Table 5 suggests the geographical variables (region and milieu) is associated with the largest share of inequality of education it represents 33.54% of inequality index. Followed by expenditure, which is a proxy of wellbeing. This variable accounts for 29.76% of total inequality of opportunity. Also, the father's education ranks third for about 21.27%, while mother's education do not account for much: only half the share of father's education (11.47%). On the other hand, Mother's and father's education combined account for 32.74%.

The lowest contribution is gender. This variable accounts for just 3.42%, which is almost ten times less than the group of region and milieu. Unlike a lot of study that considers the inequality between sexes are the most im-

portant, our results show that although it is important he come in last place after the other circumstances that have considered. However, the inequality between gender can be considered the most ethically offensive after expenditure because these inequalities can be a large inside the same community and even inside the same family where parents consider the education of their male child most important than their female child which can cause serious social problems.

### Conclusion

We have asked to what extent inequality of opportunity affects individual education success in Morocco. We used two measures of inequality of opportunity: the Barros, R. P. de, Ferreira, F. H. G., Vega, J. R. M., & Chanduvi, J. S. (2009) [2] dissimilarity index and the Wendelspiess Chávez Juárez (2013) [6] modified dissimilarity index. Even the limit of our measure which is not integral to the part of the effort, this measure can help to build a policy which provides an equal opportunity in order to promote education in Morocco. Our results indicate the proportion of inequality in education explained by inequality of opportunity varies around 12% to 37% depending on the measure and level of education.

Unlike other studies which attribute inequality of opportunity first to gender, in a Morocco context the predominant effect is the place of residence. This result suggests a good policy based on spatial redistribution of educational resources like teachers, books, schools, buildings [20] can improve education effectively.

Also, the substantial effect of expenditure on inequality of opportunity suggests that conventional policies based only on education are not sufficient. A more global approach is needed, which also integrates the poverty reduction policies.

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## Section 9. Economics of enterprises

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### **Innovative business — the model as a tool of the competitive advantages of enterprises**

**Abstract:** Despite the significant achievements of scientists and practitioners regarding to business models of companies, they have not been sufficiently developed, so innovative business models in the current conditions are very actual and are increasingly attracting attention.

Taking into account the development of scientific and technical progress and the growth of competition in the global market relevance of the research is to establish the success of the companies that will build a business model based on innovation value for the enterprise/company. The business model of the company is an essential element in the creation of value and offer it to consumers. In a highly competitive global market, companies need to create such a business model that would have been something more than just doing business. Introduction of innovations and their impact is a major factor of competitive advantages of the company.

**Keywords:** innovation, business model, product competitiveness, small business.

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### **Инновационные бизнес — модели как инструмент создания конкурентных преимуществ предприятий**

**Аннотация:** Несмотря на весомые достижения ученых и практиков, касаясь вопросов бизнес-моделей компаний, так и не получили достаточного развития, поэтому инновационные бизнес-модели в современных условиях являются весьма актуальными и все больше привлекают к себе внимание.

Учитывая развитие НТП и рост конкуренции на мировом рынке актуальность исследования состоит в обосновании успеха тех компаний, которые построят бизнес-модели на основе инновации ценности для предприятия/компании. Бизнес-модель компании является неотъемлемым элементом при создании ценности и предложением её потребителям. В условиях жёсткой конкуренции на мировом

рынке компании должны создавать такие бизнес-модели, которые были бы чем-то большим, чем просто ведение бизнеса. Внедрение инноваций и их результативность является основным фактором конкурентных преимуществ компании.

**Ключевые слова:** инновации, бизнес-модель, конкурентоспособность продукции, малый бизнес.

Современная конкуренция является состязанием не столько за обладание основными ресурсами и материальными благами, но прежде всего это борьба за разработку и внедрение наиболее эффективных инноваций организационного, коммерческого и технологического характера. Изменилось соотношение источников роста экономики. В современных условиях постоянное освоение новой техники и технологии является одним из главных направлений развития. Нормальным явлением становится проведение системы действий по разработке, внедрению, освоению, производству, и коммерческому применению инноваций. Здесь велика роль малых инновационных фирм, выступающих консолидирующими субъектами между крупными предпринимательскими структурами и наукой, так как именно малые фирмы внедряют в производство известную долю инновации, появляющихся в научно-исследовательских организациях.

В настоящее время в США около 90% валового внутреннего продукта (ВВП) дает малый и средний бизнес, а остальные 10% — крупный бизнес и ТНК. Мелкие и средние фирмы так же являются авторами колоссального количества изобретений и прогрессивных разработок, однако по мере разработки изобретений затраты растут очень быстро, что становятся для них непосильными, хотя малый бизнес представляется динамичнее, гибче, эффективнее крупного, он рассматривается как один из основных источников нововведений, новых рабочих мест и экономического роста.

Опыт США показывает, что одним из преимуществ мелких фирм является наименьшее количество времени на весь процесс внедрения новшеств. Если мелким фирмам для этого требуется в среднем 2,3 года, то крупным — 3,1 года, следовательно, изобретения обходятся мелким фирмам намного дешевле. Мелкий бизнес самостоятельно функционирует на 2-х этапах — разработка и опытное внедрение результатов НИОКР в производство, и серийное производство наукоёмкой продукции. Второй этап характерен высокой степенью риска нововведений, где крупные фирмы «отдают на откуп» мелким предприятиям, используя высокие инновационные потенциалы и превращая их в наукоемкую сферу производства [1].

В большинстве случаев результаты деятельности небольших фирм присваиваются монополиями, которые в итоге получают исключительное право на использование новых технических знаний и возможность за рубежом их патентовать, сформировав при этом за счет этих знаний и результатов собственных исследований портфель патентов. Это позволяет крупным корпорациям на международном рынке наиболее широко использовать патентование как средство стимулирования экспансии.

В инновационном предпринимательстве бизнес-модели небольших инновационных компаний еще недостаточно изучены, как и особенности самих малых инновационных компаний. Каждая инновационная компания создаёт определённые бизнес-модели. Чтобы дать понятие инновационная бизнес-модель, необходимо разобраться с сущностью бизнес — модели.

Бизнес-модель — это схематическое изображение бизнеса, которое направлено на проектирование, планирование и прогнозирование деятельности всей системы бизнес-процессов организации. Бизнес-модель должна располагать следующими характеристиками:

1. Возможностью определяться точным описанием с помощью формальных элементов и показателей (обладать измеримостью).

2. Быть четкой и ясной для широкого круга исследователей и должна быть воспроизводима (обладать прозрачностью).

3. Применена только к конкретному предприятию, другие предприятия (фирмы) должны иметь возможность скопировать ее, применив к особенностям собственного бизнеса (обладать обобщенностью) [2].

Следовательно, бизнес-модель компании можно рассматривать как набор основных характеристик компании, таких как место, занимаемое в отрасли, способы получения прибыли, ценность для потребителей, инновации в компании, основные ресурсы и производственные процессы.

Инновационная бизнес-модель определяется как действие участников организации по принятию решений на стадии коммерциализации и диффузии инноваций по распределению риска и дохода с целью максимизации прибыли от вложенных инвестиций в инновации. Иными словами, это инструмент, который позволяет объединить технические составляющие с экономическими результатами.



Стремление компаний найти свое место на рынке объясняется необходимостью обеспечить себе конкурентное превосходство в условиях экономической нестабильности. Данная задача осложняется тем, что на рынке появляются новые игроки, меняющие правила ведения бизнеса, применяя совершенно новые стратегии и модели бизнеса, используя инновационные технологии. В этих условиях компаниям приходится искать новые способы защиты, обеспечивающие гибкость и устойчивость их моделей бизнеса, что позволит им оперативно реагировать на нововведения.

Примеров компаний, успешно применяющих инновационные бизнес-модели, достаточно. К их числу можно отнести и такие компании как Southwest, Amazon, FedEx, Wal-Mart, McDonald's, IKEA, Enterprise, eBay, Priceline, Dell Computers, Starbucks, Skype, Groupon и т. д. [3]. Эти компании не стремились к превосходству над конкурирующими фирмами на прежних рынках, а внедряли инновационные методы предложения аналогичных товаров и услуг.

В ходе исследования было выявлено, что в современном понимании в центре бизнес — модели находится ценность, но она неразрывно связана с процессом создания продукта, доставки его клиенту и формирования прибыли компании.

