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WAYS OF RADICAL CHANGE OF THE IMAGE OF TAX AND CUSTOMS OFFICERS

Anna Harutyunyan,
Lecturer of the Armenian State University of Economics, candidate of economics
Tigran Harutyunyan,
Economist, docent, Yerevan State University lecturer

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ABSTRACT

Tax and customs system is a multifunctional structure, therefore, in order to ensure unified application of the legislation, professional training of staff should be organized by means of guidelines, workshop discussions, qualification trainings and other instruments, which should be attended by the employees of territorial and regional tax and customs authorities. Along with implementation of legislative reforms and application of advanced technologies for increase of confidence in tax system and expansion of capabilities, the role of a professional tax officer is of high importance.

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Noticeable improvements have been made in tax system in recent years. Great work has been undertaken to improve the quality of service of taxpayers and to increase the services rendered. Significant achievements have been recorded especially with respect to introduction of modern high technologies in customs procedures, training of qualified staff, as well as improvement of the RA customs code and compliance with international standards. [7]

Human resources policy has its unique role in the development of tax sector, improvement of administrative instruments and increase of efficiency of the system. Along with implementation of legislative reforms and application of advanced technologies for increase of confidence in tax system and expansion of capabilities, the role of a professional tax officer is of high importance. In terms of efficiency of tax administration if the organizational structure is considered to be the skeleton of the system, human resources are the driving force of this skeleton. Therefore, development of knowledge of the officers is a top priority objective of tax and customs system, for the achievement of which human resources management policy and comprehensive strategy shall be established that will comprise the key component of the primary strategy of the tax authorities activities. Here the question arises as to whether tax authorities provide various ongoing training courses in line with international standards, instructional training materials, opportunities to exchange experience with foreign countries and whether the system has qualified lecturers with necessary experience, etc.

The radical change of the image of tax and customs officers is viewed from two aspects:

1. Development of professional skills and knowledge;
2. Maintenance of code of conduct.

The main form of development of professional knowledge is training. Training of staff it is not just a one-time training, but also a planned continuing professional training, through upgrading of knowledge

and awareness, development of skills, which is the main condition for achievement of the objectives set for tax officers. In many cases training courses in public sector are set by the budget and regulated by relevant laws (laws on internal audit, tax and customs services). Around the world, leading organizations of both public and private sectors make huge investments in professional development of their staff. Professional activities of tax and customs officers assume availability of knowledge and skills for a number of professions, including accounting, tax system, law and modern information technologies. [1]

Aiming to ensure the high efficiency of achievement of general objectives, in addition to knowledge, communication skills and ability to integrate into teamwork are required. Time challenges constantly change the objectives set for tax system, which in their turn change the requirements specified for professional skills of the officers, therefore, trainings should be of continuing nature. Human resources policy of tax and customs system is targeted at the following three areas: training of new professionals, continuing training of experienced officers and provision of opportunities for career growth. In order to improve the behavior of tax and customs officers training needs per sectors and positions should be thoroughly analyzed and long-term priorities should be set. Consequently, training of tax and customs should be organized both through educational institutions and professional training institutions operating adjunct to the state authorities, ensuring close relationship between the institutions generating supply and dictating demand. Considering the above the State Revenue Committee (SRC) of Armenia cooperates with higher educational institutions. For this purpose, master's educational program with specialization in tax and customs spheres is implemented in the State Economic University of Armenia.

Equal training opportunities, career growth in line with relevant knowledge and experience cause the officers to strive for deepening their knowledge and developing skills. Since Armenia is a member of several international associations and is a party to various agreements, tax and customs officers should complete appropriate trainings corresponding to international standards, receive sufficient information and technical support, training strategy should be developed for them and other mechanisms of professional development should be applied and they should have an opportunity to participate in international training programs. In international practice there exist various forms and methods of trainings, such as collective, group, individual, classroom and distance trainings, trainings by electronic media, by educational and didactic materials, online courses, etc. Each inexperienced employee with various professions (accounting, audit, tax system, law, information technologies) must overcome the barrier of integration into the team and teamwork, possession the required skills and gaining the experience, the duration and results of which are individual for each of them. The Internal Revenue Service of America, for effective integration of new employees, organizes induction training course at the workplace and includes in working teams both experienced and less experienced employees.

Tax and customs system is a multifunctional structure, therefore, in order to ensure unified application of the legislation, professional training of staff should be organized by means of guidelines, workshop discussions, qualification trainings and other instruments, which should be attended by the employees of territorial and regional tax and customs authorities. The organizational structure of tax and customs system has been established based on functional principle, however it comprises also subdivisions for types of taxes, and for proper performance of these functions responsible employees are required to possess relevant knowledge about the functions, appropriate skills and complete trainings. Training programs need to distinguished:

- based on functions, specialized and general topics;
- based on management level (managerial staff, lower and medium level managers).

Trainings on general topics should be mandatory for all tax and customs officers, and should include the categories listed below:

- economic;
- civil;
- legal;
- moral and psychological, code of conduct;
- social and political, etc. [1]

For example, the internal auditors are required to possess proficient knowledge on internal audit, legislation related to tax and public finance management and internal control system, to have qualification of internal auditor and to complete annual mandatory trainings on specialized and other general topics.

Individual training programs should be defined for each level of management, where clear emphasis should be made on management issues, particularly on setting, review and timely performance of the task, monitoring, accountability and development of the employees' knowledge. Training of managerial staff is also important due to the fact that managers establish necessary procedures for performance supervision, especially when it refers to their own staff. In addition to the responsibility for proper performance of activities and accountability at different levels, they are involved in the certification process, they assess the performance results of officers and determine the need for training courses and their directors. In general, along with specialized trainings the managerial staff should attend various training courses on development of leadership skills.

The main steps of efficient training are:

1. Assessment of training needs;
2. Preparation of training plan, programs;
3. Development and organization of training;
4. Assessment of training efficiency.

Training results include:

1. Development of knowledge of the officers;
2. Motivation of the officers;
3. Proper use of capabilities of the officers. [6, c 350]

System of regular training of tax officers has been introduced in tax system of Armenia. In the SRC tax and customs officers training function is performed by the educational center operating under subordination of the committee. The mission of the center is the training of tax and customs officers, taxpayers, development of professional knowledge and technical skills, cooperation with international bodies, preparation and provision of information and analytical materials.

Training courses organized for tax and customs officers in the center are of more specialized nature and cover the most important issues of tax and customs legislation, particularly, customs legislation and administration, introduction of external audit tools in customs audit, electronic management system, tax legislation, tax inspections and supervision. Topics of trainings are proposed by tax and customs services based on current requirements.

Trainings on various topics are set based on functions. These are:

1. Tax service

- training of the officers performing legal function;
- training of the officers performing taxpayers service function;
- training of the officers performing current supervision and inspections function;
- training of the officers performing operative investigation function.

2. Customs service

- training of the officers of collection coordination and accounting departments;
- training of the officers of customs tariffs and customs registration departments;
- training of the officers performing functions of pre-clearance control and fight against smuggling. [8]

Upon completion of trainings computer-based test shall be passed. The employees with positive results (80 points and higher) have an opportunity to pass paper-based certification.

For comprehensive solution of practical issues arising during implementation of tax system reforms and in order to have human resources who satisfy international standards, around 1000 tax and customs officers should be trained by annual working and educational plan. Aiming to raise awareness of taxpayers and to increase tax revenue training courses for taxpayers are also organized in the center. [8]

The rapid development of internet and web technologies enables a faster exchange of information, as well as cooperation and interaction among the users. In recent years, up-to-date becomes the distance learning via internet. In 2015, distance learning pilot system was introduced in the training center and educational processes are organized online, without taking off the employees from their work and workplace. Distance learning, being flexible, mass scale and effective, enables to organize workshops, discussions and trainings on challenging issues in short period of time.

In 2012-2013 around 8000 tax and customs officers were trained in the center and in 2016, 90 groups included 1974 participants.

Table 1. Information on training of employees of tax and customs authorities [3]

Indicators	2014	2015	2016
Tax authorities			
Number of tax officers	1913	1877	1674
Number of trained tax officers	1455	1539	1428
Number of certified officers	141	503	92
Number of officers who received grade or special degree	290	278	168
Number of recruitments conducted	4	5	1
Number of employees hired as a result of recruitment	80	166	25
Customs authorities			
Number of customs officers	791	814	739
Number of trained customs officers	550	583	544
Number of certified officers	12	-	-
Number of officers who received special degree	86	144	45
Number of recruitments conducted	5	1	1
Number of employees hired as a result of recruitment	18	1	64

In 2016, 85% of tax officers and 74% of customs officers were trained.

Staff training is also conducted in international training centers of international organizations, which contributes to modernization of tax and customs system.

In the system unified procedures are developed in the head office and afterwards are assigned to tax inspectorates. Therefore, for implementation of modern control mechanism over their performance and for ensuring unified business behavior, in addition to trainings, discussions on behavior, instruments and legislative changes are organized in the form of workshop discussions.

One of the pillars of the functional organizational structure of tax system is the staff performance assessment system, which should be based not only on the taxes collected, but also on the efficiency and other functional indicators, resulting in employees seeking to achieve higher results. Based on the performance assessment results needs for training and its directions are determined.

Trainings of tax and customs officers are regulated by relevant legislative acts, based on which training educational programs, certification performance and evaluation procedures are set.

The certification of tax officers is carried out once every 3 years. Those tax officers who get 80 or higher points based on total training results within the period following the previous certification and positive efficiency report are subject to paper-based certification. Paper-based certification is performed based on the efficiency report, by an interview. [4] The efficiency report is provided by the immediate supervisor, taking into account the efficiency of the employee's performance. Training of tax and customs officers represents additional professional training with duration of 80 academic hours (from 2016) organized by tax and customs authorities. After training participants' advancement assessment is performed by 100-point scale, as follows:

- score of 95 (inclusive) and higher is assessed as excellent advancement;
- score 90-95 is assessed as good advancement;
- score 80-90 is assessed as satisfactory advancement;
- score of lower than 80 is assessed as satisfactory advancement. [5]

Each year at least one-third of tax officers is subject to mandatory training, which is arranged for the improvement of specific requirements set for the rights and obligations specified by the job description for the given position of the service and for possession of professional knowledge and operational skills. The officers' training costs are covered by the funds of the service and the state budget. In addition to mandatory training prescribed by the law, the officers can attend various courses for personal development, which may or may not be aimed at improving the quality of performance of professional duties.

Along with the measures of the State Revenue Committee targeted at the effective staff management, the maintenance of code of conduct by the officers is also in focus. Rules that guide conduct of an officer of European tax system assume:

- professionalism;

- objectivity;
- honesty;
- integrity;
- fairness;
- independence, etc. [2]

According to European standards, tax authorities are obliged to ensure the above listed requirements of internal and external behavior of its employees. The SRC, wishing to ensure and develop communication and interaction skills of its staff resulting from professional behavior, has established a code of conduct for tax and customs officers, the maintenance of which is mandatory both on and off duty.

The code of conduct of tax and customs officers represents norms based on generally accepted principles of morality, which regulate behavior, conduct and relationship peculiarities of a tax officer in accordance with the tax and customs service procedures.

The code of conduct has been established for the purpose of guiding the behavior of tax officers.

Tax and customs officer is obliged to:

- demonstrate unconditional loyalty and commitment to his/her country and work;
- refrain from actions that may hinder the activities of the state body or undermine and discredit it;
- be guided by moral norms based on principles of humanity, fairness and honesty;
- respect human dignity;
- be impartial, objective, independent, discreet and lead by example;
- avoid undue emphasizing of his/her position;
- be balanced, disciplined and truthful;
- be polite with taxpayers, partners, subordinates and management;
- avoid any kind of protectionism, mediation, assistance as a result of which compliance with requirements of tax laws can be obstructed, to use only moral actions for achievement of goals during the service;
- not to fall into a position of dependence due to his/her behavior and be independent;
- maintain unconditionally the confidentiality of official information aiming to ensure the secure operation of customs service. [9,10]

The immediate supervisor of the tax officer, following the rules of professional conduct, undertakes measures to the extent possible to ensure observance of these rules by his/her subordinates. In case of their violations or improper maintenance, relevant penal measures will be applied. In 2015-2016 for inappropriate performance of duties and improper maintenance of code of conduct, tax and customs were subjected to disciplinary action.

Table 2. Number of officers subjected to disciplinary action of the SRC [3]

Indicators	2015	2016
Customs officers		
Warning	5	3
Strong warning	4	-
Tax officers		
Verbal warning	74	40
Written warning	49	17
Downgrading	1	-

Effective tax administration requires not only highly qualified, but also polite tax and customs officers, who will strictly maintain the rules of professional conduct and ensure proper compliance with moral and psychological norms during their service.

The above stated studies and researches allow drawing certain conclusions and providing recommendations as presented below:

1. Thus, the solution of issues faced by the economy attaches importance to radical change of the image of tax and customs officers and enhancement of professional qualification, which can be achieved through quality education and continuing professional development. Development of staff knowledge and analytical capabilities will bring new quality and approach in human resources policy and training processes of the SRC. Only high professional quality of staff can ensure a high level

customer service, which in its turn will serve as a precondition for improving tax culture in Armenia. Within the scope of tax and customs reforms human resources management strategy and policy are set, which will contribute to the achievement of goals of tax authorities and development of staff members through clearly designed trainings and professional development.

2. The main ways of radical change of the image of tax and customs officers are as follows:

2.1. Management of tax system personnel should include complex measures of staff recruitment, proper allocation, training and motivation, and should be also targeted at training of candidates pool, which should guarantee the availability of human resources for the system.