Конкурентоспособность продукции представляет собой комплекс потребительских и стоимостных характеристик, определяющих успех на рынке, которая достигается сочетанием качества и цены. Соответственно, чем выше качество продукции, выше его полезный эффект и ниже цена, тем вероятней, что продукция будет реализована. Однако это сочетание носит противоречивый характер. Более высокое качество продукции требует больших затрат для его обеспечения, что отрицательно сказывается на рентабельности производства. Повышение цены нежелательно, так как снизятся объем продаж и доля рынка предприятия. Снижение рентабельности уменьшит экономическую заинтересованность в производстве новой продукции. Профессиональный менеджмент может обеспечить высокую конкурентоспособность при некотором повышении затрат и будет компенсирован качеством продукции [4].

Инновационные бизнес-модели, инновационные продукты и технологические инновации это разные понятия. Их нельзя путать. Есть различные виды инноваций, по-разному способствующие завоеванию новой рыночной ниши или их появлению. В качестве примера можно назвать продукцию Apple, такую как iPod, iPhone и iPad. Известная фирма Amazon

внедрила технологические инновации в интернет — продажах с целью создания новой ниши рынка, при этом упор был сделан на широту выбора, быстроту оформления заказов и низкую цену товаров.

Кампания Southwest, проведя сегментацию рынка авиаперевозок, выделила сегмент бюджетных авиаперевозок и образовала новый рынок. Dell Computers усовершенствовала метод предложения товара, организуя продажи минуя посредников, доводя продукцию прямо до потребителя.

Инновационные бизнес-модели предполагают миграцию ценностей, под которыми понимается нечто специфичное, чем организация владеет или пытается достичь в будущем (например, владение новшеством, технологией и т. п.). Компании стремятся обладать конкурентным преимуществом на основе создания и доставки ценности для достижения превосходного уровня работы за счет: цены, денежных ресурсов, требуемых для создания и доставки продуктов и др.

Такие бизнес-модели дают возможность найти новых потребителей, которых не обслуживают ранее существующие на рынке фирмы, так как для них эта ниша рынка выглядит не очень привлекательной. С формированием совершенно нового предложения товара или услуги меняется цепочка создания добавленной стоимости, и появляются новые ценности для потребителя.

Вводя новую технологию (Т), новые предложения в форме новых товаров и услуг (А), формирования новых рынков (М) и введения новых организационных форм (О), увеличивается итоговая ценность для потребителей. В процветающей компании все отмеченные факторы взаимосвязаны, что отражено на рисунке 1. [5. С. 10].

Примечание — Рисунок составлен на основе [5, С. 910].

Примером могут служить уже названные выше бюджетные авиаперевозчики, делающие акцент на стоимости билета, тогда как раньше авиакомпании акцентировали внимание на регулярности полетов, широте сети маршрутов и созданию оптимальных стыковок. Как пример можно назвать появление онлайн — трейдинга, обеспечивающего скоростные транзакции за меньшую стоимость, в отличие от традиционного брокерского обслуживания через индивидуальные консультации со специалистом. Следовательно, издержки по выполнению одних действий снижены благодаря самому методу их выполнения. Аналогичным образом, ценность одной деятельности может быть усилена другими действиями компании,

что создает конкурентное преимущество и рентабельность высокого качества. Это дает возможность демпинговать цены, и увеличить оборот перевозок

в несколько раз, поднимая рейтинг авиакомпании, оставляя ресурсы на ремонтные и регламентные работы, создавая имидж компании с низкими издержками.

### Рост потребительной стоимости

Возрастание  
потока наличных  
денежных средств



**Рост  
акционерной стоимости**

Повышение качества  
товаров и услуг,  
снижение издержек,  
использование ТАМО

**Возрастание  
ценности для  
сотрудников и  
партнеров**

Рост инвестиций, в результате  
чего появляется больше  
привлекательных видов работ

Рисунок 1. «Петля взаимного усиления» в растущей и процветающей компании

На основе вышеизложенного можно говорить о переосмыслении ценностей в сфере предложения товаров или услуг. Использование подобных инновационных методов дает возможность новым компаниям образовать новые рынки сбыта и быть на них конкурентными.

По Адриану Сливодскому инновационная бизнес-модель компании состоит из 7 направлений:

- основополагающее представление о бизнесе, что подразумевает новые предпочтения покупателей, новые источники прибыли;
- инновационные услуги или товара;
- новые сегменты покупателей;
- новые ценности компании;
- технологические инновации, новые методы предложения услуг;
- инновационная организационная структура;
- новейшие методы по распространению товаров или услуг [6].

На наш взгляд, для того чтобы выявить типизацию бизнес-моделей малых инновационных компаний необходимо разработать методiku, в основе которой лежит метод углубленного анализа и структуризации данной области с дальнейшей классификацией инновационных компаний.

Для этого нами разработан список вопросов для более глубокого интервью руководителей/собственников малых инновационных компаний, который включал бы определенное количество вопросов, сгруппированных в разделы.

Первый раздел должен содержать вопросы, связанные с информацией о компании, ее сфере деятельности и уникальности, а так же ее управленческую структуру.

Вторая группа вопросов должна быть связана с тем, что компания предлагает на рынок в данный момент. В интервью следует включить вопросы, ориентированные на понимание уровня инновационной направленности бизнеса, например: «Взаимосвязь науки и производства организации», «Использует ли новую технику и технологию», «Новизна продукции», и другие.

Более полное представление о бизнес-модели компании сможет дать третья группа вопросов, связанная с оценкой рынка, где работает эта организация, например: «Анализ спроса и предложения на рынке, а так же тенденции его развития», «Сегментация, фоссис», «Исследование уровня и условий конкуренции на выбранном рынке».

Четвертая группа вопросов отражает стратегию деятельности компании, нацеленную на поиск новых рынков и новых потребителей, разработку новой и модернизации имеющейся продукции, возможность поиска потенциальных инвесторов.

Нами проводилось интервью осенью 2016 года с собственниками инновационных компаний в г. Алматы и Алматинской области. В результате интервью было опрошено 15 инновационных малых компаний, с разной степенью отраслевой и инновационной направленности. Критерием отбора малых инновационных

компаний была готовность собственников ответить на поставленные нами вопросы, при этом получать дополнительную полезную информацию.

По итогам нашего исследования была выявлена следующая группа малых инновационных компаний, со следующими выявленными бизнес-моделями:

– Модель поставщика hi-tech, то есть компании, которые производят продукты — новую технику и технологию.

– Модель специализированного поставщика, где компании производят продукты и услуги для разных отраслей промышленности.

– Модель универсального поставщика, компании, реализуют уже готовые продукты для широких масс.

– Сетевая модель, где компании, являются связующим звеном большого количества партнеров (посредников, потребителей, поставщиков).

В заключении хотелось бы отметить, что раскрытая нами методика дала возможность выявить некоторые бизнес-модели малых инновационных компаний, а также дала возможность систематизировать группу малых инновационных компаний в соответствии с выявленными типами бизнес-моделей.

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## Section 10. Economics of nature management

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### Price formation in water economy

**Abstract:** Price formation in water economy is based on estimation of water resources (water objects). In connection with choosing certain method, we will have equivalent of some amount of definite water object. At first sight, it seems that this matter can't create any difficulty. But in fact, when we tried to determine its exact amount, we saw contradicting and very difficult circumstances. As a result, we will have estimation "in first approximation" of water resources and in many cases insufficient appreciation of natural resource as water, and in turn it concludes in abundantly difficulty of researched water system. We can select several methods on estimation of natural resources and among them exists economic estimation of water. According to the reasonableness, followings are the most important points of view: a) market estimation; b) rent; v) point of view on expenses; g) corresponding amount; d) total economic amount. Let's try to consider each of characteristics of stated point of views (methods).

**Keywords:** water resources, water economy system, natural resources, prices of water resources, water economy, ecologic resources.