2.2. The key condition for ensuring high performance indicators and development of professional knowledge is the existence of incentives (motivation) system. Incentives system must be consistent with the achievement of the objectives of tax system. The right combination of payment and incentives systems will contribute to the social security of the officer, which will allow him/her to be independent when performing professional duties. Tax and customs officers comprising a part of the society, by their lifestyle and behavior help on formation of the opinion on the system.

2.3. Mandatory trainings prescribed by the law are financed by the state budget, therefore, the effective and purposeful management of public finance requires the training costs to be targeted by contributing to the increase of efficiency of tax administration. Consequently, two approaches for the assessment of training efficiency (cost-outcome) should be applied: efficiency analysis of the organization that conducts training and assessment of qualitative and quantitative changes in the performance of duties by the officers after training.

2.4. The key factor of efficiency of tax administration is the availability of professional, courteous and knowledgeable staff. For this purpose, tax and customs officers gain new qualitative skills through trainings (local and international) corresponding to international standards. To avoid wasted efforts and resources, the system should undertake measures for the reduction of staff outflow. Thus, figures presented in human resources management section of 2016 report of tax and customs system show that human resources outflow from the system is quite high, that is 203 employees, which is to some extent conditional upon optimization of the structure of tax inspectorates that implies reduction of number of tax inspectorates and establishment of service centers. Instead of hiring new employees for the system, it is reasonable to arrange rotation of the experienced staff through trainings.

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STATE AND PERSPECTIVE OF TRANSPORT GEORGIA

G. Tkeshelashvili, *Professor, Head of the Department of Management of Mechanical Engineering and Transport of Georgian Technical University*
G. Zangurashvili, *doctoral candidate of mechanical engineering and transport department of Georgian Technical University*

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ABSTRACT

Georgia belongs to an economically backward state. GDP per capita per capita is just a little over $ 4000, while the world average is more than $ 10000. It is natural that all possible resources for the economic development of the country should be utilized. One of the assemblies is transport due to the favorable geographical location of Georgia. Despite this, the contribution of the transport to the country's GDP is very low.
The dynamics of recent years decrease in volume of cargo transported to all types of transport, as well as circulating turnover. This can be solved by implementing macroeconomic events such as development of market infrastructure; Introduction of modern software packages; Perfection of taxation system in its direction and liberalization, improvement of credit and financial system; By establishing a flexible system of business regulation and dispute settlement.

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Introduction. Georgia's economic situation is actually improving, but it's still far from desirable. Suffice it to say that in terms of per capita with a volume of GDP, Georgia is several times behind not only the leading industrialized countries, but also the world average. According to the estimates of international financial organizations and the UN, this indicator looks as follows (see Table 1).

Naturally, because of such a lagging economic situation, it is imperative to achieve rapid economic development, to ensure approximately the rate that countries called "Tigers of Asia" had in 1990–2010, and in recent years have been Spain, Ireland and other similar countries. This can be achieved when modern technologies are used with these resources, such as natural, financial, geographic, and human resources. The use of computer technology occurs in all places and at all stages of production, beginning and understanding, and ending with the delivery and realization of products.

Separately, it is necessary to note the geopolitically accessible position, and below we will talk about using this advantage.

Georgia is small in terms of territories and sparsely populated in terms of population, but a short road passes through its territories connecting Europe and Asia, in accordance with which use has been happening since ancient times, from the period of elinic and Roman civilizations. And then, when Georgia was developed economically and politically in the middle ages. And then, when Georgia was part of the Russian Empire. Used now and after independence, but apparently not enough. As a result, the share of transport in Georgia's GDP is small and small against the background of the economy, when the environment of this economy can bring results especially if we take into account the status of a maritime country, the wealth of which many countries do not have.

Table 1. GDP in some states, $ thousand/person[1]

International Monetary Fund estimates		
1	Luxembourg	105803
2	Switzerland	80590
—	Macao	77451
3	Norway	74940
4	Ireland	70638
5	Spain	70332
6	Qatar	60804
7	USA	59501
8	Singapore	57713
9	Denmark	56444
10	Australia	55707
11	Sweden	53217
12	Nederland	48345
13	San-Marino	47405
-	Average	10038
110	Georgia	4098

World Bank estimates		
1	Luxembourg	104,103
2	Macao	80,893
3	Switzerland	80,190
4	Norway	75,505
5	Iceland	70,057
6	Ireland	69,331
7	Qatar	63,506
8	USA	59,532
9	Singapore	57,714
10	Domenic	56,308
11	Australia	53,800
12	Sweden	53,442
13	San-Marino	49,664
-	Average	10714
108	Georgia	4078

UN estimates		
1	Monaco	173 377
2	Lichtenstein	152 933
3	Luxembourg	113 373
4	Norway	103 586
5	Qatar	93 352
-	Macao	91 377
6	Switzerland	84 854
7	Australia	65 600
8	Sweden	60 566
9	Denmark	59 921
10	San-Marino	57 293
11	Singapore	54 649
12	USA	52 392
13	Canada	52 270
-	Average	10553
117	Georgia	3875

Main part. The dynamics of the transport sector in Georgia in recent years has been characterized by a downward trend. And there are many reasons for this. Of these, we see two directions: the management of insufficient organizational work to attract transit goods and the reduced demand for imported raw materials for the domestic economy, materials and complex products.

Dynamics of transport according to official statistics is visible in table 2 and 3.

Table 2. The transfer of goods in accordance with the modes of public transport, (thousand of tones)[2]

Years	Total	Including			
		Railway	Automotive	Marine	Airy
2011	48 926.8	20 123.4	28 794.1	8.1	1.2
2012	49 190. 8	20 076.0	29 110.8	3.6	0.4
2013	47 616.4	18 185.0	29 431.0	-	0.4
2014	46 445.1	16 673.3	29 754.7	-	17.1
2015	44 247.1	14 142.7	30 082.0	-	22.4
2016	42 318.9	11 881.7	30 412.9	-	24.3
2017	41 507.4	10 672.5	30 747.4	-	87.5

[1]List of countries by GDP (nominal) per capita. Website: https://en.wikipedia.org/wiki/List_of_countries_by_GDP_(nominal)_per_capita. Verified12.02.2019.
[2]National Statistics Office of Georgia. Statistical Year 2018. Tbilisi, 2018

Table 3. Exchange of public transport in accordance with the modes of transport, (million of tones – km)[1]

Years	Total	Including			
		Railway	Automotive	Marine	Airy
2011	6 690.0	6 054.8	628.4	5.3	1.5
2012	6 616.8	5 976.6	637.3	2.4	0.5
2013	6 172.4	5 525.9	646.1	-	0.4
2014	5 672.4	4 987.6	655.1	-	29.7
2015	4 966.9	4 261.3	664.3	-	41.3
2016	4 140.9	3423.1	673.6	-	44.2
2017	3 796.1	2 963.3	683.0	-	149.8

As can be seen from the above data, the transfer of goods from an average-use transport in total reduced from 2011 to 48,926.8 thousand tons to 41,507.4 tons by 2017. The indicator of commodity turnover looks more highly, where in the analogous period; the trade turnover went down from 6,690.0 million tons of km to 3,796.1 million tons of km, that is, twice.

The decrease was mainly caused by the deterioration of the railway transport indicator, where in 2011 20123.4 thousand tons of goods were transferred, and in 2017 only 10672, 5 thousand tons, that is, the volume of the transferred goods was half as much, and as for the turnover, about position.

Separately, it should be noted indicators of sea transport. Georgia is a rare country that has access to the sea, has two active ports of Batumi and Poti, the terminals of Kulevi and Supsa, but does not have a sea flow. Accordingly, the volume of the transferred goods by sea transport is statistically zero after 2012.

General indicators of seaports and terminals are as follows:

1. Port of Batumi - the number of transferred goods in 2015 is 5.7 million tons; the number of recycled containers in 2015 - 54,695 TEU (1 TEU - 20 feet - 6.1 meters); patency of the container terminal - 100,000 TEU per year; tourist terminal traffic is 180,000 per year; in February 2008, Kaztransoila's partner, Ltd Batumi Industrial Holding, bought a 100% stake in Batumi's fuel and terminal shares and the right to the exclusive management of the Batumi sea station for 49 years.

2. Port of Poti - in 2015 the amount of processed goods is 6.8 million tons; amount of recycled container in 2015 - 325.121 TEU; patency of the terminal terminal is 400,000 TEU per year. 51% of the port of Poti in 2008 and the right to manage the port for a period of 49 years was bought by the Arab company Rakia (RAK Investment Authority). Then the company bought the remaining share of the port and became the owner of a 100% stake in the company. In April 2011, Rakia sold 80% of the port of Poti to the Danish partner Ap Moller Maersk Group, Apm Terminals, and transferred from the port management.

3. Terminal Kulevi - in 2015, the number of processed goods is 2.5 million tons; terminal throughput per year is up to 10 million tons; In January 2007, Kulevi Fuel Terminal bought the Socar fuel company of the Azerbaijani state.

4. Terminal Supsa - the number of processed goods in 2015 - 4.2 million tons; annual throughput of 7 million tons; On April 17, 1999, in Supsa, the Supsa terminal was opened, the final fuel point of the Bako-Supsa terminal. The terminal includes 4 tanks, each with a volume of 40,000 tons of fuel.[2]

The depth of both ports operating in Georgia does not allow for the maintenance of ships. The maximum depth of the port of Batumi is 11.5 m, and Poti is only 12.5 м.[3] But the latter becomes sandy and needs permanent purification, which has not happened in the last few years, so the maximum depth of ships in the port of Poti does not exceed 8.4 m.

Naturally insufficient depth causes a specific complication, since the volume of sea transshipment and intensity are constantly evolving, as a result, it is possible to use high-speed ships, whose services cannot be provided by the operating port of Georgia.

The main competitors of the Georgian seaports are the ports of Novorossiysk of the Russian Federation and Tuapse and the Turkish Samsung. The capacity of the port of Novorossiysk, as a result, at the end of the implemented upgrades, up to 140 million tons a year and its almost 100% utilization

[1] ofვე

[2]Internet portal bpn. Georgian ports. site:https://www.bpn.ge/article/20177-sakartvelos-portebi/;

[3] okoladze T. The state of marine ports and development problems. Dissertation. The 2012. p. 38, 58;

is carried out. The maximum depth of 24.5 m, which makes it possible to take any ship.[1] The capacity of the port of Tuapse is relatively less and can process only 20 million tons of goods per year. As for the port of Samsung, its capacity as a result of reconstruction has increased to 40 million tons.[2]

The use of Georgia's sea potential is also possible through the construction of the deep port of Anakli, the implementation of which has already begun, but against the background of recent events, there are large confrontations. In order to improve the business environment, they took into account special discounts for the port of Anakliy, which increased its importance.[3]

Only pipelines are fully operating in the transshipment Georgia. The transit road that borders Georgia represents the most desirable route for delivering Caspian carbohydrates to international markets.

Transportation of fuel, fuel products and gas through pipelines is carried out through Georgia. Azerbaijan, as well as the whole Caspian region, which is rich in energy resources, is isolated from users of world markets and is motivated to choose independent export routes and go through other manufacturers' countries (respectively, competitors).

Georgia has an important transit potential for the fact that international wounds additionally received carbohydrate resources from the Caspi region and Azerbaijan.

Azerbaijan, Georgia and Turkey have established strategic cooperation for transit projects for the Caspian energy resources, in particular, Bako-Supsa (WREP), Bako-Tbilisi-Jeihani (BTC) and Bako-Tbilisi-Erzrum) in the form of pipelines.

Also through Georgia passes the so-called pipeline of the main gas of the Northeast, from where gas is delivered from Russia to Armenia.

As for road transport, the total transferred goods are quite high (30,747 million tons in 2017), but its absolute majority goes for domestic traffic, and in the defense goods, the share of auto transport to Georgia is rather insignificant. Therefore, the turnover indicator is rather low, only 683 million tons, which is 5 times less than the same indicator of the railway.

The reasons for the low transport sector in Georgia are as follows:

– Insufficient development and correctness of the road infrastructure;
– Low technical parameters of transport means and non-compliance with European standards
– High tariffs for the transport of goods;
– Cons of the business environment in transport, which do not stimulate the rapid development of the transport sector;
– The complexity of the use of modern-leading methods of management and logistic and more.

Conclusions. For the purpose of maximizing the transport and transit potential of Georgia, the macroeconomic environment is first of all necessary in the following groups:

– Market Infrastructure Development - Free market relations declared in Georgia but can not operate any commodity exchange, there are no labor exchanges, and the volume of shares quoted on the securities exchange is critically small;
– Tax system – it is in line with tax tariffs of Western European and EU Member States, but does not provide a differential approach except those territorial entities with a status of free economic zone. Our tax system does not involve differentiation of tax tariffs in the sectoral context, which negatively affects the development of sectors for which the country has favorable geographical and natural conditions;
– Failure of credit-finance system - In Georgia, high amounts of national currency lari rate fluctuation in relation to freely convertible currencies, there is a high interest rate on the bank loan and less reinforcing business development;
– Business lawful regulation and dispute settlement system - There is no single arbitration tribunal in the country and the dispute between the financial subjects will be discussed by the Citizens' Citizen's Collegium of Common Courts, where the cases are diligently delayed, and it lasts for several years.

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[2]Website: https://web.archive.org/web/20140328134911/http://www.tcdd.gov.tr/tcdding/samsun_ing.html; verified 20.02.2019.
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RESEARCH AFFECT ECOLOGICAL-ECONOMIC FACTORS ON LAND USE OF AVIATION TRANSPORT

[1]*Doctor of Economics, associate professor* ***Iryna Novakovskaya***
[2]***Liliia Skrypnyk***

[1]*Kiev, Ukraine, National Aviation University*
[1]*Head of the Department of Land Management and Cadastre*
[2]*Kiev, Ukraine, Institute of Agroecology and Natural Resources of NAAS*
[2]*Postgraduate student*

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ABSTRACT

The article has been considered the influence of ecological and economic factors on ecologically safe, rational, economically efficient landing of aviation transport. The analysis of the harmful influence of aviation transport on the adjacent land use, as well as vital activity and health of people in the area of maximum, critical activity of the industry has been carried out. The methods of environmental management of the airport activity have been presented in order to prevent the occurrence and reduction of pollution of the environment by applying the Ecological Management System - the system of ecological management. Possible algorithm of ecological-economic estimation of design decisions in the context of interconnected operation of infrastructure of airline, aerodrome territory and adjacent land uses has been suggested.

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Introduction. The analysis of the domestic development land use of aviation transport, as well as the research of foreign experience in this field, allowed to define the essence of the concept and to give a description of the term "ecologically safe land use of aviation transport". In our view, this concept should include a set of socio-economic, environmental and technical measures which are aimed at proper planning of airport infrastructure in coherence with adjacent territories, standardization of the level of pollutants, provision of the best possible internal and external ecological safety conditions for the community, integrity natural ecosystems and a high level of economic efficiency.

The ecological-economic system is an essential algorithm that should ensure the efficient land use of aviation transport and the industry as a whole. This system is considered as a holistic, which includes interconnected aircraft elements. However, despite this, the economic and environmental subsystems are characterized by various factors of influence.

The economic aspect of land use of aviation transport, which is part of the global ecological and economic system, is aimed at ensuring a high level of productivity of other industries and a powerful fixture for their growth. This activity improves the productivity of the global economy as a whole and includes the following factors:

• consolidation of tourism and trade ties;

• assistance to countries with a low socio-economic index (consolidation the position of the state in the world market, expanding access and strengthening the globalization of production);

• rapid development of the economic activity which the country specializes on;

• increasing the level of economic efficiency and decreased delivery times for goods of different industries and functional purposes;

• increasing of the investment flows;

• development of innovative technologies by promoting effective networking between companies located in different parts of the globe.

Despite all the advantages that are the key to the rapid development of land use of aviation, it is impossible not to take into account its negative, sometimes catastrophic, impact on the ecological integrity of natural ecosystems. Dangerous substances that enter to the environment as a result of aviation transport activities are determined by the following processes:

1. The process of combustion of fuel leads to the formation of new chemical elements;
2. The combination of unburnt residues substances and compounds of atmospheric air, which interact with each other after undergoing a certain heat treatment, turn into emissions of combustion products;
3. Fuel pairs during the land operations;
4. Wastewater discharges and emissions during land operations and near the fuel and lubricant warehouse;
5. Aviation noise which is the result from the process of raising the sound level occurs as an effect of the operation of the aircraft engine in conjunction with aerodynamic characteristics of the aircraft.

The consequences of the dangerous influence of the aviation industry on health, normal human life and the integrity of the environment are caused by:

- change of physical, chemical and biological characteristics of the ecosystem;
- the course`s violation of natural biological processes;
- the formation of microbiological cleavage resistant even more toxic compounds, which contain carcinogenic and mutagenic qualities;
- soil contamination, its long-term adverse effects on animals, which is causing elimination in the intensive pollution zone.

Rational, ecologically safe, economically efficient land use of aviation transport is impossible without an integrated study of the peculiarities of the use and protection of this subcategory of land. Implementation of the ecological and economic assessment of restrictions on land use of aviation transport has become one of the priority tasks that will strengthen the international economic relations and expansion of airspace within the framework of development of cooperation with the EU. The problems of research analysis of the creation a unified general approach to the decision of the development issue of aviation land tenure have been fulfilled.

It is extremely essential to have a regulatory framework that would be adapted to EU rules and regulations in the field of aviation land use. Modern national legislation contains conflict rules, which is expressed even in the use of different terms to describe the same object - the land of aviation transport.

Research results. The development of the aviation industry is an integral part of the modern economic system, not only of the national level but also of the world scale. This is explained by the fact that today, in the context of the progressive international division of labor and the strengthening of economic and cultural ties, the indicated development for the national and world economy is becoming more and more significant.

The political forces of Ukraine, which is a member of the ICAO Council, are focusing their efforts in the aviation industry on the development of the airport network and strengthening the existing logistics and resource potential for the next 10 years by achieving a high level of passenger flow, which is a key indicator in achieving economic the effect in the field of aviation activities.

Ukraine's aviation transport strategy for the period up to 2030 reflects the basic theoretical and methodological principles of practical implementation and is based on the need for land-resource potential as a spatial basis for development. The main measures of the strategy are [8]:

1) state regulation of the legal regime for the use of aviation transport land, namely protection against changes in the purposeful use of land plots or illegal land development around the airports necessary for the development of airport infrastructure for the period of 20-30 years;

2) effective control over compliance with restrictions on high-rise buildings within a radius of 50 km around airports;

3) ensuring the growing tourist and business potential of the capital of Ukraine, through the development of the international airport "Kyiv" (Zhulyany) (lengthening and strengthening of the runway for the reception without restrictions of aircraft and 321/in 737-900), As a point-to-point

airport, or through the design and construction of a new modern international airport in the Kiev region, and the development of access roads and high-quality ground communication with the airport by various types of public transport;

4) conducting an inventory of airports (airfields), as well as inventory of airfields in Ukraine for the purpose of conservation and use for low-cost transportation and/or general aviation;

5) travel to the country to ensure integrated construction prior to the reconstruction of the airport in order to ensure its need for abandoned vehicles access to vehicles and the population, points, in particular the development of modern transit infrastructure at Boryspil International Airport by reducing the share of net profit (income), which are expelled to the State budget;

6) the development and adoption of a package of airport laws as a matter of priority, similar to the EU, which should solve the critical aspects that hinder the development of airports in Ukraine and the entire aviation market.

For 2006-2017 years the market of aviation passenger transportations in Ukraine developed rather dynamically. In the last 11 years the volume of passenger transportations by Ukrainian airlines has grown almost in 6 times. Such indicators are the result of expansion of the route network and increase of the intensity of flights on the fixed directions simultaneously with renewal of the fleet of air strips. Also, significant passenger traffic has helped to increase safety measures and improve the quality of service.

According to predicted estimations of experts by 2030 the number of passengers of Boryspil International Airport will increase from 11 mln. Up to 30 million, 10 million of which-transfer (fig. 1). In turn, the total passenger traffic of all airports in Ukraine will reach the size-at least 42 million passengers. Some experts believe that in the next 10 years the number of passenger traffic of the central airport of Ukraine from 11 million will grow to 50 million passengers per year.

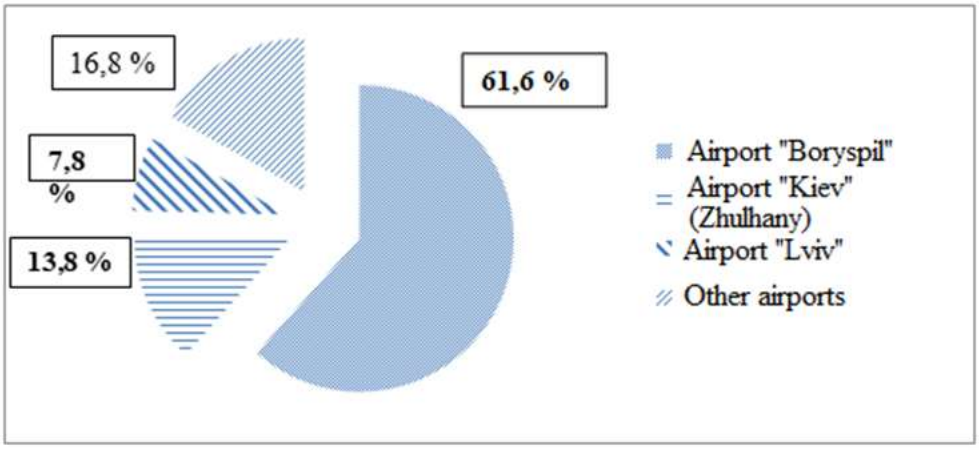

Fig. 1 percent of the level of passenger traffic on the network of airports in Ukraine by 2018 [8]

If we consider the level of passenger traffic as a percentage of specific airports, then 61.6% of the international Airport "Borispol", 13.8%-International Airport "Kiev" (zhulyany), 7.8%-International Airport "Lviv" named after Daniel Galitsky, and 16.8%-other airports. That is, from the whole network of airports in Ukraine, only 3 have the number of passenger traffic more than a million, MA "Borispol"-more than 10 million.

How can the forecasted level of passenger traffic in Ukraine increase up to 2030? The developers of the strategy are preparing for the signing of the Agreement on Common Aviation Space (SAP) with the European Union (EU), what they think will be the first step to increase the volume of passenger traffic in the airports of Ukraine. In general, the increase in passenger traffic is due to the following factors [3]:

- State of the economy;
- Level of social sphere of the country;
- Improvement, development of the network of airports, infrastructure and organization of adjacent land use;
- Internal and external tourism
- Entrepreneurial, commercial activity.

Despite the introduction and gradual implementation of the strategy, a serious problem remains, the environmental situation within the individual airports, as well as on adjacent land use and

the ecosystem as a whole. Such conditions cause an extremely negative effect on human health and the integrity of the natural environment in the activity area of the branch.

Official statistics of British experts report that the aviation industry is causing emissions of harmful substances into the environment not only during passenger and freight transport, but also in various activities which are related to airport service in general.

Penetration of harmful substances into the soil, as a result of land operations (spills, waste water), leads to an active change in the chemical warehouse and soil structure. It is impossible not to notice that in the first place such influence affects the Humus horizon. That is, when the amount of hydrocarbons in it sharply deteriorate soil quality as a nutrient substrate for plants. Also soil contamination by hydrocarbons of oil and petroleum products leads to a sharp disturbance of soil microbiocenosis and is caused a long-term negative impact on animals, by elimination in the intensive zone of contamination. Sometimes aviation activity causes pollution of water bodies, large-scale forest fires.

If the impact of aviation noise on the health and condition of the population living in adjacent areas is considered, this factor will refer to the active processes of. At the moment, experts and researchers in the field of health regulation have found that the traumatic impact of aviation noise is stronger than other components of the negative factor.

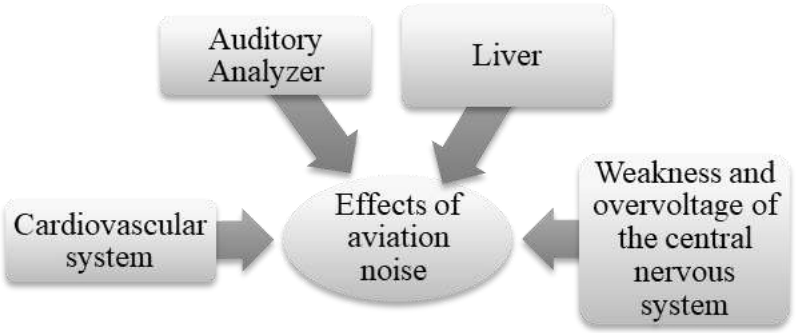

Fig. 2 Differentiation of systems of the human organism which the aviation noise most influences on [9]

The world study practice of the influence of aviation noise, allocates a scale with a risk factor influence 1.00 to 1.30, which corresponds to a certain level of noise in the Dba, where there is a danger to the emergence of specific types of diseases (Fig. 3).

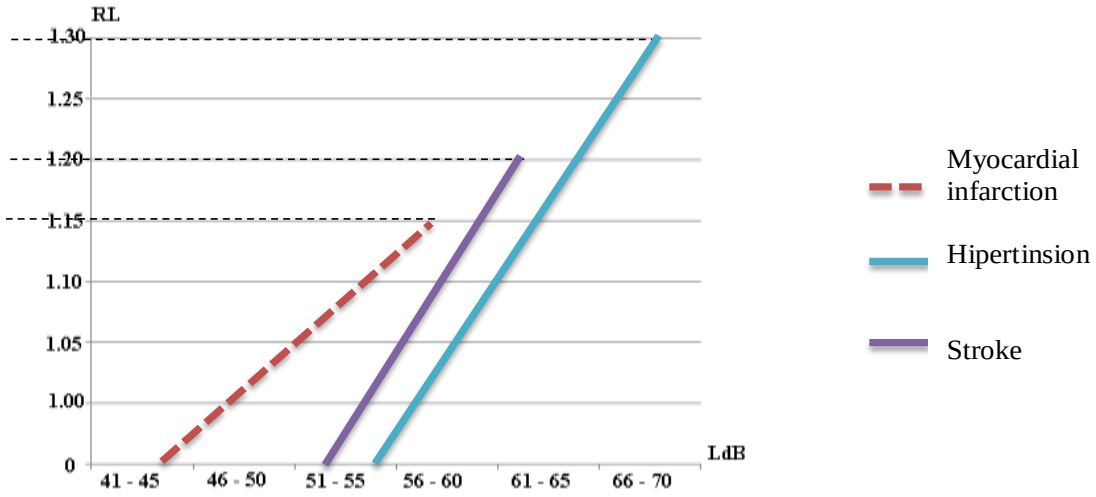

Fig. 3 Risk factors scale of occurrence of different diseases in the rookery from the level of aviation noise

*Formed by the author according to the report The Environment Aviation Federation, January 2016 «Aircraft noise and public health»

Emissions in the process of combustion of fuels and any other sources that lead to the release of hazardous chemicals into the atmosphere, the environment is another important aspect of the impact on the health of the population.