Market mechanism of forming estimations in water economy. For the first water resources should be characterized in the market as product. It requires that water resources should be in the circulation on the basis of market laws. Basing on different "Signals" about their deficiency, the main quality of market is its reasonable using of different resources. But decrease of whole environment objects (resources), especially water objects, and excessive pollution, means that several destruction exist in the market mechanism. Prices, organized in "Water markets" expresses distortions of real amount (prices) of water resources. They don't express necessity of using social expenses and ecologic factors. As a result, lack of water resources and amount of demand and supply are estimated un-correspondingly. All of that create decreased incentive in effective using and protection of water resources. At the present time, there exist two methods for execution market relations against water resources. First method arises from the fact that water resources are state property. System of water economy monopoly owns them, and is representative

of government. As government is interested part from creating market relations with equal rights, it must create regulating body. This body must limit intentions of system on taking profits by increasing prices for using unchangeable water resources. As a result regulating body fixes price in the market. Representative of government executes tariff policy against monopoly, regulates interests of Water economy system and water users, providing with accounting models of numeral indexes. But, nobody can guarantee excessive regulation of corresponding processes at such methods. Inaccuracy of effective solution, implicitly variation information (numbers) used in calculations from real level, absence truthful information in the regulating bodies about water users (they are independent economic agents, they can't be compelled to obligatory inform center about technological and other information concerning their work, according to acting regulation, they can present numbers, permitting fulfillment tax control), also prices, calculated with effective and "fair" models don not also correspond to interests of country. Water economy system, not influenced to price,



turns to net bureaucratic organization leading to following consequences: tend "Expenses"; indifference to increasing effectiveness of own work (it is considered that this task is given to regulating body); abuse of necessity and interests of water users and others. Appropriate variant to such approach is noninterference of government to process of price formation. At such cases, Water economy system arises in the water market and water economy services as monopolist economy organization and prices to this products become a subject of agreement between Water economy system and water users. But market doesn't correspond to conditions of classic model of free market having improved competition due to seller's monopolism, agreement price doesn't include constant features, typical to prices sold in the free public market. Due to that, it is important revise a matter about ability of completely and comprehensively providing market system, serving for mutual communication process between water users and owner of natural resources. At that more probable and acceptable condition is using partly regulation of government in places where market can't regulate mutual fair relations.

Hang-the-expense approach on price formation in water economy. Such approach needs collect preparing and using expenses of water object. It gives opportunity to initial estimation of water resources. And its amount may be a starting point in determining of price. If water removed or degraded from such method, amount of its re-creation is widely used for estimation. At such cases, compensation potential expenses necessary for exchange lost or damaged resources to equal amount are calculated. Expense method includes principle contradictions: as water has good quality as an object, we can so easily use it, and we need less expenses for its developing and it takes less prices according to the expense conception.

Concept of appropriate amount of price formation in water economy (lost profits, income and advantages). This concept has decreased market price or if it hasn't price, it includes estimation of water resources and objects, and it gives possibility to determine profit, income and advantages and other profit, income and advantages, receivable from using resources of this object.

Concept of appropriate amount is connected with expenses conception. If the appropriate price of water is less, it needs same amount for compensation economic losses on preserving such resources. In practice such method is used for measuring "Storage price".

Concept of total economic value (amount) on price formation in water economy (TOTAL ECONOMIC VALUE). This conception expresses complex method

on estimation water resources and not only correct functions of resources, but also assimilating functions, learning efforts to estimation water services.

Amount total economic value consists of following indexes:

$$\text{УИК}_{\text{CP}} = \Phi\text{K}_{\text{CP1}} + \Phi\text{K}_{\text{CP0}} \quad (1)$$

$\text{УИК}_{\text{CP}}$  – is amount (value) of water resources;

$\Phi\text{K}_{\text{CP1}}$  – used amount (value) of water resources;

$\Phi\text{K}_{\text{CP0}}$  – unused amount (value) of water resources;

$$\Phi\text{K}_{\text{CP1}} = \text{T}(\text{Б})\text{K}_{\text{CP}} + \text{Э}(\text{Б})\text{K}_{\text{CP}} + \text{КМК}_{\text{CP}} \quad (2)$$

$\text{T}(\text{Б})\text{K}_{\text{CP}}$  – amount (value) of straight (direct) using of water resources;

$\text{Э}(\text{Б})\text{K}_{\text{CP}}$  – amount (value) of curve (indirect) using of water resources;

$\text{КМК}_{\text{CP}}$  – late corresponding amount (value) of water resources.

$$\text{Н}\Phi\text{K}_{\text{CP}} = \text{М}(\text{Б})\text{K}_{\text{CP}} \quad (3)$$

$\text{Н}\Phi\text{K}_{\text{CP}}$  – non using amount (value) of water resources;

$\text{М}(\text{Б})\text{K}_{\text{CP}}$  – existing amount (value) of water resources.

Taking into account above stated, if we make corresponding mathematic calculations, we will have following final formula:

$$\text{УИК}_{\text{CP}} = \text{T}(\text{Б})\text{K}_{\text{CP}} + \text{Э}(\text{Б})\text{K}_{\text{CP}} + \text{КМК}_{\text{CP}} + \text{КБК}_{\text{CP}} \quad (4)$$

Let us view each of them. Use value (amount) or consumer value is value (amount) arising from net profit taken from these resources. It consists of adding straight (direct) using amount, curve (indirect) using amount and late corresponding values. Direct use value consists of ecologic value (amount), taken from direct using object or resource, or direct use value (amount). Indirect value of using is used in global or wide enough regional aspect and tries notice profits for wider region. It is expressed with possibility of mutual disparity of global and local profit. Some objects, unprofitable for some regions or country may be vitally necessary for other countries and our planet. It includes regulating climate, protection water storing basins, fulfillment sanitary functions. Late (deferred, delayed, possible done) option value means individual readiness for payment to take effective with purpose of using flora and fauna with its residence places or preserving ecologic object. That means we must think about conservation resources for using it in future. In this case level of possible value consists of sum of direct and indirect potential (corrected) used amounts. Such form of value (amount) is like insurance value (amount). Non-use value or "Passive use" value is based on existing value of economic estimation of aesthetic aspects, that means value of nature, aesthetic nature for human, duty on nature

preserving against future generation, cultural value and so on. On estimation value of such amount we use reductive economic methods based on subjective estimation, theory of “readiness to pay” and soon. Amount of existence value is an unusable value and proves existence of resource, it didn’t connected with value of current or late using and comes from existence of any ecologic resources. As example of exiting value, even they didn’t see it, it can show people’s attitude to protect blue whale. Due to that, existence value is expressed by full readiness preserve flora, fauna and their habitat, even if they never use these resources. In some cases, this value can also include inheritance value. Main source of existence value is own attitude of generation, friends, relatives, human and nature. One of

the most effective methods for estimation late using and existing amount (value) is subjective money estimation. For example, on determining existence amount (value) of protection tropical forests, maximizes utility in the condition of limiting profits by choosing market and nonmarket domestic goods. If one of the nonmarket goods is known as social goods under name “protection tropical forest”, in this case, readiness for paying for these “goods” turns to price of forest protection, price of other goods, function of intention price of profits and members of housekeeping. Manner of housekeeping on this matter is formed with several social economic factors such as number of family members, their age, education, belonging to party and attitude of family members to environment.

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## Section 11. Economics of recreation and tourism

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### **Improvement of External factor dimension's structure for the assessment of persuasiveness of tourism destination websites using Factor analysis**

**Abstract:** Website is a complex system, which can be divided to several dimensions. This research is a part of research aimed to create Destination Management/Marketing Organization (DMO) tourism websites success evaluation instrument. External variables are cognitive and psychological factors, e. g. knowledge and interest towards destination, destination's popularity and perceived credibility of website. These variables affect individual's attitudes and beliefs and are influencing behavioral intention to visit a destination. Aim of this research is to explore the structure of the external variables and reduce quantity of variables for usage in subsequent research. Exploratory factor analysis discovered different structure from initially proposed basing on theory review. Four new factors were extracted, total quantity of variables were reduced. Factors were not found to be strongly reliable, and fourth factor found to be least reliable.

**Keywords:** Factor analysis, External factors, Website persuasiveness, External Factor dimension, Tourism website evaluation.

#### **Introduction**

In the era of digital information, when it became common to consult internet sources, many scientists are focusing on the topics related to the website management improvement aspects. Website is a platform for disseminating information, providing services, doing business. In tourism sector, website is important marketing instrument, well-designed and well-managed website may raise destination's popularity and increase visitation. Scientists concentrated much attention towards the question of the website quality and the influence of

website elements on the success of website and behavioral intentions of users [1; 2], including topics related to persuasiveness of communication [3; 4; 5; 6].

Apart of website elements and service elements provided on website, individual's knowledge, experience, motivation and constraints are forming prospective tourist's attitude towards destination and influence website's persuasiveness, in this research such factors are called — External factors.

The aim of this research is to explore the structure of the data related to external factor dimension, reduce

number of variables to achieve reliable structure which can be used in the further research.

## 1. Theory review

### 1.1. External variables and website persuasiveness

This research is a part of overall research working with Destination management/marketing organization (DMO) website's success evaluation model [7] which is based on the DeLone and McLean Information System Success Model [8] and the Technology Acceptance Model (TAM) [9]. Present research focuses on the re-

lationship between External and Other factors (further called External factors) and persuasive power of tourism website. (This relationship is marked with dotted arrow in Fig. 1.)

Website's persuasive power can be defined as an influence of website on individual's intention to visit recommended destination. Persuasive power of communication is affected by source of the message [3], elements of website [4; 5], users' knowledge and interest towards destination [6] and other external factors.

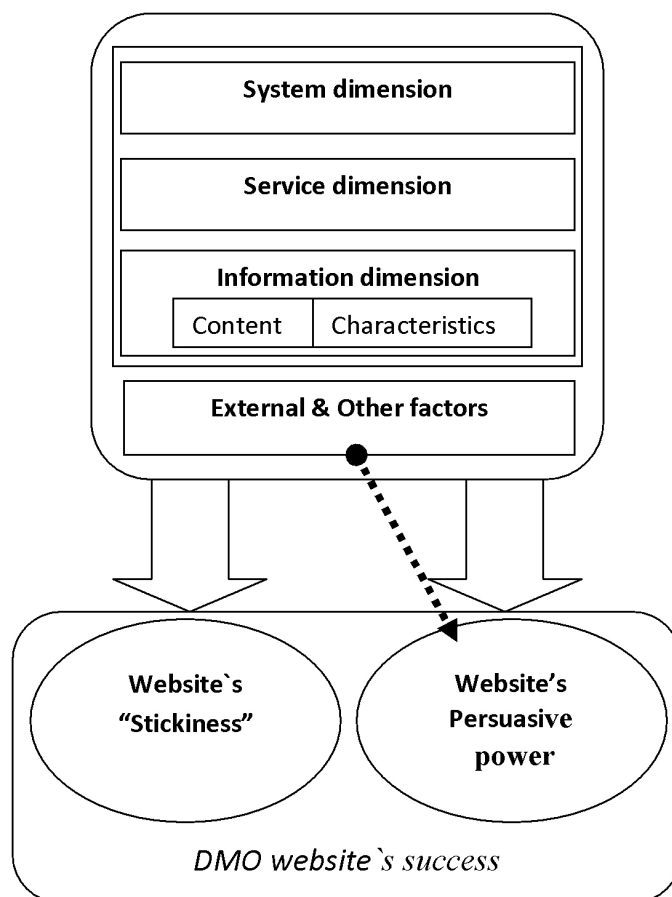


Figure 1. DMO website's success evaluation model [7, 69]

There are variety of external factors which can influence individual's perception and behavior. Different researchers use set of different external factors according to the specifics of their research topic [10, 166; 11, 40; 12, 29–30]. The external factors or external variables are used in the TAM introduced by Davis (1986) as an initial element in the model. External factors are influencing beliefs and attitudes and the latter are influencing user behavioral intentions [9, 985]. External variables may be regarded as any external (device, technology, help etc.) or internal factors (psychological, cognitive etc.) which can stimulate behavioral intention, and influence individual's beliefs and attitudes.

The TAM was inspired by the Theory of Reasoned Action (TRA) developed by Fishbein and Ajzen

(1975). In the TRA behavioral intention is influenced by individual's attitude towards behavior and by subjective norm. Subjective norm reflects a pattern when other people's opinion towards behavior influence individual's behavioral intention [9, 984]. It was suggested in other studies to research more about attitude towards destination and prior knowledge of it as mediating variable in the process of destination selection. (Perdue, 2001 cited in 5, 78).

In this research external variables' set includes tourist's prior knowledge of tourism destination, destination's reputation, website's reputation sub-dimensions. (see table 1.) [7] Prior knowledge of tourism destination and website's reputation sub-dimension cover individual's



attitude towards destination and website, and includes cognition degree of the destination.

Different users may have different involvement levels with the website or destination. Individual's involvement is described as a state of motivation, arousal, interest and so on which is directly connected to the perceived value, risk, importance etc. associated with destination or website [6, 41]. As suggested by Tang et al. (2012) destination website communication strategies should consider individuals' involvement levels, and develop communication routes' persuasion strategies to address more effectively those different groups.

Subjective norm is reflected in destination's reputation sub-dimension. Other people's opinion often influ-

ences individual attitude towards behavior or object. Website's reputation sub-dimension also covers the area of trust towards a mediator, information provider. Credibility of the message is influencing behavioral intention to visit a destination [5, 77] More trusted and more qualitative website would potentially have greater persuasive power and will more successfully influence potential tourist's intention to visit tourism destination advertised on the website. For example, it is known that users more often are consulting government tourism websites. (Boyne & Hall, 2004 cited in [13, 75]) Government tourism websites are perceived as more qualitative and abundant source of information comparing to private websites [14, 71].

Table 1. – External variables

External variable sub-dimension	Variable name	Measurement items
<b>Tourist's prior knowledge of tourism destination</b>	frsttm	You did not know before tourism destination country presented on the website.
	plnvisit	You've already made plans to go to the tourism destination country presented on the website, but haven't been there yet.
	intrst_only	You feel interest towards the tourism destination country presented on the website, however, you do not have plans to visit it.
	visited_d	You have already visited tourism destination country presented on the website.
<b>Destination's reputation</b>	famous_d	The tourism destination country represented on the website is famous.
	ntfamous_d	The tourism destination country represented on the website is not famous.
	popular_d	The tourism destination country represented on the website is popular, everyone wants to visit it.
	ntpopular_d	The tourism destination country represented on the website is not popular and few people want to visit it.
	safe_d	The tourism destination country represented on the website is safe.
	ntsafe_d	The tourism destination country represented on the website is not safe.
<b>Website's reputation</b>	wbs_rel	Tourism destination website's reliability is high.
	wbs_ntrel	Tourism destination website's reliability is average.

### 1.2. Research aim and questions

The goal of the research is to explore chosen variables and external variable's sub-dimensions, eliminate least reliable variables from the framework. New variable framework will be used in the further research.

Research questions:

- 1) What is the structure of external variables sub-dimension and the relationships between variables?
- 2) If some of the measurement items should be omitted from the further research?

## 2. Methodology

### 2.1. Data collection and results

Data for this research was collected from Chinese respondents in the period from March till June, 2015. Respondents were asked on the streets of Beijing (P. R.C.) to fill in self-administered questionnaires; partially responses were obtained through Internet website www.wenjuan.com. All together were collected 116 questionnaires in Chinese language. Seven point scale is used for the measurement, where 7 stands for highest influence on travel intention and 1-no influence at all on travel in-

tention. Missing data accounted per variable not more than 10%, therefore, it is acceptable to ignore missing values, or employ any imputation technique to substitute missing values [15, 47–48].

## 2.2. Factor analysis

Factor analysis is technique which does not require dependent variable. This analysis is used for defying data structure, understanding relationships between variables and reduction of variables, for example by elimination of variables which have least correlation with factor, and creating uncorrelated factors [15, 91–151]. In this research R-type exploratory analysis is used to define relationships among variables and group them into latent factors [15, 93].

To use factor analysis researcher is required to check data for the appropriateness. Data measurements, data sample size, correlation among the variables [15, 103–105; 16, 2].

Normality is not always considered necessary. For example, principal component and principal factor methods can be used when data is not normally distributed [16, 2] But normality is considered important if significance of the factor is statistically tested [15, 103].

Data should be measured at least at ordinal level, however coded (1–2) data can be used as well [17, 240] The general rule of thumb is to have minimum absolute sample size of 50 observations and 5 observations or more per variable [15, 102; 16, 2] In this research there are 12 variables, therefore sample size of 116 observations is adequate.

Data correlation is checked through Bartlett's test of sphericity, there sig. < 0.05 indicates that correlation is sufficient among variables; if after visual check there are discovered substantial number of correlations greater than 0.30, this indicates that the sample can be used in factor analysis; inspection of anti-image correlation matrix helps to determine variables with high partial correlation, larger anti-image correlations may signal that matrix is not suitable for factor analysis; measures of sampling adequacy (MSA) which lay on diagonal of anti-image matrix must exceed 0.5, if value is less than 0.5 variable should be eliminated from the analysis; and Kaiser-Mayer-Olkin measure (KMO) greater than 0.5 shows that sample is adequate for factor analysis [15, 103–105; 16, 2].

After the sample is tested for the adequacy, following steps are performed:

- 1) Extracting initial factors;
- 2) Specifying number of factors;
- 3) Rotating factors;

- 4) Interpreting rotated factor matrix;
- 5) Terminal solution on factor structure;
- 6) Validating new factors [15].