Residents of the airports adjacent to the airport are increasingly becoming victims of respiratory diseases or the appearance of malignant neoplasms.

For an example, consider the level of morbidity of the population of Svyatoshinsky district, Kyiv, which is in its location, is located at a short distance from the International airport "Kyiv" (Zhulyany), with a population of 319,000 people. At the same time, some residential buildings are from the airport, at a distance of 5 km, while the International requirements and the legislation of Ukraine regulate the radius of the aerodrome area in the size of 15 km.

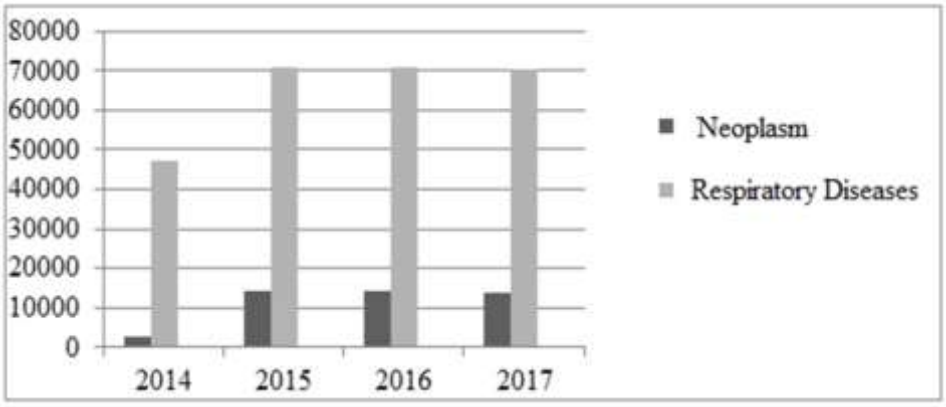

Fig. 4 The level of morbidity of the population of the Svyatoshinsky district of Kyiv, which is located within a radius of 5 km to the AI "Kyiv" (Zhulyany) in the period from 2014-2017

*Formulated by the author according to the statistical data of the Department of Health of Ukraine [9]

Indicators of the morbidity rate of the Svyatoshinsky district population, which is located within a radius of 5 km to the AI "Kyiv" (Zhulyany) in the period from 2014-2017, have been calculated in accordance with the general indicators, which are determined by regions for every 10 thousand people (Figure 4). When the dynamics of fluctuations in the level of morbidity of the population has been determed, it was mandatory to take into account the fact that 60% complaints about the state of health have been associated with large-scale emissions of harmful chemical compounds into the atmosphere. As we see, the figures for 2014 differ significantly from the indicators in 2015, 2016, 2017, almost 2 times. That is, in 2015 there was a peak of the caused diseases, and already in 2016, 2017 the indicators have showed a decline, but not at all significant, comparing with the jump in the period from 2014 to 2015.

That is, one of the basic directions of the development network of Ukrainian airports is the effective use of methods for preventing and reducing emissions of hazardous pollutants.

The Ecological Management System (Ecological Management System – EMS) is considered to be the best way to manage the environment at all levels of corporate operations and decision making. Eco-efficient EMS work at airports, according to ICAO's researchers, can seriously help in monitoring and managing environmental issues.

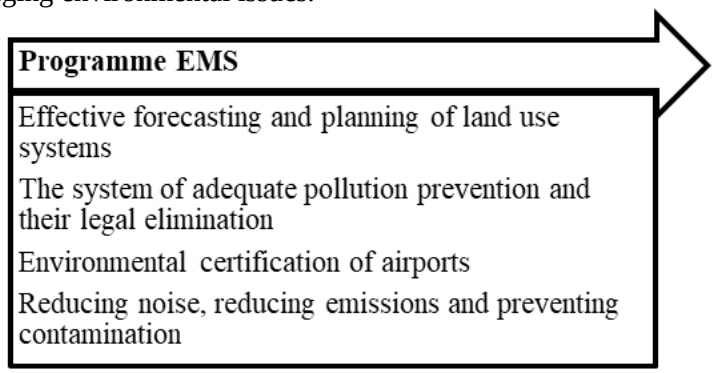

Fig. 5 Planning stages and practical application of the EMS system at airports

Specialists of the aviation organisation can significantly reduce the impact on the environment, in particular, the resource and land potential of the territory, if their activities will be aimed at the introduction and functioning of the environmental management system - EMS and forecasting, planning the land use process.

An example of world experience in making effective environmental environmental decisions inside and outside the airport is the creation of the "green zones". This concept includes:

- production, operation of technologies and equipment for control and emissions reduction of harmful substances and greenhouse gases;
- preservation and replenishment of greenery on the territory of the airport and beyond;
- monitoring and forecasting of climate change;
- introduction of technological processes for energy and resource conservation and renewable energy [10].

The concept of "green zones" is widely used in the United States and European countries. They have developed a number of long-term programs and initiatives, according to which, by 2025, it is planned to develop new-generation planes with radically new technical and operational characteristics in accordance with the rules and requirements for the functioning of these zones.

The use of "green zones" for Ukrainian aviation organization is a necessary innovative solution for the conservation, protection of natural resources and the reduction of the negative impact on the ecosystem's integrity. An important tool for ensuring the functioning of these zones is the formation of an effective system of environmental management, the introduction and harmonization of environmental policy, taking into account the specific conditions of operation.

In recent years, the concept of "the problem of compatibility of airport infrastructure and land use in surrounding areas" is often used. Consideration of this issue is extremely essential and the concept of land-use planning is a consequence of the study of the environmental interconnection between airports and populated areas that are nearby.

Land-use features in areas around airports may be the reason for the establishment of restrictions on aircraft flights, and also affect the level of safety of flights. That is why, before planning and designing the airport, it is necessary to take appropriate measures to prevent the incompatible use of land plots.:

1) Ensuring mandatory certification of aviation objects for compliance with regulatory requirements.
2) Scientific substantiation of planning and forecasting of land use, taking into account the physical and geographical conditions of a particular region.
3) Conducting an assessment of the risks of birds collision with aircraft and the entry of wild animals into the aerodrome territory.
4) Compliance with and improvement of the planning concept of joint land use of the airport with the infrastructure, vegetation and land use of the adjacent territories to the airport.
5) Compliance with the rules for reducing the number of birds and wildlife around the airport.

Principles of environmental and economic assessment of design solutions in the context interconnected operation of the aeroport infrastructure at the aerodrome territory and adjacent land uses:

1. Ecological-economic effect as a result of interconnected functioning of the airport

infrastructure and land use in the aerodrome territory. The high level of economic incentives for land use in the aerodrome territory is the direction of the investment flows into the development of transport infrastructure around the airport, which will serve as the main intersections of the airport's flights. Such a balanced use of land will reduce fare, access and waiting time.

Net present value (NPV) of investment in transport infrastructure could be expressed as a formula [2]:

$$NPV = -I + \sum_{t=1}^{T} (\Delta CS_t + \Delta PS_t)(1+i)^{-t} \quad (1)$$

where, I – investment funds;

T – period of the life cycle of the project;

ΔCSt – change in consumer surplus in year t;

ΔPSt – Change in producer surplus in year t;

i – the discount rate.

2. Using of the Landside project main provisions for the providing balanced indicators of environmental and economic assessment of land use restrictions in the aerodrome territory

Another essential condition for ensuring the ecological and economic assessment of rational land use in the aerodrome territory is the launch of the Landside project.

The Landside project is an universally accepted global method for cost-effective planning of airport infrastructure and environmental safety.

The project assesses the strategic, functional, operational, commercial, and environmental-economic aspects for the sustainable development of the airport and land-use objects outside its borders, in particular the restrictions - in the aerodrome territories.

3. Ecological and economic principles for assessing land use restrictions infrastructure of the airport (at the aerodrome territory)

In accordance with the provisions of the regulatory acts in the field of aviation, the airport operator is responsible for the state of the aerodrome territory and the conduct of any production, economic activities, as well as the activities of entities. That is why it is necessary to clearly define how the airport's activity will affect the ecological and economic condition of the aerodrome territory.

The non-economic aspects of land use in the aerodrome territory are considered due to changes in the cost of communications near the airport solely due to its direct impact on the environment within a radius of 15-50 km. In the case of aviation noise, this aspect could be expressed as a formula [2]:

$$DEC_{LU} = D_p * V_p * r_{lvp} * \Delta F_n \quad (2)$$

where, D_p – density of properties within aerodrome territory which is affected by aviation noise over a certain period of time (unit of real estate / km2),

V_p – the cost of a unit of real estate that is exposed to airborne noise over a certain period of time (€ / unit of real estate);

r_{lvp} – the rate at which a unit of property loses its worth in connection with the increased impact of aviation noise over a certain period of time (% / 1 dB / year);

ΔF_n – the limiting level of increase in aviation noise due to an increase in the number of air traffic over a certain period of time (dB / year).

4. Ecological and economic principles of land use management in the aerodrome territory in the event of environmental and economic losses.

Environmental damage is a change in the quality state of the environment due to an increase in the maximum permissible level of hazardous, harmful substances.

This indicator is evaluated using the following values:

- additional costs of the airport operator and land users
- condition of the aerodrome territory due to changes in the environment;
- costs of returning the environment to the previous state;
- additional costs of the airport operator and land users
- the state of the aerodrome territory in the future due to the use of a part of scarce natural resources.

An effective ecological and economic precautionary mechanism in the case of land use restrictions in the territory arround the airport may be the pollution charge for the environment, which will be carried out by the airport operator. These funds will be used for the introduction of special measures for reducing or eliminating environmental and economic losses.

The number and level of payments may be determined on the basis of the maximum allowable emissions and discharges of each ingredient (t / year), which are set for the airport. The principles and amount of waste disposal in the environment are determined by the enterprises as the physical volume of waste depending on the class of toxicity.

Conclusions. Environmental and economic assessment should be carried out in relation to future projects, in order to reduce the risks of environmental instability of the territory and negative economic consequences that result in low efficiency in relation to the predictible results and indicators due to the activity of the relevant sphere.

The process of environmental and economic assessment of aviation land should be considered in the context of the interconnected functioning of the infrastructure of the airport and its adjoining territories. As experience of experts and specialists of international level shows, in this case, the assessment of the project decisions that relate the problem of environmentally sound land use and the needs of effective territorial development of the objects of the aviation industry will be conducted.

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EVALUATION OF EFFICIENCY IN THE BANKING SYSTEM IN REPUBLIC OF MOLDOVA

PhD in Economics, Assistant Professor ***Lopotenco Viorica***

Republic of Moldova, Chișinău, Academy of Economic Studies of Moldova

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ABSTRACT

The main objective of this study is to evaluate and analyze the efficiency of the banking system of the Republic of Moldova. To this end, efficiency is determined by the econometric approach, which is calculated by the ratio between outputs and inputs and can be described as the distance between inputs and outputs. For this purpose, the input-oriented CRS efficiency analysis was chosen, as well as the slack analysis of performance in DEAFrontier Software. The intermediation approach has been used in the banks' efficiency assessment. This approach regards the bank as an intermediary of financial services and assumes that banks collect funds for deposits with labor and capital and convert them into loans and other assets.
The conclusions of this study consist in the fact that through realized analysis the evolution of the efficiency of the Moldovan banking system over the last years, as well as the banks with problems in this chapter, has been highlighted.

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Introduction. The efficiency of the financial system can have an essential influence on the economic performance of a country. Thus, Amable and Chatelain [1] believe that the efficiency of the financial system can influence the growth of the population's economies, which can contribute to investment development. In general, the financial sector offers a better allocation of resources. However, the efficiency of the financial system is a complex economic concept, and its assessment can be extremely challenging - both quantitatively and qualitatively.

Under current conditions, the Moldovan banking sector, which accounts for 88% of the total financial system, can considerably increase gross domestic product volume, capitalize on new levels and reveal its potential for innovation. This requires qualitative mechanisms to assess the efficiency of the banking system, which in turn contributes to adapting participants to current risks and dynamic changes in the macroeconomic environment. The evaluation of the efficiency, as well as the possibilities for its growth through the analysis of the determinants, will determine the competitiveness of the Moldovan banking sector in the future.

The article is structured as follows. In the second section, there is a review of the literature on methods for assessing the efficiency of the banking system. The third section of the document is devoted to describing the empirical methodology of the research. The data and the results of the application of the methodology and their implications are analyzed in the fourth section. Finally, the conclusions are presented in Section Five.

Purpose of the study: The primary purpose of this study is empirical research on the efficiency of the banking sector in the Republic of Moldova. In the evaluation, is determined the efficiency of all banks in the Republic of Moldova and the efficiency of the banking system as a whole.

Literature review. In 1957, British economist M. Farrell published the article "Measurement of Production Efficiency," where he introduced the concept of "operational efficiency." Farrell has

divided operational efficiency into two components: (1) technical or production efficiency; (2) allocation efficiency (distribution efficiency). [2] The first component describes how to maximize production with given resources. The second reduced to the minimal use of a combination of resources at a certain level of production.