## 3. Analysis and results

### 3.1. Profile of respondents

Gender distribution of respondents is equal, 50% of males and 50% females filled in the questionnaires. Young people from 18 to 35 years old accounted for 88% of responses, elderly people from 36 to 60 years old –10%. More than half of the respondents — 58% were students, 26% — companies' employees, 4%- people working in governmental sector and 12% of another occupation. Most of the people have never travelled before, but have plans for travelling in future- 88% and 86% accordingly. Most of the respondents have experience using Internet and often are using it for tourism related information search, among them 10% always are using Internet for tourism information search, 47% are often using Internet, but there is also quite high percentage of those who rarely consult Internet for this purpose- 42%.

### 3.2. Results of Factor analysis

In this research for the factor extraction was used one of the most used methods — Principal Components Analysis (PCA). This method is used for summarizing most of the variance of variables in the minimum number of uncorrelated factors. Principal Component considers all of the variance (unique and common) in the variables. PCA can be used with data which is not normally distributed [15, 107; 16, 2–5].

Criteria for decision on number of factors which are commonly followed are: 1. Kaiser's criteria- Eigen Value > 1; 2. Kettell's criteria- Examination of Scree plot keeping all the factors before the breaking-point (K). It is suggested to check solutions for number of factors K, K+1 and K-1.; 3. Percentage of variance explained should be at least 50%; 4. Hypothesized number of factors also should be taken into account, factors should have sense [16, 4; 18, 259–260; 15, 108–111].

Factors were rotated with orthogonal rotation Varimax. Orthogonal rotation produces uncorrelated factors [19, 3]. Varimax rotation is maximizing the sum of the squared factor loading across the columns, it tends to give clearer separation of factors, where variable tend to have maximum loadings on as few factors as possible [15, 115; 16, 5].

#### 3.2.1. Factor solution

First factor extraction approved that sample can be used in Factor analysis (Bartlett's test sig. = .000, KMO = .749, MSA values > .6). However it also revealed that communality of variable "famous\_d" is low (.477) and it cross-loads with other factors, hence extraction of fac-

tors was repeated without this variable. Second extraction with rotation showed that variable “visited\_d” had significant cross-loading with another factor, and would complicate interpretation of factor solution; therefore it was eliminated from the further analysis. New extraction and rotation proved to be most successful among other possible variants, as it allowed simplest and easy to interpret factor structure.

Factor extraction gave solution of four factors with eigenvalues greater than 1 end explained 71% of total variance in factors, which is satisfying. (see table 2.) The results of Bartlett's test of sphericity statistics showed sig. = .000, KMO value = .704, correlations greater than 0.3 accounted for 29% of cases (13 out of 45 cor-

relations) at sig. = .000, MSA values exceeded value of .5 and anti-image matrix did not contain large correlations — all these indicates that sample matrix is suitable for further analysis.

All factors contain variables with indicative loadings ( $> .7$ ), which show that the factor structure is well-defined. [15; 116–117]. Result are statistically significant, as reported for sample size of 100 observations significant loading is 0.512 (Stevens 2003, P. 294 cited in (16), 6 to 0.55 [15, 117]). No variables have significant cross-loadings. Particularly, difference between highest loading of variable and loading on other factor (same variable) does not exceed 0.2. [18, 271] Rotation results are displayed in the table 2.

Table 2. – Rotated Component Matrix

	Component				Communality
	1	2	3	4	
ntfamous_d	<b>0.841</b>	-0.080	0.155	0.229	0.791
ntpopular_d	<b>0.767</b>	0.252	0.203	0.114	0.706
intrst_only	<b>0.718</b>	0.330	-0.037	-0.040	0.628
wbs_rel	0.096	<b>0.848</b>	0.098	-0.017	0.738
famous_d	0.187	<b>0.712</b>	-0.106	0.259	0.620
safe_d	0.111	<b>0.693</b>	0.053	0.136	0.513
wbs_ntrel	0.073	0.022	<b>0.891</b>	0.116	0.814
ntsafed_d	0.161	0.037	<b>0.853</b>	-0.134	0.772
plnvisit	-0.035	0.284	-0.180	<b>0.813</b>	0.776
frsttm	0.359	0.051	0.191	<b>0.792</b>	0.795
Rotation Sums of Squared Loadings					Total
% of Variance	20.29	16.69	16.81	14.74	71.53

**Factor 1** contains 3 variables: ntfamous\_d (loading .841), ntpopular\_d (.767), intrst\_only (.718). According to the nature of variables this factor can be named as “Not prestigious destination”.

**Factor 2** contains 3 variables: wbs\_rel (loading .848), famous\_d (.712), safe\_d (.693). It can be named as “Reliable place”.

**Factor 3** contains 2 variables: wbs\_ntrel (.891) and ntsafed\_d (.853). It can be named as “Unreliable place”.

**Factor 4** contains 2 variables: plnvisit (.813) and frsttm (.792). This factor is unified by the concept of involvement. “plnvisit” variable is describing situation when individual already knows about the destination and has a plan to visit it. However variable “frsttm” describes situation when individual has no prior knowledge of the destination, and no prior intention to discover destination. Therefore possible name can be “Involvement”.

### 3.2.2. Validity

Results of factor analysis show that the factor structure is not very stable as there are two variables which

have difference between two loadings lower than .05. [18, 271–272] Particularly, for the variable “intrst\_only” difference is .388 (.718 (factor 1) – .330 (factor 2)), and for variable “frsttm” difference is .433 (.792 (factor 4) – .359 (factor 1)). (See table 2.) Generally accepted that more reliable factors contain 3 and more variables with significant loadings, the value of loading can be smaller if number of observations is bigger. [16, 3–6; 19, 5] Therefore first two factors are more reliable. It is reported that the Chronbach's alpha is influenced by the number of items in the tested scale. It is generally agreed that Chronbach's alpha  $> .7$  indicates that items in scale are reliable [15, 125], however, values  $> .6$  are also acceptable for exploratory research (Robinson at al. (1991) cited in *ibid.*). The results of Chronbach's alpha test prove that factor solution is reliable. For Factor 1 Cronbach's alpha is .740, Factor 2 it is .680, Factor 3 it is .735 and Factor 4 it is .599. Therefore 4<sup>th</sup> factor is least reliable along with other findings this leads us to decision that this factor can be excluded from the next research framework.



### Conclusion

The results of the Exploratory Factor analysis suggest that the initial theoretical structure of the variables should be changed from free to four dimensions. New three factors were named as “Not prestigious destination”, “Unreliable place” and “Reliable place”, fourth factor “Involvement” is found out to be least reliable, therefore can be omitted in the consequent research. Quantity of variables was reduced from 12 to 10. Variables “popular\_d” and “visited\_d” were excluded from Factor solution.

Factor “Not prestigious destination” reflects concept of subjective norm, or other people’s opinion. From one side, this factor emphasizes that places which are relatively infamous among other people have influence on the degree of website persuasiveness. However it also contains individual’s attitude towards destination. Undiscovered destination, destination which does not have prestige is correlating positively with the destination which is interesting for user, but this interest is not high enough to stimulate person to form travel intention.

Factors “Reliable place” and “Unreliable place” both characterize credibility of objects. These two factors are reflecting positive and negative sides of credibility. Both factors contain items which cover destination and website reliability. Additionally, factor “Reliable place” contains concepts which are based on reputation and prestige of destination, and partially reflecting subjective norm and individual’s knowledge.

Factor “Involvement” is least reliable factor. Variable “plnvisit”, reflecting formed intention to visit destination. However variable “frsttm” is reflecting situation when potential tourist has no prior intention to visit destination, and no knowledge of destination. In both cases the level of the involvement with destination was different.

This research is based on Chinese language questionnaire; therefore there can be some ambiguity, which comes from the language conceptual differences. Research is of exploratory nature and is due to confirmation by other studies.

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## Section 12. Economics, organization and management of enterprises, branches, complexes

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### Socio-economic conditions for development of tourism in The Ivanovo Municipality

**Abstract:** This paper examines the existing socio-economic conditions in the Ivanovo Municipality which are important for the development of tourism in the territory. The basis for creating the conditions and environment for the development of tourism in the Municipality are the local self-government authorities and local executive authority which carry out local government. Some tools whose use can lead to the gradual transformation of the conditions in tourist resources are indicated.

**Keywords:** socio-economic conditions, local government, tourism, tourism resources.

The base for creation of conditions and environment for the tourism development in the Ivanovo municipality are the local government bodies (municipal council) and local executive authority (mayor and municipal administration), which together implement the local authority. Their role is associated with the adoption of a program for tourism development in the municipality in accordance with the priorities of the Regional Development Strategy for the Rousse region, and the Strategy for tourism development in the Ivanovo municipality in line with local tourism resources and needs.