According to this concept, the "efficiency index" of the banking system can be determined by measuring the point distance, describing the bank's operational process, from a specific efficiency boundary. Commercial banks, which correspond to this border, are fully capable, and as the distance from an inevitable efficiency border increases, the bank's inefficiency also increases. At the same time, the specified index may have values ranging from 0 to 1 (for example, a commercial bank with an index of 0.88 will be more effective than one with an index of 0.78). The inefficiency index is the difference between 100% and the actual efficiency index, expressed as a percentage.

The econometric approach is based on the notion of efficiency border. The efficiency of a bank or the banking sector is calculated based on the proximity of the values of the indicators of a particular bank or the entire sector (e.g., costs, the volume of services provided, etc.) at the potential or actual efficiency boundary. The efficiency boundary, in turn, is calculated based on the production function. Within the econometric approach, parametric and non-parametric methods develop in parallel, each with both advantages and disadvantages. Researchers do not give a definitive preference for any of them, because both techniques have advantages and disadvantages, and the choice of a method of assessing the appropriate bank efficiency is quite controversial. Besides, some researchers, for example, Huang and Wang, consider that choosing one of the methods may influence the conclusion on the efficiency and the implications of the policies derived from the analysis. [3] Contrary to this view, Toma et al. [4] believe that the two efficiency evaluation approaches (parametric and non-parametric methods) yield very correlated results in most cases.

Methodology and data. Assessing the efficiency of the banking system is a rather complicated analytical problem which requires solving some fundamental methodological tasks, in particular, because there are no generally accepted concepts on such notions as efficiency, the economic effect of the banking system or unified methodologies regards the indicators of the effectiveness assessment.

Our research is based on Farrell's (1957) study, which suggested that a company's efficiency consists of two components: technical efficiency and allocation efficiency. Technical efficiency reflects a company's ability to achieve maximum output from a set of inputs. On the other hand, allocation efficiency reflects the ability of a firm to use inputs in optimal proportions, given the prices and production technology. These two types of efficiency are then combined into a global economic efficiency that can be viewed from the perspective of input or output models. Then we can talk about overall cost efficiency (input perspective) or overall revenue efficiency (outlook perspective).

For the study was used data on the Moldovan banking sector, sources from the official website of the NBM, namely: Information on financial and economic activities of banks; Balance sheet of licensed banks; Profit or loss account.

The methodological procedure is based on several specific points or hypotheses underpinning and forms the research lines of the non-parametric DEA method. DEA is based on the explicit assumption of a production boundary that delimits the set of disposable inputs and results that can be obtained. The task of optimizing a selected DEA model is to construct a production frontier in a non-parametric manner and appropriately measure the distance between individual production units at the production frontier and capture it in the form of a score (used in assess the relative efficiency of a given production unit and compare it). However, it often happens that the production frontier will change over time (even this change is necessary for the theory of economic growth to be valid and owned). Although this is true, in specific consecutive periods, the production frontier due to the inertia of the economic environment can remain invariant in terms of a change in time.

If we rely on microeconomic theory, banks can be considered as firms with multiple inputs and outputs variables (fig.1).

In the analysis of banking efficiency, several approaches have been developed and used intensively: the production approach, the intermediation approach, the so-called modern approach [5]. Some sources also show the operating approach.

Fig. 1. „Input" and „Output" in banking

The distinctive features of these approaches are presented in the table below:

Table 1. The distinctive features of banking efficiency approaches

	Intermediation approach	**Production approach**	**Operating approach**	**Modern approach**
Interpretation for the bank	a production unit acting as a financial intermediary	manufacturer of deposits (liabilities), loans (assets) and other services focused on minimizing cost of operations	a production unit that tends to maximize profits	a banking entity, in which the production model endogenizes the risk managers' choice over anticipated returns
Dominant perspective	macroeconomic outlook	microeconomic outlook	microeconomic outlook	microeconomic outlook
Main tasks	regulatory	customers	shareholders	managers

Each of these approaches can only be seen as a separate part of the entire banking activity. As far as the banking condition of the Republic of Moldova for macroeconomic stability promoted by the regulatory bodies, but also from the objectives proposed in the present study, it would be reasonable to apply the intermediation approach. The variables used in the model are described in the table below.

Table 2. Description the variables included in the model

Variables	**Description**
Inputs	
x_1 : Total depozit	Total deposits attracted by the banking institution
x_2 : Number of employees	Number of employees of the bank
x_3 : Fixed assets	Total fixed Assets
Outputs	
y_1 : Total loans	Total loans granted
y_2 : Other earning assets	Other earning assets that refer to non-loans activities

Next, we will try to evaluate the efficiency of the Moldovan banks for the period 2013-2018, based on the variables presented above, which were compiled from the database of the National Bank of Moldova. In order to assess the efficiency of banks has been used as mentioned above the intermediation approach proposed by Sealey and Lindley. [6] This approach regards the bank as an intermediary of financial services and assumes that banks are collecting deposit funds with the help of labor and capital and transforms them into loans and other assets. For each bank in the Moldovan banking system, it was necessary to select inputs, outputs, input prices, and production prices.

Empirical analysis and results. The primary purpose of this study is the empirical research on the efficiency of the banking sector in the Republic of Moldova. In the evaluation, the efficiency of all banks in the Republic of Moldova, as well as the efficiency of the banking system as a whole, was determined using the DEA assessment method - a non-parametric way of constructing the production frontier, which adequately measures the distance between individual units (DMU) at the production frontier and its reflection in the form of a score (used to assess the relative efficiency of a given production unit and benchmarking). DMUs on the frontier are described as having the best performances in the reference group, and the farthest ones are the least efficient.

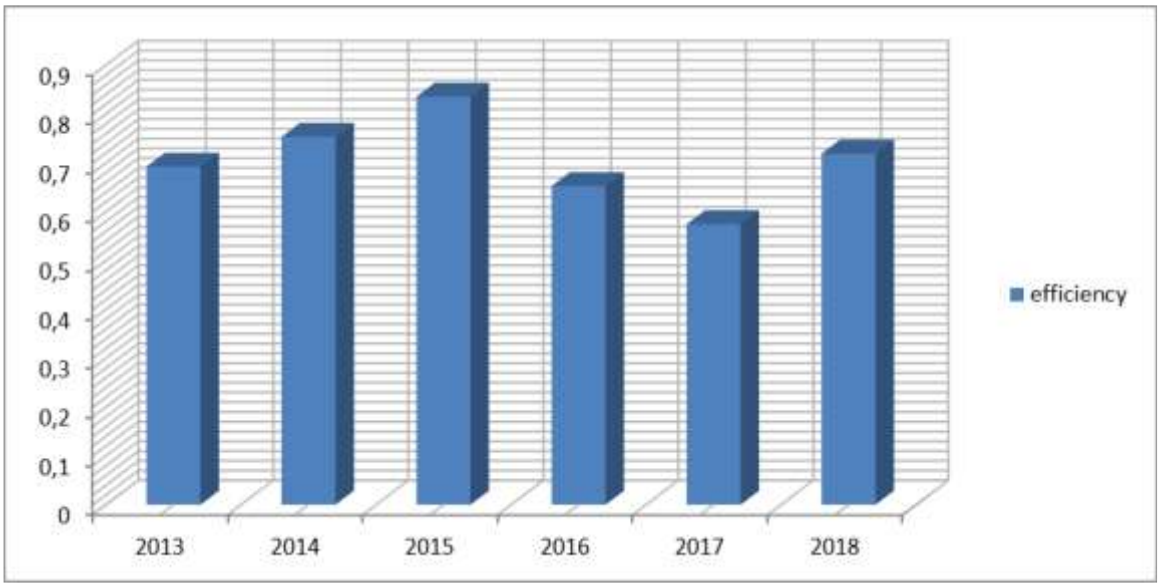

Fig. 2. Input-Oriented Banking Efficiency Evolution in the Republic of Moldova in 2013-2018

The analysis of the efficiency of the banking system in the Republic of Moldova through CRS, Input-Oriented (CRS Efficiency) shows a trend of a gradual increase in efficiency during the period 2013-2015 and a decrease in efficiency between 2015 and 2017. In 2018 there is an increase in the efficiency of the Moldovan banking system (fig.2). At the same time, it can be seen from the efficiency analysis that this is higher for small banks than for large banks (table 3).

Table 3. Input-Oriented Banking Efficiency in the Republic of Moldova, 2018

Input-Oriented							
		CRS	Optimal Multipliers				
DMU No.	DMU Name	Efficiency					
1	Total banking system	0.71881	0.00001	0.00002	0.00012	0.00001	0.00000
2	BC „MOLDOVA - AGROINDBANK" S.A.	0.94588	0.00005	0.00006	0.00041	0.00004	0.00000
3	B.C. „COMERTBANK" S.A.	1.00000	0.00076	0.00167	0.00000	0.00000	0.00223
4	BC „EuroCreditBank" S.A.	1.00000	0.00139	0.00000	0.00743	0.00106	0.00037
5	B.C. „ENERGBANK" S.A.	0.86475	0.00051	0.00000	0.00298	0.00032	0.00034
6	B.C. „EXIMBANK" S.A.	1.00000	0.00027	0.00074	0.00082	0.00000	0.00080
7	„FinComBank" S.A.	1.00000	0.00043	0.00000	0.00252	0.00027	0.00029
8	BC „MOBIASBANCA - Groupe Societe Generale" S.A.	0.68348	0.00011	0.00013	0.00092	0.00010	0.00000
9	BC „Moldindconbank" S.A.	0.58784	0.00008	0.00000	0.00044	0.00005	0.00005
10	B.C. „ProCredit Bank" S.A.	1.00000	0.00052	0.00000	0.00000	0.00011	0.00098
11	BCR Chisinau S.A.	0.86456	0.00072	0.00195	0.00216	0.00000	0.00211
12	B.C. „VICTORIABANK" S.A.	0.62283	0.00007	0.00018	0.00020	0.00000	0.00020

Also important information can be obtained by applying DEA Frontier Software and namely is the possibility to build the reference set for each inefficient unit.

In our case, the reference set is wholly composed of DMUs operating near the inefficient unit. An interpretation of the benchmark set is that, if efficiency is to be improved, opportunities for improvement should be sought for the relevant banking institutions in the benchmark system. Lambda values are a measure of the relative importance of the other DMUs, which includes the reference set of a particular DMU. More specifically, lambda is a vector that describes the effective DMU percentages used for DMU to achieve a maximum efficiency score. Each inefficient unit could theoretically be moved to the efficient frontier and thus obtain an efficiency score equal to one, assuming that the underlying system can be restructured to improve the results. For each inefficient unit, a projection of the difference for each output can be obtained.

The input-oriented CRS efficiency analysis was performed, as well as the slack analysis of performance in DEAFrontier Software. The so-called slacks do not appear for efficient banks. They can only be seen at inefficient DMUs. However, slacks are only remaining portions of inefficiency; after the proportional input reduction or output increase, if the DMU cannot reach the efficiency limit (the target is efficiency), slacks are required to push the DMU to the limit (target).

Table 4. Slacks report in the Moldovan Banking System 2018

CRS Results		*Input Slacks*		Output Slacks			*Sum of*		Optimal Lambdas
DMU No.	DMU Name						*lambdas*	*RTS*	with Benchmarks
1	Total banking system	0.00000	1998.48621	0.00000	19697.50544	11494.23436	29.54593	Decreasing	7.373
2	BC „MOLDOVA - AGROINDBANK" S.A.	0.00000	136.21282	0.00000	1061.02495	4442.26234	7.99474	Decreasing	3.715
3	B.C. „COMERTBANK" S.A.	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	Constant	1.000
4	BC „EuroCreditBank" S.A.	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	Constant	1.000
5	B.C. „ENERGBANK" S.A.	0.00000	373.59211	0.00000	168.33057	240.62157	0.77580	Increasing	0.518
6	B.C. „EXIMBANK" S.A.	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	Constant	1.000
7	„FinComBank" S.A.	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	Constant	1.000
8	BC „MOBIASBANCA - Groupe Societe Generale" S.A.	0.00000	266.43944	0.00000	2896.56929	2218.82240	4.12129	Decreasing	0.339
9	BC „Moldindconbank" S.A.	0.00000	334.07558	0.00000	6363.81803	2245.96723	6.55978	Decreasing	0.459
10	B.C. „ProCredit Bank" S.A.	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	Constant	1.000
11	BCR Chisinau S.A.	0.00000	25.16558	0.00000	317.47757	41.02761	0.53619	Increasing	0.050
12	B.C. „VICTORIABANK" S.A.	0.00000	205.37680	0.00000	9226.04146	1717.31886	5.95338	Decreasing	0.236

The slack analysis is quite useful for analyzing efficiency, especially when the benchmark set for each inefficient bank is built. This set can be seen on the right side of the tables, where the slack analysis is performed.

As a conclusion we can see that using a non-parametric DEA approach in assessing the efficiency of the banking system in the Republic of Moldova, the results show relatively low levels of efficiency, with averages between 65-85% recorded in different years of the analyzed period. Overall, the tests performed to demonstrate the existence of inefficient banks' techniques in the Republic of Moldova, which implies an average loss of resources (inputs) from the current level, generating the same level of outputs. It has also been demonstrated that the primary source of slacks in most Moldovan banks is technical and operational inefficiency and less than allocation.

From the above, we can see that the banking system can perform different financial intermediation, banking services provision and profit making. In recognition of this diversity, the application of non-parametric methods to the assessment of bank efficiency can clarify this issue and provide methodological notes to financial market regulators, commercial banks and shareholders, who are useful in measuring the technical efficiency of banking companies.