The program should provide measures for the construction and maintenance of the infrastructure servicing tourism in the municipality, the tourist information centers, tourist sites, which are municipal property, organization of events and activities with local and national significance that contribute to the development of tourism, conducting studies, analyzes and forecasts for the development of tourism, promotion of the municipality tourist product, the municipality membership in tourism associations and in the management organization of the tourist area, improving the quality of services offered in local tourist sites. The Mayor of Ivanovo municipality is responsible to ensure the development of the Program and the preparation of a report on its implementation. After they get approved by an advisory council, his

duty is to submit them for consistent adoption by the municipal council.

The Tourism Act empowers and obliges the mayor of the municipality to set up and manage an Advisory Board and municipal expert commission for categorization of tourist sites. Their activity is associated with the determination of the category of tourist sites, creation and maintenance of a municipal register for categorized tourist sites in the municipality and preparation of proposals for determining the amount of the tourist tax by the municipal council. They are responsible for the development and implementation of programs and projects in the field of tourism, financed by the European Union and international organizations, cooperation and support of initiatives of public authorities, the organization for management of the tourist district and tourist associations for the development of tourism in line with the national policy in the field and others [1].

Consequently, two groups of conditions affecting the development of tourism in the municipality can be identified. The first one covers economic conditions — availability of programs for tourism development (with adequate volumes, deadlines, funding), public-private partnerships, investment in tourism, incentives and subsidies for the business, marketing tourist activity (event calendar, participation in exhibitions,

availability of a tourist information center — TIC). The second group includes the social conditions — tourism accessibility for the local population, staffing of the tourism sector, ensuring the safety of residence for tourists, sufficient accommodation capacity, opportunities for employment in the tourism sector.

The development of tourism in the Ivanovo municipality is underlying in the Strategy for Development of Tourism in the Ivanovo Municipality for the 2014–2020, The Municipal Development Plan of Ivanovo Municipality for 2014–2020 and The Program for development of tourism in the Ivanovo municipality in 2016. These see tourism as one of the priority sectors for development in the Ivanovo Municipality.

The growing role of local authorities and the opportunities for strengthening the public-private partnerships (for example, the creation of a local initiative group) provide an environment for real investment and profit from the development of tourism in the Ivanovo municipality. Outstanding cultural events which could currently attract participants and visitors from home and abroad are “Children of Polomieto — holiday in the monastery“, „From Polomieto to Danube river, together“, Festival of the mushroom. These events may underlie in the development of an event tourism product and contribute to its development, both in the local market of tourist services and on transborder and international level. The Ivanovo Municipality has a tourist information center located in the Town Hall in the center of Ivanovo. It provides information about tourist sites and tourist services in the territory.

The Ivanovo Municipality is located in North Bulgaria, in the Danubian plain, in the administrative area of Ruse (NUTS 3) and in the North Central region (NUTS 2). It is bordered on the north with the Danube River and with the Municipalities of Ruse, Vetovo, Tsar Kaloyan, Dve Mogili and Borovo. It is bordered on the north with the Danube River and with the Municipalities of Ruse, Vetovo, Tsar Kaloyan, Dve Mogili and Borovo. Its transportation and geographical location is favorable due to the interception of two of the European Transport Corridors (№ 7 and № 9), which ensures the connection between the areas of the Baltic and the North Sea on one hand and on the other hand the connection between the Mediterranean and Black Sea. In the system of railway links the municipality is well secured. Important arterial thoroughfares cross the territory of the Municipality — railroad Ruse — Gorna Oryahovica — Sofia and highway roads Ruse — Sofia and Ruse-Varna, and thus connecting Central Europe with the Black Sea Region and Asia.

The municipality has a relatively well developed road network that allows relatively quick access from the settlements to the municipal center and tourist sites. Some of the roads are in poor condition, which creates problems in the accessibility of the relevant points of interest of cultural and natural heritage in the Ivanovo municipality. The transport links between the villages and the center of the municipality are not sufficiently developed.

The Ivanovo Municipality holds first place in terms of territory size in comparison to its neighboring municipalities in the Ruse Region and fifth place in terms of population — 9 429 people, last counted on 01.02.2011.

The population density in Ivanovo Municipality is 19 people per km<sup>2</sup>, which puts it at last place in terms of population density in the Ruse Region. The town network of the Municipality includes 13 settlements: the municipal center Ivanovo Village as well as the villages Bozhichen, Koshov, Krasen, Mechka, Nisovo, Pirogovo, Tabachka, Svalenik, Trastenik, Cerovec, Cherven, Shtraklevo. The biggest villages are Shtraklevo (2337), Pirogovo (1649), Trastenik (1315) and Ivanovo (1299).

The administrative center of the Municipality is Ivanovo village which is located on a plain terrain with seemingly unvaried relief with altitude about 270 m. Its building development starts with the building of the railway Gorna Oryahovica — Ruse in 1895. It is located about 5 km away from the old village and The Rusenski Lom River.

The labor market in the municipality has relatively unlimited possibilities for labor supply, which can be qualified and requalified for realization of tourist services and enhancement in the volume and quality of the tourist product. The demographic trends in the region are typical for the North Central Region and the neighboring municipalities

The trends in employment and unemployment do not report significant changes in recent years. The economically active people in the Ivanovo municipality amount to 1970 people and represent 1.8% of the economically active people in the region of Rouse and about 0.05% of the economically active population in Bulgaria. The share of unemployed people amount to 18.9% of all economically active people and it is lower than the share of unemployed people from all economically active people in Rouse average (19.1%) and higher than the country average (14, 9%) [2].

The Ivanovo municipality, as an agricultural area, develops mushroom production, wood processing, production of truck trailers, car repairs. The number of non-financial enterprises operating in the Ivanovo municipality in 2011 is 227 [2]. The industry has the poten-

tial to meet the growing needs of the tourism industry in the territory related to the construction, furniture, food

products, products from agriculture and forestry, souvenirs production, transportation, services and others.

Table 1. – Settlements, area of the urbanized territory and population of the Ivanovo municipality

№	Settlement	Area of the urbanized territory	Population as of 1.02.2011 according to data from the last census
1	Bozhichen	571	178
2	Ivanovo	1299	818
3	Koshev	521	316
4	Krasen	907	719
5	Mechka	1121	630
6	Nisovo	640	108
7	Pirgovo	1956	1649
8	Svalenik	1115	923
9	Tabachka	642	100
10	Trastenik	2547	1315
11	Cerovec	802	109
12	Cherven	1030	227
13	Shtraklevo	2738	2337

Source: NSI URL: [http://statlib.nsi.bg:8181/isisbgstat/ssp/fulltext.asp?content=/FullT/FulltOpen/P\\_22\\_2011\\_T1\\_KN1.pdf](http://statlib.nsi.bg:8181/isisbgstat/ssp/fulltext.asp?content=/FullT/FulltOpen/P_22_2011_T1_KN1.pdf), Ivanovo Municipality

All settlements in the Ivanovo municipality have central water supply, except for the settlement formations: Stalpishte, Pirgovo Port and Pumping Station — Pirgovo. The water supply network is amortized and with high water losses. The high water supply for the settlements is a precondition for development of tourist services. There is a need for introduction of effective systems for use of water resources which could improve the conditions for various forms of tourism in small populated areas.

There is partly constructed sewerage system for domestic sewage in the central part of Ivanovo village, however, the lack of such at the time is no obstacle for offering quality travel services. All settlements in the municipality are electrified and the electricity needs are met.

The Ivanovo Municipality has a well developed telecommunications infrastructure which meets the most latest requirements for communications. Between villages and international connections can be made by phone, fax and Internet. The municipality has good network coverage of mobile operators.

Health care in the municipality is provided by six doctors. In the settlements there are constructed and functional consulting rooms. In the Ivanovo municipality there are no hospitals which is one of the main problems of health infrastructure.

The accommodation facilities in the Ivanovo Municipality are twelve in number — mostly low-category.

They can satisfy the interest of the less affluent tourists. Guest houses dominate — eight in number, with category one-star. Family hotels are next — three in number. Each of them has a different category — one, two or three stars. There is one five-star hotel which operates in the territory. The territory has 100 beds for accommodation with one star, 41 beds for accommodation with two stars, 62 beds for accommodation with three stars.

Data show that 50.74% of the beds are in accommodation facilities with two stars and three stars, and 49.26% in accommodation facilities with one star. The analysis reveals that the base is predominantly one-star — 75% of the accommodation facilities in the municipality, and has the potential to satisfy the interest of tourists towards cheaper accommodation. Meanwhile, for those tourists seeking more luxurious accommodation conditions, prerequisite are created with the aim to meet their needs. The percentage of beds in three-star accommodation facilities is 30.54%.

Data show that restaurants and entertainment facilities in the Ivanovo municipality are eight in number, have a one star and provide 500 seats. It should be noted that the accommodation, catering and entertainment facilities in the Ivanovo Municipality remain a constant number in recent years which indicates a constant visitor and tourist interest.



Table 2. – Accommodation facilities in the Ivanovo Municipality

Accommodation facilities	Number of rooms	Number of beds	Category
Family hotel „The Black Stork”, Nisovo village	10	20	One star
Guest house „The four pines”, Nisovo village	5	10	One star
Guest house „Pri Skalite“, Bozhichen village	6	12	One star
Guest house „Milko’s house”, Koshov village	3	5	One star
Family hotel „Rusenski Lom”, Koshov village	20	40	Three stars
Guest house „The well”, Ivanovo village	13	31	Two stars
Guest house „Bim house”, Cherven village	5	9	One star
Guest house „Orehite”, Bozhichen village	8	16	One star
Guest house „Angel”, Koshov village	8	16	One star
Guest house „Neda’s house”, Cherven village	4	12	One star
Family hotel „Private Club Valdes“, Bozhichen Village	5	10	Two stars
Hotel and winery „Seven generations”, Mechka village	11	22	Three stars
Total	98	203	

Source: Ivanovo Municipality

Table 3. – Catering and entertainment facilities in the Ivanovo Municipality

Catering and entertainment facilities	Number of seats	Category
Snack bar, Ivanovo village	50	One star
Winery „Mehandjiiska sreshta”, Pirgovo village	90	One star
Snack bar „Indiiski kolibi“, Trustenik village	20	One star
Bistro „Tir — parking” Trustenik village	50	One star
Restaurant „Sedem pokolenia” Mechka village	80	One star
Snack bar „Attraction”, Cherven village	50	One star
Cafe, Mechka village	50	One star
Restaurant „Chernia shtarkel”, Nisovo village	110	One star

Source: Ivanovo Municipality

The transformation of the socio-economic conditions in tourism resources which will ensure the development of tourism in the Ivanovo municipality is happening gradual and is secured by the use of complex of instruments such as:

- attractive tourist image of the territory;
- efficient marketing strategy;
- development of a marketing strategy;
- ensuring the safety of tourists;
- legislative support for tourism;
- availability of qualified staff.

Taking into consideration the above text and based on the conducted analysis the following conclusions could be drawn:

– The development of tourism in the Ivanovo municipality is ensured by the development and implementation of planning documents — strategies, plans and programs for tourism development and their public funding combined with the investments of local business.

– A complex analysis of the tourism potential of the Ivanovo municipality based on the existing socio-economic conditions and taking into consideration the quality of the administrative capacity of the local government favors the development of tourism in the area.

The socio-economic conditions affecting the development of tourism in the Ivanovo municipality are closely interconnected, mutually conditioned and influence each other. It could be said that the infrastructure facilities, investments, entrepreneurship and last but not least human resources play a substantial role.

The currently existing conditions greatly favor the development of tourism in the area and thanks to the planned activities, positive changes could be expected. Tourism development has the potential to reduce the unemployment rate in the Ivanovo municipality, to develop the small and medium businesses, to stimulate the development of infrastructure and transport network.

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## Justification of the concept of mathematical methods and models in making decisions on taxation

**Abstract:** The paper presents the concept of the application of mathematical methods and models in making decisions on taxation in Ukraine as a phased process. Its performance result is the selection of an effective decision based on regression and optimization models.

**Keywords:** tax system, taxation, optimization models, tax burden, tax rate, concept of taxation, shadow economy.

The tax system in Ukraine is a combination of taxes and duties (mandatory payments) established on the basis of the legal rules that regulate the amount, form and timing of collection of taxes and payments into the government budgets.

According to the practice, the result of tax burden increase and, in its turn, increase of budget revenue, is always the acceleration of inflation processes. This happens because the tax rate increase results in the increase in prices for goods and services leading to the worsening of the financial standing of economic entities and ordinary individuals. For the process of tax system reformation in the country it is required to use the most effective methods of taxation of economic entities, and to determine the optimal tax rates for their activities. However, much too low tax rates will result in low tax revenues, and much too high tax rates will force business into a shadow economy. In this regard, the scientific studies related to determining the optimal tax burden in the country take on particular importance. The practice of making macroeconomic decisions requires the creation of tools that would enable a sufficient degree of reliability to evaluate the effectiveness of the state fiscal policy in terms of its impact on the level of business activity in the country. The urgent task for Ukraine is to search its own concept of taxation that would meet the peculiarities of the real situation in the economy because the overapply-

ing of forms and methods of tax policy employed in the world's practice not only failed to provide the desired results but also aggravated the controversy and misunderstanding between the state and entrepreneurship.

The problems of the tax system reformation in the conditions of the Ukrainian economy market transformation, theoretical and practical aspects of the income taxes impact on the budget, the tax system optimization from the point of fiscal adequacy and economic efficiency were highlighted in the researches of such well-known national economists, such as V.L. Andrushchenko [1], L. O. Biliaievska-Plotnyk [2], O. D. Vasylyk [3], V. V. Korolenko [4], Y. I. Liashenko [5], T. F. Mykhailova [6], and A. M. Sokolovska [7]. The economic and mathematical model of tax burden control, scientific and practical recommendations for effective use of tax potential of Ukraine's economy were developed in the research papers of I. Ya. Chugunov [8], S. L. Londar [9], G. S. Yastrebova [10], and O. Grin [11].

However, the task of the research of support for making decisions in taxation and building the economic and mathematical models that, in the best way, allows illustrating the process of the state budget replenishment and determining the optimal tax burden, is vital for the contemporary economic science and requires a detailed and comprehensive analysis and the searching for the effective methods of solution.