Conclusions. The banking system is an open system, and it is inextricably interconnected in the general economic system of the Republic of Moldova. In this respect, the most important problem to improve the institutional structure of the Moldovan banking system is that any of the best measures taken to improve it may be ineffective if they are not accompanied by the appropriate continuous improvement of the external environment Under the current conditions, the banking sector is able to considerably increase the volume of gross domestic product, capitalize on new levels and disclose its potential for innovation. This requires qualitative mechanisms to assess the efficiency of the banking system, which in turn contributes to adapting participants to current risks and dynamic changes in the macroeconomic environment. The evaluation of the efficiency, as well as the possibilities for its growth, will determine the competitiveness of the Moldovan banking sector in the future.

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STATE SUPPORT IN PHYSICAL INFRASTRUCTURE UPDATING OF AGRICULTURAL ENTERPRISES

Doctor of Economics, professor ***Marenich T.,***
Candidate of Economics, associate Professor ***Zaika S.,***
Candidate of Economics, associate Professor ***Lutsenko O.,***
Candidate of Economics, associate Professor ***Polyvana L.,***
Candidate of Economics, senior teacher, ***Birchenko N.***

Ukraine, Kharkiv, Kharkiv Petro Vasylenko National Technical University of Agriculture

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ABSTRACT

The basic constituents of state support of technical update of agriculture of Ukraine are considered in the article. The dynamics of expenses of the state budget on agriculture and the structure of basic market levers of state support of physical infrastructure of agricultural enterprises: financial leasing, partial indemnification of domestic agricultural machinery and reduction of prices for credits has been analyzed. Monitoring of current problems of granting and the ways of improvement of mechanism of state support have been offered. No doubt that the proper support from the side of the state is the motive force in activation of the process of technical update of agricultural enterprises.

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Introduction. Logistical support of agricultural commodity producers is one of the main terms for development of agrarian production. Providing of agricultural enterprises with the machinery does not satisfy a half from a technological necessity. For the normal update of agricultural equipment and tractor park, it is needed to purchase 8-10% from a present amount of machines, and taking into account introduction innovative of investment models of development of agrarian industry, 12-15%. The main reasons through which logistical support of agricultural enterprises of different forms of management doesn't reach the necessary level are the lack of facilities at enterprises, imperfection of credit and depreciation policy and insufficient state support.

Research results. As the analysis proved, the basic constituents of state support of technical update in agriculture of Ukraine in 2002-2019 were [1]:

1) partial indemnification of cost of new machines of domestic production, purchased by the agricultural commodity producers;

2) state leasing fund (budgetary support of operations on leasing of agricultural machines);

3) long-term credits, and also the credits of commercial banks and the personal funds (partial indemnification of interest for to the credits).

The dynamics of expenses of the state budget and ratified volumes of some reasons of charges of the state budget on agriculture is summarized in Tab 1.

As data in Tabl.1 testify, the general volumes of expenses constantly increased by 15 times, the same dynamics characterizes the expenses on agriculture. At the same time volumes of the state expenses related directly to technical update were utterly unstable. For the period analyzed expenses

of the Ministry of Agrarian Policy grown twice and arrived at on the average 5.9%, but their share diminished by 15 times. We will consider and analyze each of constituents.

The program of partial compensation was introduced in 2002 and was provided on a non-refundable basis at a rate of 30% of the cost of a complex agricultural machinery of domestic production, excluding VAT, according to the list approved by the interdepartmental expert council on the definition of priorities in the production of machinery and equipment of agricultural producers. The indicated funds were directed to: support of manufacturers of machinery and stimulation of demand from their side.

Access to the 30% compensation for the cost of agricultural machinery was available for the enterprises that were able to find the financial resources for its acquisition, and its real size was 25% of the purchase value. At the same time, the authorities restricted the choice of the agricultural enterprises by defining the list and marginal prices for the equipment subject to compensation.

Table 1. Dynamics of financing of budget expenditures for technical renewal of agriculture in Ukraine

Budget expendures / Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total budget expenses, mlrd grn	34,8	55,9	72,2	117,3	140,2	174,6	253,2	274,1	305,6	342,6	413,6	412,5	441,5	581,7	647,2	841,4
Ministry of Agrarian Police and Food mlrd grn	1,1	2,5	3,1	5,1	7,3	8,2	12,1	6,3	5,7	10,4	8,4	8,4	3,5	1,7	1,6	5,5
% expendures of Agrarian Ministry (the total volume)	3,1	4,5	4,3	4,4	5,2	4,7	4,8	14,5	1,8	3,0	2,0	2,3	09	0,3	025	0,7
Financial support of agricultural enterprises through the mechanism of reduction of prices of short-long term credits mlrd grn	0,1	0,07	0,1	0,4	0,3	0,6	1,6	0,03	-	0,05	-	0,09	-	0,3	0,2	0,3
% finsupport through the mechanism of reduction of prices of short-long term credits	6,2	2,9	3,2	6,7	3,5	8,1	13,6	4,7	-	10,05	-		-	17,6	12,5	7,8
Partial indemnification of cost of difficult technique	0,3	0,02	0,05	0,3	0,03	0,1	0,1	-	-	0,01	-		-	-	-	0,9
% Partial indemnification of cost of difficult technique	0,8	0,8	1,6	5,8	0,4	1,6	0,8	-	-	0,09	-	-				16,3
Financial leasing of domestical agricultural technique	0,07	0,09	-	0,007	0,4	0,1	0,004	-	-	-	-					
% financial leasing	6,3	3,6	0-	0,1	5,5	1,2	0,03	-	-	-						
Finance support AIC											0,08	0,09	0,05	0,05	0,02	0,06
% Finance support AIC											0,9	1,0	1,4	2,9	1,2	1,0

*Complited by the authors on the basis of laws «State budget» on corresponding year [1].

Considerable experience of application of this program testifies that expenditures on this program substantially varied considerably over the years: with a positive dynamics till 2008, the cessation of financing in 2009, significant reduction in the post-crisis period, and since 2012 through the optimization of

number of the budgetary programs in one the 'Financial support of measures in an agro-industrial complex', the code of programmatic classification of this program ceased to exist. It was also difficult for many agricultural enterprises to pay 70% of the cost of complex equipment at once, and it was necessary to look for opportunities to attract long-term loans. The discrepancy between the price and quality of equipment also remained a negative moment. Thus, the buyer compensated the share of expenses for incomplete use of the capacities of the corresponding machine-building plants [2].

However, the results of research conducted by the experts from international organizations confirm the effectiveness and the right to exist of this program; after its reactivation in 2017 it became quite a successful lever of stimulating the acquisition of domestic machinery [3]. During 2017, 134.1 million UAH was absorbed under this program, and 1220 agricultural commodity producers acquired almost 2906 pieces of equipment for the amount of 670.3 million UAH. In 2018, 912.9 million UAH were spent on the compensation of the purchased domestic agricultural machinery which is (96.6%) of UAH 945 million of the planned budget [4].

The leaders of this program were the enterprise of Vinnytsia, Odesa, Chernihiv, Dnipropetrovsk, Khmelnytsky, Poltava and Zaporizhzhya regions. Each of them purchased over 500 units of domestic machinery. In addition, from 40 to 115 million UAH of budget indemnification funds was spent in each of these regions.

The State Budget of Ukraine for 2019 provided 25% compensation for the cost of domestic equipment and 15% for farms. To this purpose, UAH 881.79 million and UAH 800 million on the development of farms has been allocated. From the specified UAH 800 million, a part of the funds can be used by farms for additional 15% indemnification of the cost of the equipment. It will allow in future not only to interest agricultural commodity producers in acquisition of domestic machinery but also attract additional funds for domestic machine builders and to improve the quality of machinery.

At the same time, the mechanism of partial indemnification program needs some improvement. Thus, the localization level of 60% shouldn't be a condition of participation in the program [4]. With the current low level of production quality, it will repel potential buyers. In today's conditions of globalization of markets, a high level of localization can be a consequence of investment attractiveness, ease of doing business, but not a goal. Therefore, the criteria for the level of localization must be abolished altogether or reduced to at least 20-30%.

It is also necessary to abolish the status of a resident, the criterion of wages level and other requirements as the criteria for selecting producers of equipment, as this considerably reduces the list of participants, eliminates the participation of the enterprise engaged in licensed production and large-scale assembling of high-quality foreign machinery, which reduces the attractiveness of participation in the agrarian enterprise program. It is important to establish the criteria for the selection of production and assembling of the machinery and the payment of taxes and fees on the territory of Ukraine, as well as the availability of service warranty and post-warranty service.

The indemnity must be raised to a level not less than 40% for all buyers, not just farms. Due to the fact that agricultural enterprises prefer high-tech, productive foreign machinery, 25% indemnification will not be able to fully interest buyers and raise the demand for domestic equipment in the market.

It is also necessary to send partial compensation of the cost of machinery and equipment for the agro-industrial complex directly to enterprises of the domestic agricultural machine-building industry. Under this approach, the following positive changes are achieved: simplification of control over the use of funds and increasing demand for agricultural machinery thanks to the interest of machine-building companies in improving the quality of their products. In addition, customers will not have to pay 100% of the cost of the equipment at once, and the released funds can be used for other purposes, which will further increase the demand for equipment.

In addition to this, agricultural techniques manufacturers should spend at least half of the profit received from the sale of the equipment under the compensation program exclusively on scientific and technical and engineering design, the introduction of advanced technology and the organization of licensed production.

Another measure of the state was the financing of the purchase of agricultural machinery at the expense of the state budget and its transfer to financial leasing, which is the most widespread in the world practice of forms of financing. In the United States, leasing covers more than a third of all investment. One of the largest tractors in the world, John Deer, an international company, has been leasing more than 50% of sales in recent years [5].

However, the application of leasing in the technical and technological re-equipment of agriculture of Ukraine is unacceptably low. Only 0.2% of the agricultural equipment available is in leasing. Of about 2 million tractor units and other equipment, which is prepared to go to the field annually, only about 4 thousand units was purchased under the leasing scheme.

The total share of leasing investments in funds spent on the purchase of machinery and equipment of agricultural producers remains insignificant (7.1%). The appreciation of leasing reduces its attractiveness: in the structure of leasing payments, the remuneration to the lessor has grown by 2 times, compensation for the loan – by 6times, other costs – by 4 times and the reimbursement of the value of the object of leasing, by contrast, decreased by 15%.

The main factor behind the rise in price was the change in the base of charging a one-time fee for organizing the delivery of equipment: at a rate of 7% of the non-recoverable initial value, whereas previously payment was charged less the previous lease payment for the use of the equipment in terms of reimbursement of its value.

In our opinion, in order to increase the efficiency of this direction of state support, it is necessary to monitor the activities of agricultural machinery manufacturers, who transfer funds for leased equipment and carefully select specific types of equipment according to their quality, improve the conditions for providing leasing services in the direction of reduction of commission fee, to raise qualitative parameters and expand the list of equipment, which is transferred to the leasing, to actively involve small and medium enterprises, including cooperatives and farms.

The financial support of enterprises through the mechanism of cheapening loans (including interest and all expenses related to servicing the loan) was allocated on average 6.5%. Almost negligible shares for partial compensation of the cost of complex domestic production and financial leasing, which is only 1.5% of the total expenditures of the Ministry of Agrarian Policy. Of course, such a level of budget financing for the development of agro-industrial production in Ukraine is extremely insufficient and many times less than necessary.

Our research has shown that the program of financial support to the agroindustrial complex through the mechanism of cheapening loans has disadvantages that impede its effective operation. Thus, the significant disadvantage of the investigated mechanism is the discrepancy of some areas of the targeted use of preferential loans with economically justified terms of crediting. The low profitability of agrarian business does not allow to recover most of the prescribed mechanism of medium-term financing of expenses up to 3 years. In our opinion, 80% of agricultural enterprises need long-term crediting from 5 to 20 years, and 20% – from 1-3 years.

The mechanism of partial indemnification of credits is not fully used, through a refuse in the grant of credits to the unprofitable enterprises, even at presence of mortgage and mortgage requirements to providing of credits [6]. Also, the main condition for obtaining a loan should be the possibility of its timely repayment, but not a competitive basis.

Consequently, the bank crediting so far did not play a considerable role in the development of agricultural industry. The bank crediting while did not play a considerable role in development of agricultural industry. However, much positive tendencies are noticeable in relation to growth of volumes of crediting from the side of domestic commercial banks, including concessional lending.

The analysis of volumes of the budgetary financing testifies that with their growth the amount of the purchased machinery was increased. Budgetary support of all market levers, which was instrumental in the increase of volumes of acquisition of technique, had the positive enhanced effect (a coefficient of correlation between the selected facilities and amount of the purchased equipment was 0.872). In 2003-2012 the share of the purchased domestic machinery with partial indemnification its cost was 20%, financial leasing– approximately 22.4 %, and concessional lending – 26.5%. In our view, these figures are convincing enough to lead to expedience of state support. In separate years some programs were not financed sufficiently, that diminished the amount of acquisition of agricultural machinery by many times.

Certainly, the mechanism of granting indemnifications in all the programs needs improvement. The main drawbacks include: limited financial capacity of agricultural producers, small volumes and unevenness of state budget revenues, and the risk of a large part of budget programs through their financing from the special fund. It should also be noted that the structure of budget financing for the development of physical infrastructure is not stable.

The budget financing of the agroindustrial complex is characterized by a variety of varieties and its incomparability over the years. For example, programs that operated during 2003-2011 under the program classification 28002240 'Implementation of financial support of agribusiness enterprises through the mechanism of cheapening loans', 2801430 'Partial indemnification of the cost of complex agricultural machinery of domestic production', as well as 2801490 'Measures on financial leasing operations of domestic agricultural machinery', in the state budget of 2012 and 2013 were consolidated into one budget program KPKV 2801180 'Financial support of measures in the agro-industrial complex', and its planned volume decreased by 8.5 times.

In our view, the association of several programs into one greatly complicates the control over the implementation of the principle of the targeted use of budget funds; creates opportunities for abuse; does not ensure the efficiency of the use of public resources. We can also argue that insufficient funding, uneven allocation of funds, lack of transparency in the selection of participants and an imperfect procedure for allocating budget funds aimed at partially offsetting the cost of difficult agricultural machinery of domestic production did not make it possible to realize all the benefits of this state support program as a mechanism of partial stimulation by the state demand for agricultural machinery from private capital.

For efficient use of budget funds for targeted programs, the support should be carried out in a complex manner, which involves budget financing within several interdependent programs at the same time, as the lack of funding or underfunding of one of the programs can lead to the disruption of the entire technical chain and lead to non-implementation of the entire program.

Conclusions. In general, the amount of financing of the State Target Program on the implementation of technical policy in the agro-industrial complex for the period till 2021year at the expense of the state budget at the level of 7.6% were not implemented and are constantly violated [7].

The analysis of the existing order of state support for the technical update of agrarian production shows the need for its improvement. Particular attention should be paid to its extremely limited volume.

For the improvement of mechanism of national support it is expediently:

– to determine the criteria of distributing of budgetary funds;

– to introduce a mechanism for the participation of agricultural producers in state financial support programs on the basis of equal access and effective use of funds;

– to increase the amount of financing and implement the relevant control system;

– to promote the efficiency of budget expenditures to support the agrarian sector of the economy by introducing a program-target method for the formation and use of budget funds;

– to monitor the implementation of budget programs, which will result in the cancellation of ineffective programs and direct financial resources to implement programs that are most in line with the objectives of state support.

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DECISION-MAKING IN THE MANAGEMENT OF THE TAX AUTHORITIES ON THE BASIS OF INTEGRATED PERFORMANCE INDICATORS

Assistant Professor ***Oleksandr Redych,***
University of The State Fiscal Service of Ukraine, Irpin, Ukraine

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ABSTRACT

The paper highlights the results of applying the methodology of integral convolution of key indicators of economic efficiency of territorial subdivisions of the tax authority of the state: results of tax collection, productivity, cost, dynamics of indicators. The criteria for grouping of territorial tax divisions according to the values of the indicator of effectiveness for the purpose of making tactical and strategic management decisions are formed. The paper formulates recommendations on the use of the proposed approach in goal-setting when making managerial decisions based on the "sigma" management.

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Introduction. The state implementation of key performance indicators.

In 2001, the State Tax Service of Ukraine (STSU) with the support of the International Bank for Reconstruction and Development (IBRD) has initiated project "Modernization Program of the State Tax Service of Ukraine" (MPSTS). Tracking the results of qualitative and quantitative changes in society caused by the implementation of the project, the degree of achievement of project objectives and fundamental changes associated with its implementation, carried out on the basis of the developed and agreed with IBRD key performance indicators (KPI).

In accordance with the obligation of STSU were calculated baseline and control values of KPI, that have been identified as required to track and recorded in Appendix to the Loan Agreement (the "Modernization of the State Tax Service of Ukraine - 1") on September 4, 2003 № 4698-UA between Ukraine and the IBRD. Monitoring KPI for 2001-2010, carried out company "GFK Ukraine". Results of monitoring indicators listed in Table 1 [1].

Table 1. Value indicators of progress MPSTS (2001-2010)

Name of indicators \ year	2001	2005	2006	2007	2008	2009	2010
(I1) Voluntary fulfilment of tax obligations by the methodology of 2005-2006	54,5	74,7	86,8	88,9	81,6	90,6	91,8
(I2)Voluntary fulfilments of tax obligations by the methodology of 2007	-	-	-	64,1	64,7	57,1	39,2*
(I3)The cost of tax compliance	56,1	53,8	59,4	63,8	60,2	61,1	51,2*
(I4)The probability of detection of cases of tax evasion by the method in 2007	-	8,7	5,0	6,4	7,0	4,2	6,7*
(I5) Quality performance features of STSU, tax administration and taxpayer service	33,6	56,9	57,5	66,1	62,3	60,5	62,0
(I6) The integral criterion progress of the MPSTS in 2007-2010 **	-	-	-	47,0	49,0	20,0	32,0

* Statistically significant differences compared with the 2009 results
** Calculated by the author using indexes I2 - I4 on the methodology of convolution (w = 0,25)

Analysis of Table 1 makes it possible to analyze the dynamics of indicators of progress MPSTS. Obviously, the dynamics of generalized indicators of implementation MPSTS in 2010, has a rather ambiguous nature. There was a significant deterioration in voluntary fulfillment of tax obligations by the method in 2007 (by 17.9 percentage points) and increased burden of the cost of tax compliance (the indicator decreased by 9.9 percentage points). Index Voluntary fulfilments of tax obligations fell by individual entrepreneur, whose share in the total number of taxpayers in Ukraine is the most significant (91.6% in 2010) and even the growth rate in the other groups did not prevent the negative dynamics of the overall indicator.

The reduction of the costs of tax compliance was observed in all groups of enterprises.

The integral indicator of progress MPSTS (2007-2010) that was calculated by the author according to the methodology convolution indicators also confirms that in 2010 the overall quality of functioning of DPS has not reached of the pre-crisis value (assuming w = 0,25).

It should be noted that the above results of the monitoring of the STSU are the results of the external evaluation, which in itself is a useful and important for strategic decision making, but they do not allow to analyze the causal relationship. In addition, key performance indicators which were considered, did not allow the quality and operating efficiency of STSU.

However urgent problem today is the lack of really existing system creating and monitoring the indicators of activities of STSU, and thus, built on the basis of that system corporate decision support system, operational risk management and overall quality of activities of subdivisions STSU.

The methodology of calculation indicators

It is known that for evaluating the quality of any economic process is important to choose the parameters that characterize its and identify endogenous and exogenous variables. It is logical evaluate the level of socio-economic development of the region from the efficiency of tax policy and the quality of activity of STSU. The quality of services provided by STSU for business environment of the region, the level of partnership can significantly affect the tax revenue. However, from the point of view of a head of STSU, the value of revenues depend on the tax base, which is a reflection of socio-economic development of the region. And as in the first and in the second case, the result is significantly influenced by the level of corruption that is determined, including the effectiveness of anti-corruption legislation (Fig.1).

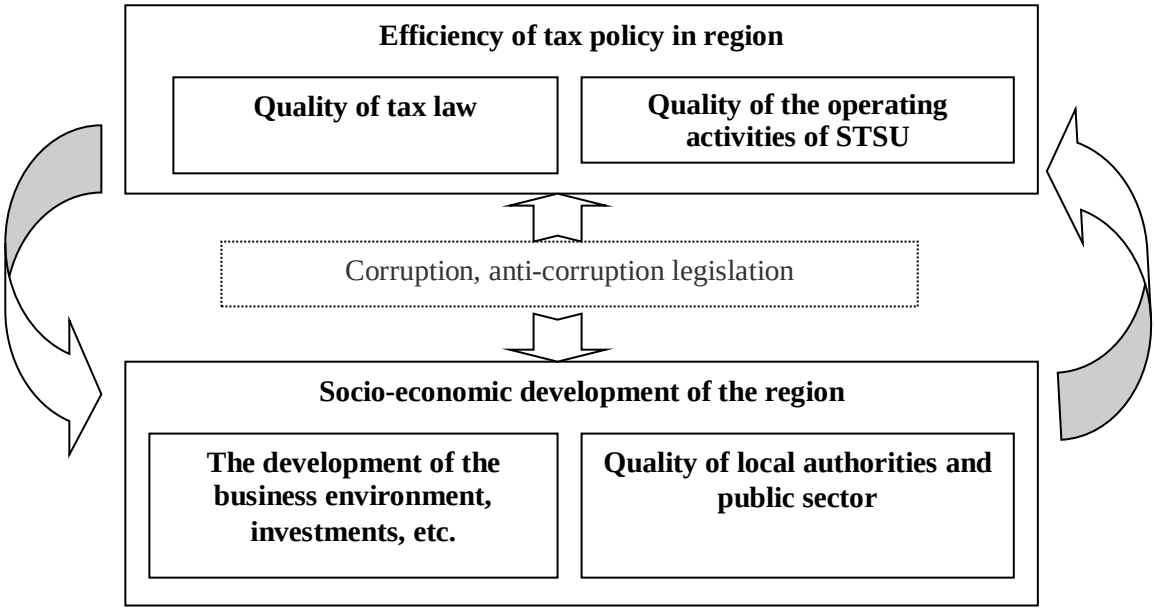

Fig.1. Interdependence of socio-economic development and the effectiveness of tax policy in region

In this paper as the main resultant indicator is taken the effectiveness of tax policy in the country (region), that considered as functional:

$$F = f(Q, E, U) \quad (1)$$

where: F – the level of efficiency of tax policy; Q - quality work of STSU (determined on the basis of internal data STSU in terms of effectiveness, quality operations, cost effectiveness, etc.) E - level of

socio-economic development of the region; U – the external quality assessment activities of the STSU made by nongovernmental organizations on the agreed methodology.

Obviously, the tax policy in the country (region) can be considered as effective if indices Q, E, U have a positive trend.

Information resources modernized information system of STSU allow calculate statistics distribution of key indicators. Therefore, for tactical and strategic decision-making based on integrated criteria, that discussed below, may be used a method known as «optimization method on average». Due to the simplicity, enabling analysis of causal relationships, forming conclusions based on the economic content of indicators and built on them integral criteria or KPI, this method can be easily integrated into the information-analytical systems STSU. Also in the future on the basis of approved indicators in the STSU can implement decision support systems (DSS) and intelligent technologies that are based on neural networks, fuzzy sets, pattern recognition, classification, clustering and so on [2-4].

In applying the method optimize on average no need determine the probabilities indicators (criteria, key performance indicators) and use some statistical characteristic, namely mathematical expectation. A value of each KPIk depends on a vector of strategies (possible solutions for its improvement) x, an array of determined parameters A (tax law, modalities business, etc.) of options realizations y1, y2, ..., yi of random factors Y1, Y2, ..., Yi (the level of violations of the law by taxpayers, tax receipts, etc.) (2):

$$KPI_k = KPI_k\,(x, A, y_1, y_2, \ldots\ldots, y_i), \tag{2}$$

Then the mathematical expectation M[KPI_k] can be written as the integral (3):

$$F_k = M\left[KPI_k\right] = \iiint_i (A, x, y_1, y_2, \ldots., y_i)\, f(y_1, y_2, \ldots., y_i) dy_1, dy_2, \ldots, dy_i \tag{3}$$

$$= F_k(x, A, B),$$

where: F_k – value mathematical expectation k-th KPI; B – an array of well-known statistical characteristics of random variables Y_1, Y_2, ..., Y_i; f (y_1, y_2, ..., y_i) - the law of distribution of random variables Y_1, Y_2, ..., Y_i.

In applying the method to optimize on average optimal strategy is chosen from the set of admissible strategies that maximizes the value of mathematical expectation integral index I = M[F] and calculated on the basis of all KPIk. Other words the optimal strategy management authority STSU must satisfy the following condition (4):

$$\bar{I} = F(x, A, B) = \max F(x, A, B) = \max_{x \in X} M[I(A, x, y_z, y_z, \ldots, y_i)]. \tag{4}$$

When using the optimal strategy in many organs STSU, for example in the regional (oblast), district, city, or national levels, will on average the best result of their operation.

For calculate the indicators, integral criteria and key performance indicators that are further in the text, was used additive method of convolution parameters (5):

$$I_k = \max \sum_{i=1}^{n} \pm w_i q_i \qquad \sum_{i=1}^{n} w_i = 1, \qquad 0 < w_i < 1 \tag{5}$$

where: I_k - integral criterion; q_i - normalized index; w_i - weights.

For normalization indicators, which growth indicates to improve the situation, was used formula (6):

$$q_i = q_i(x_i) = \begin{cases} 0, & \text{при } x_i \le \min_i \\ \left(\dfrac{x_i - \min_i}{\max_i - \min_i}\right) \times 100, & \text{при } < x_i \le \min_i \\ 100, & \text{при } x_i > \max_i \end{cases} \tag{6}$$

For normalization indicators, decrease of which indicates to improve the situation, was used formula (7):

$$q_i = q_i(x_i) = \begin{cases} 100, & \text{при } x_i \le \min_i \\ (\frac{\max_i - x_i}{\max_i - \min_i}) \times 100, & \text{при } < x_i \le \min_i \\ 0, & \text{при } x_i > \max_i \end{cases} \quad (7)$$

Below are the names and contents of the main indicators that was tested in the calculations [5]. Indices i, j in terms of mean i-th unit of the STSU in the j-th region (region), Wij – weights. It is possible to calculate the parameters for all subdivisions at all levels of STSU center, region, district, city and etc [5].