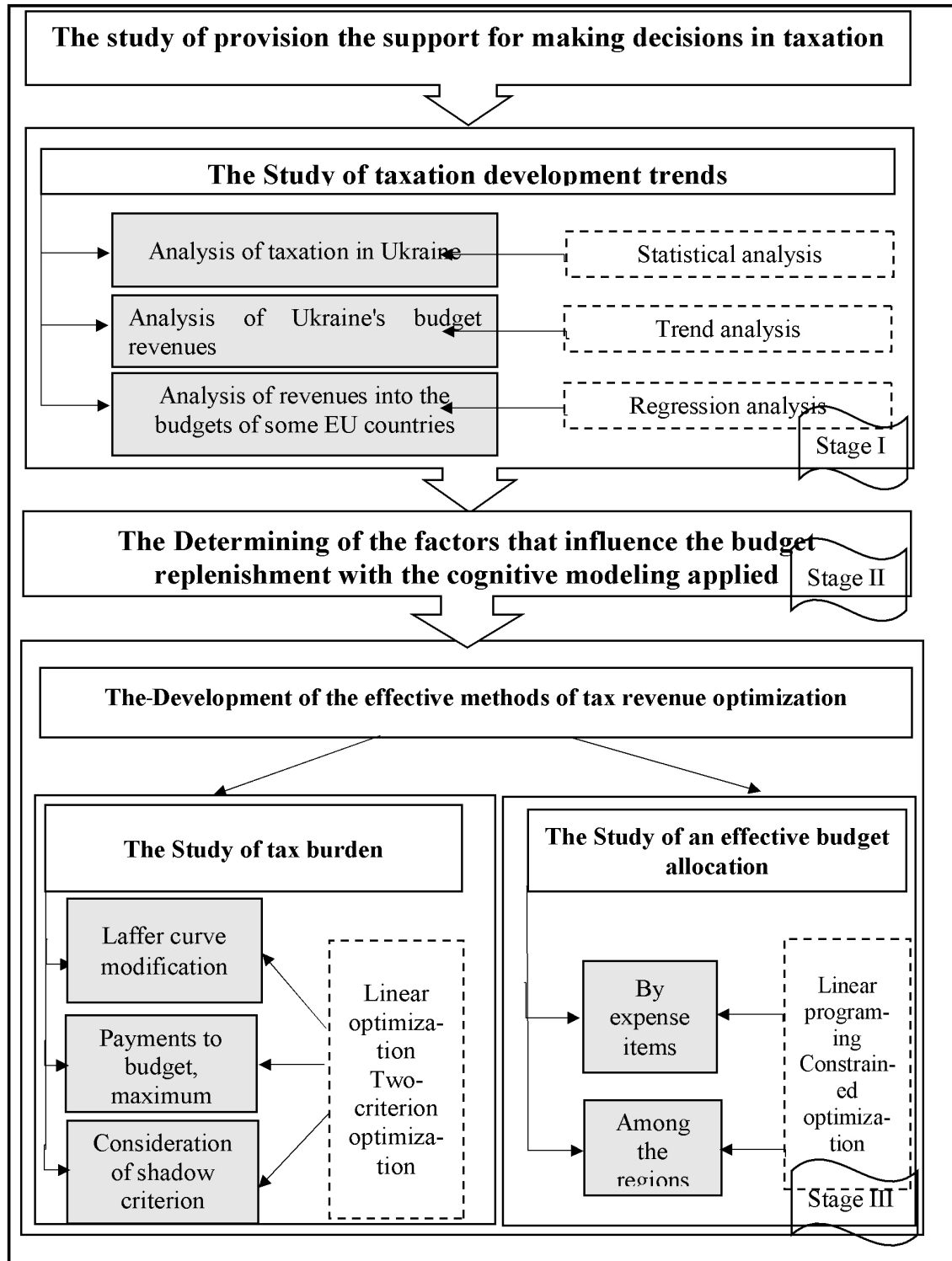


Figure 1. The concept of the application of mathematical methods and models in making decisions on taxation

One of the options of solving this task may be the concept that we offered — to use mathematical methods and models for making decisions on taxation and effective growth of the budget revenue by means of the methods of economic and mathematical modeling (Fig. 1). In our opinion, the study of the process of provision the support for making decisions in Ukraine's taxation should include three main stages as following:

1. The Study of taxation development trends;
2. The Determining of the factors that influence the budget replenishment with the cognitive modeling applied;
3. The Development of the effective methods of tax revenue optimization.

During the first stage of the concept, the collection of statistical data that describe the current conditions

of the government and local budgets and the trends of their replenishment process development is performed; and their economic analysis is carried out. Also, during this stage there is the selection of the indicators that will be used for the building of economic and mathematical models further on.

It is possible to get the information about tax and non-tax revenues to be based on the statistical data that describe the current conditions of the government and local budgets replenishment. The State Statistics Service of Ukraine provides a lot of such data. Its Department of Structural Statistics and Corporate Finance Statistics gives forth the statistical publications, such as “Business Entities Activities”, “Small Business Entities Activities”. The comprehensive publications are “Annual Abstract of Statistics of Ukraine”, “The Regions of Ukraine”, “Ukraine by the Numbers”, and “Statistical Bulletin”.

Based on the statistical data sets, it is appropriate and convenient to build various economic and mathematical models and implement them by using corresponding software. The practical value of the economic and mathematical modeling is the potential possibility to formalize processes characterized by high level of uncertainty and randomness (in particular, the processes of the government budget replenishment and determining of the tax burden also meet these requirements).

The applying of the economic and mathematical modeling makes possible the analyzing of the trends of all levels budgets replenishment at different times, to study and compute the impact of various factors on the value of budget revenues and to determine an optimal tax burden.

The trend analysis [12, 13] was used to study the trends of the tax system of Ukraine following up the period of the years 2001 to 2015. The Building of time trends through time series modeling is the method, which is recommended at the starting of the analysis in order to have the first impression of the process development trends and the determining, which models should be applied in future to approximate the process.

We have selected some equations, which are frequently used for the building of time trends, in particular linear, logarithmic, quadratic, with a power, exponential, the unknown parameters of which are calculated by least square method.

For the study of the process of tax revenue into the budget, the regression analysis [14] was used as one of the most powerful and easiest tool for the practical implementation to measure the density of connection between the factors. By using regression models it is possible not

only to follow the current trends and specific features of the studied process but also to do forecast for the future periods and to develop the strategies of impact on specific factors aimed to change the resulting indicator.

The resulting linear equations of the regression, as well as the multifactor model [15] (for its building there selected the factors related to the dependent variable as close as possible) are used to assess the impact of each selected factor on the studied process and to forecast the scope of revenues into the government budget.

The result of the concept's first stage is the set of models that (determined on the basis of correlation and determination coefficients) most correctly describe the development of tax systems of Ukraine during the period from 2001 to 2015.

During the second stage of the concept it is proposed to analyze the factors that influence the budget revenues by means of applying the cognitive modeling. In particular, we will examine the factors that influence the replenishment of the government and local budgets in real-time mode.

The cognitive model (or cognitive map) of the system represents an oriented signed (weighted) graph, the nodes of which correspond to the elements (subsystems factors) of the system under investigation, and the arcs of which correspond to the relations between them. In terms of the issue under investigation, the important factors (the graph nodes) are the following:

- private enterprises;
- state institutions;
- natural individuals;
- the tax burden;
- shadow economy.

Thus, the first and the second stages of the concept include the consideration of the government budget replenishment process from the point of macroeconomics, i. e. it is possible to use the results of these stages implementation for the development of the recommendations for more effective management (the stimulation of the factors that positively influence the process, and the reduction of the detrimental effect of other factors) of the process of the development of the tax system of Ukraine.

The use of economic and mathematical modeling makes possible the time-wise analyzing of the trends of the replenishment of all levels budgets, to study and compute the impact of various factors on the amount of budget revenues and the area of taxation.

During the third stage of the concept, the development of the effective methods of the determining of the tax burden and budget allocation is carried out. The opti-



mization models were used for the development of these methods.

We proposed a task model for determining the optimal tax rate with the use of modified Laffer curve [16], which shows the relation between the value of a statutory aggregate tax rate and tax revenues. For example, if the current tax rates are too high, then their optimal decrease will make possible to increase the production providing that tax revenues are not changed or even increased.

For Ukraine, as for many other countries, the problem of shadow economy is particularly important. This is due to the fact that in the course of economic reforms and the introduction of market mechanisms of economic management, which were first carried out in the conditions of the most profound crisis, the extent of shadow economic activity and its role in the reconstructive process had increased dramatically. In view of the issues stated above, during this stage it was proposed an optimization task model for determining the optimal tax rate taking into account the shadow economy coefficient.

The two-factor optimization model for solving the issue of production planning that ensures the maximum tax payments to the budget [17], is also proposed to solve the issue of increasing tax revenues without increasing the tax burden on manufacturers. The model is applicable to enterprises that while using available resources are able to produce the products of various types. The use of models makes possible to plan the production when available resources are used to maximum, and at the same time the maximum profit and tax amount (excise duty) from sales is ensured.

For the efficient functioning of the state budget system, it is required, on the one hand, to replenish the government and local budgets as maximum as possible, and on the other hand, to reallocate the budget funds in the optimal way. It stands to reason that the execution of budget expenditures is related to the use of budget funds, which is determined as budget financing [18] in the economic literature. The local budget expenditures are formed by means of assigning the expenditure functions to the bodies of state and local governments. The financing of local expenditures and the use of local fi-

ancial resources is closely related to the state budget expenditures. As it is the state that, while using financial resources, provides the opportunity for the performance of tasks and functions that it faces at one or another stage of social development.

The so-called chronic deficits of the budget, state specialized funds and the powerful state-owned companies lead to systemic macroeconomic problems. Thus, the current model of a budgetary system creates a space for the specific reorientation of financial flows, as the result of which the budgetary resources are often used for other than the purpose specified, ineffectively, and imbalances are formed at some levels of the budget system.

We have analyzed the effectiveness of the budget system of Ukraine, in particular the local expenditures financing, there was created the time trend dynamics of local expenditures, and there was developed the mathematical task model for the determining of the optimal allocation of funds among the regions and the task model for the determining of the optimal allocation of the budget funds on the expenditure side [19].

The result of the third stage of the concept is a number of optimization models that can be used to increase revenues to budgets of all levels, to reduce the tax burden, effective budget allocation and optimization of taxation.

**Conclusions.** The implementation of the proposed concept of the use of mathematical methods and models of making decisions on taxation in Ukraine makes it possible to provide favorable conditions for the development of entrepreneurial activity of economic entities. The positive changes in the conditions of entrepreneurship may provide a prompt improvement of the living standards for particular persons (entrepreneurs, employees, and their families) and the development of the Ukrainian population well-being on the whole. The obtained results will be useful for the government authorities during the development of tax policy that would, on the one hand, facilitate the increase of tax revenues of the state, and on the other, would not be a disabling burden for business entities and would not force them into a shadow economy.

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