The integral criterion of the quality activity of STSU subdivisions (**Iqa_{ij}**) – general criterion, calculated on the basis of quality criteria operating activity, effectiveness, and others, including the level of a violation of law by STSU employees;

The integral criterion of effectiveness activity of STSU subdivisions (**Iea_{ij}**) – index characterizing the effectiveness of tax collection and payments and cost-effectiveness of the STSU *subdivisions*, their dynamics;

The integral criterion of quality operational processes of STSU subdivisions (tax administrating) (**$Iqop_{ij}$**) – an criterion calculated by indicators of the main operational processes and characterizes the overall quality of operations of STSU subdivisions;

The integral criterion violations legislation by STSU employees (**$Ivle_{ij}$**) – integral index, which was calculated based on the actual indicators of violations of legislation by workers in the regions and by qualities preventive work to reduce the number of violations;

The integral criterion of socio-economic development (**$Ised_{ij}$**) - an index that characterizes the state of socio-economic development of regions and calculated based on the indicators of the State Statistics Committee of Ukraine;

The integral criterion of the quality of activity of STSU subdivisions, calculated NGOs (**$Iqan_{ij}$**) – indicator, calculated on the basis of survey made by non-government institutions and describes the activities STSU subdivision on the estimation that provided by taxpayers at an agreed methodology. For this criterion can be used for example the monitoring of key indicators by GFK Ukraine (table.1);

The integral criterion efficiency of tax policy in regions (**$Ietp_{ij}$**) – an indicator describes the effectiveness of tax legislation, tax system and quality activity of STSU subdivisions, their impact on the socio-economic development of the region, taking into account assessments by independent institutions and civil society. May be calculated on the basis of indicators **Iea_{ij}, $Ised_{ij}$, $Iqan_{ij}$.**

Figure 2-3 shows the general scheme of calculating The integral criterion of effectiveness activity of the STSU (Ieaij) and of The integral criterion efficiency of tax policy (Ietpij).

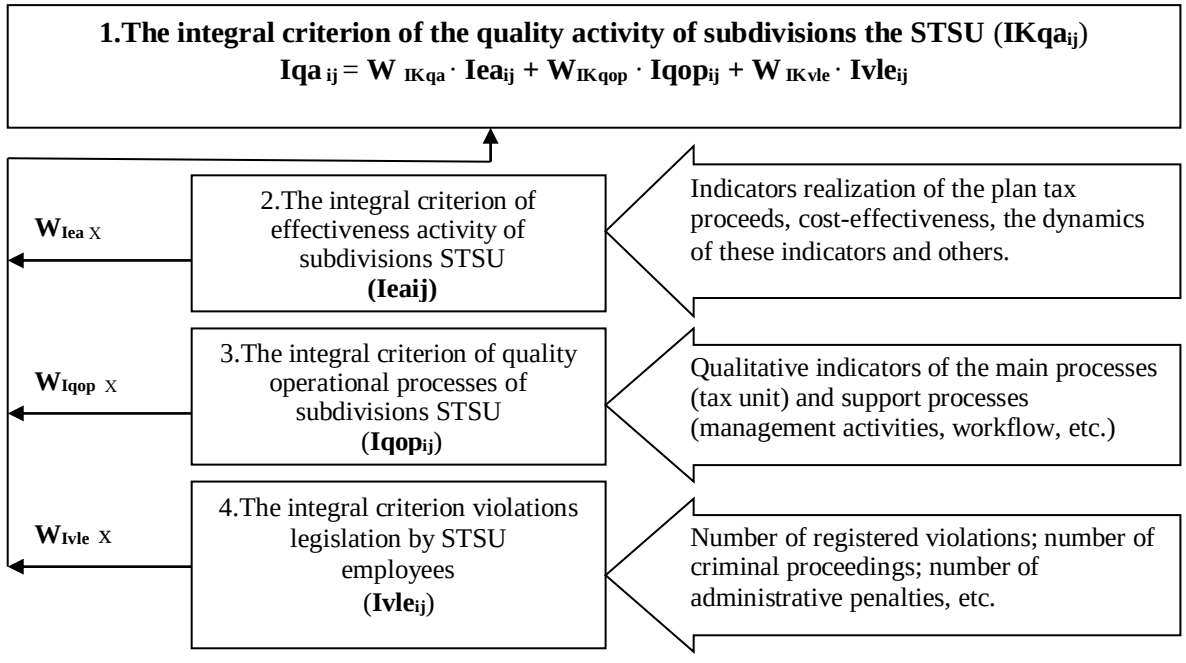

*Fig. 2. The general scheme of calculating the integral criterion of effectiveness activity of STSU subdivision (**$IKqa_{ij}$**)*

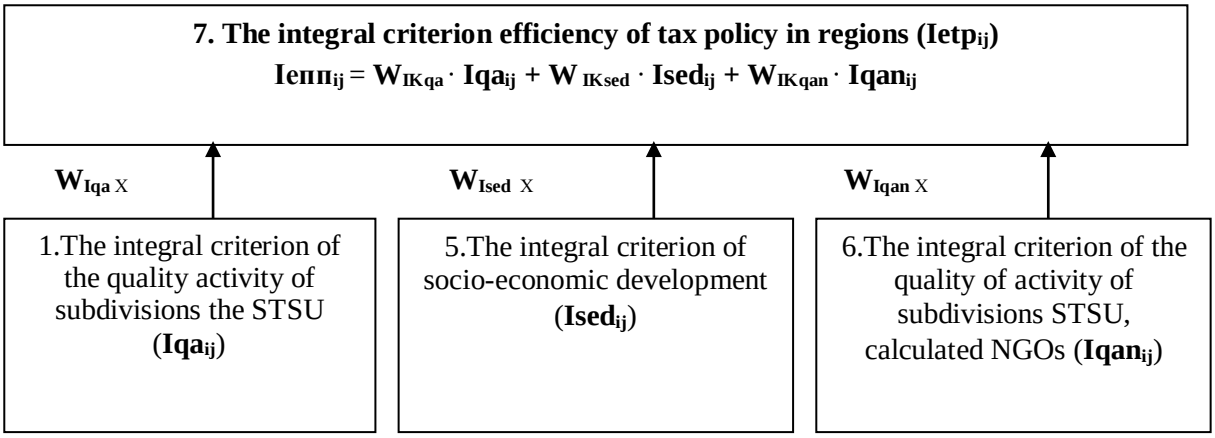

*Fig. 3. The general scheme of calculating the integral criterion efficiency of tax policy in regions (**IKetpij**)*

Research results. Table 2 shows the calculated values integral criteria that were considered. Weights were determined by experts. If it is was impossible to determine the level of influence indicator, were used equal weights.

For calculate the integral quality criterion operational processes of STSU was used statistical bulletin STSU by 01.10.2010.

For calculate the integral criterion of socio-economic development of regions was used information about the socio-economic development of Ukraine in 2009-2010, (regions) [6].

For calculate the integral criterion violation legislation of STSU employees used the data from report "Assessment of regional departments of Security STSU" for January - June 2010.

As can be seen from Table 2, the integral criterion efficiency of tax policy (Ietp) has an average value by regions of Ukraine 52.66, indicating a considerable reserve. This low level of effectiveness of tax policy explains low level of socio-economic development in the regions (Ised= 29.18), of low-quality work of DPS (Iqa = 62.54), of high levels of violations of law STSU employees (Ivle = 61.73).

Computed by author on the data GFK Ukraine The integral criterion of the quality activity STSU (Iqan = 64.98) is also consistent with calculations on the integral criterion Iqop=63,63, that was computed by the data of STSU (Tabl.2).

Table 2. The calculated integral criteria and basic statistics of their distribution

#	**Name of indicators**	Label	Average	Mean-square (δ)	max	min
1	The integral criterion efficiency of tax policy* (F)	**Ietp**	52,66	4,46	67,21	46,66
2	The integral criterion of the quality activity* (Q)	**Iqa**	62,54	6,33	73,78	48,49
3	The integral criterion of the quality activity calculated NGOs ** (U)	**Iqan**	64,98	4,24	70,20	58,40
4	The integral criterion of socio-economic development * (E)	**Ised**	29,18	**12,10**	78,64	14,66
5	The integral criterion of effectiveness activity (Ukraine) *	**Iea**	64,99	7,15	87,61	33,93
6	The integral criterion of quality operational processes (tax administrating)*	**Iqop**	63,63	6,82	78,54	48,37
7	The integral criterion violations legislation by STSU employees *	**Ivle**	61,73	**16,21**	92,64	22,70

*Computed by author on the data statistical bulletin STSU by 01.10.2010.
**Computed by author on the data GFK Ukraine by 31.05.2011.

For example let's see the results of calculating The integral criterion of the effectiveness of the STSU (Iea), which was calculated on data 462 STSU subdivisions. Criterion characterizes on average the performance of the STSU subdivisions, achievement assigned tasks of collecting payments, percentage deviation from the set of tasks, their dynamics, economic efficiency – and expenses of performance (Iea (average) = 64.99, Table 2).

Table 3. The rules of grading of STSU subdivisions in terms of effectiveness

Number of group	Group of DPS in terms of effectiveness of	Values of $IKea_{ij}$
1	Group high of effectiveness	Iea_{ij}> 72
2	Group moderate effectiveness	58<Iea_{ij}<72
3	Group low of effectiveness	Iea_{ij}<58

Table 2 shows the main characteristics distribution criterion Iea and on Fig. 4 shows its histogram, which indicating its compliance with the normal law. Based on statistical distribution parameters (Table 2, line 5) were formed rules of grading of STSU subdivisions in terms of effectiveness. To test was taken average value Iea = 65.0, Mean-square = 7 and were identified three main groups of STSU subdivisions.

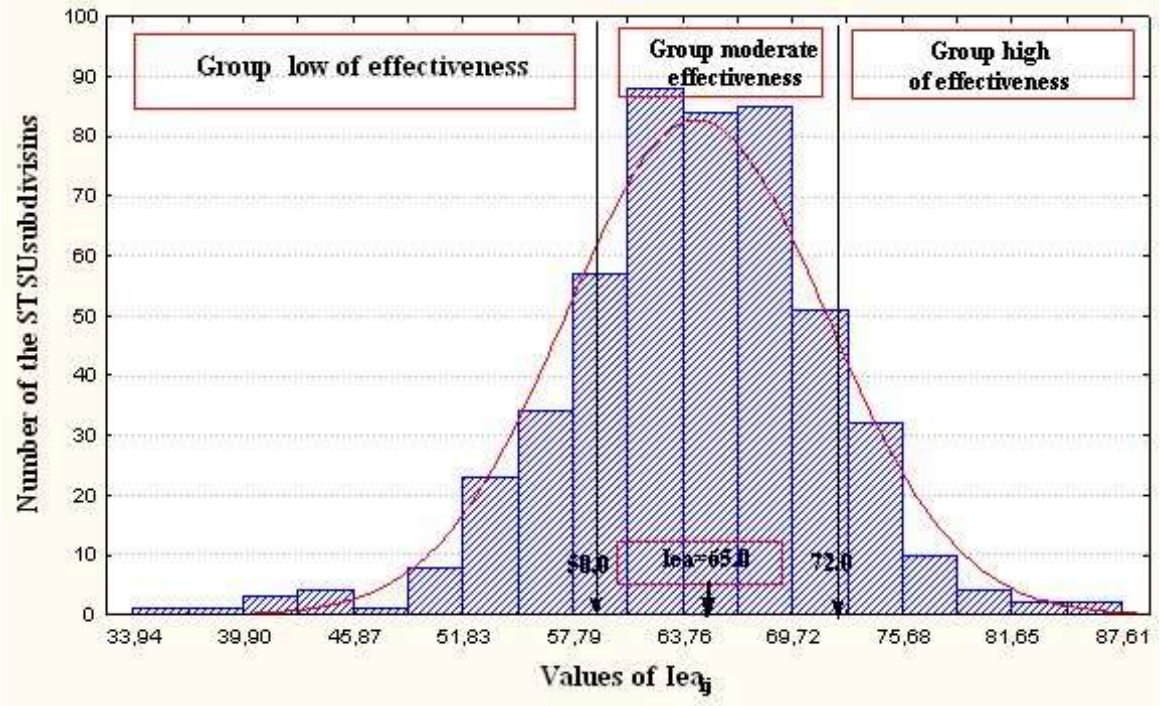

*Fig. 4. Histogram distribution of the calculated values of The integral criterion of effectiveness activity of STSU subdivisions (**$IKea_{ij}$**)*

The results of classification of the STSU subdivisions by the values of integral performance criteria given in Table. 4. In the 3rd group low of effectiveness falls 74 of STSU subdivisions, that is 16% of the total number of STSU subdivisions. The total sum non-fulfilment of the established objectives for tax revenues to this groups subdivisions is 9 225628 thousand grivnas or 53.14% of the total non-fulfilment of assigned tasks for collect to the General Budget Fund. To the group moderate effectiveness falls 331 of STSU subdivisions, or they 71.5%, and this confirming the normality of the distribution of the values of this integral criterion.

It should be noted that defining of the laws distributions for others criteria and indicators – the next necessary step in implementation this method. It will provide forming and choice strategies in decision making to improve the quality of activities of STSU in the in terms of risk managements.

Obviously, the STSU leadership would need to has pay special attention to the third group of the 74 subdivisions for elucidate the reasons non-fulfilment of the established objectives for tax

revenues, identify indicators that reflect the effect of the main factors, made an action plan to improve and develop based on the analysis of causation. However, to advisable to explore and illuminate the experience of 57 units of DPS first group, in particular the impact on the overall qualities of the activities of the STSU of levels laws violations DPS employees and others indicators.

For instance, subdivisions of the third group, usually have a lower rate of income dynamics, productivity and economic efficiency, a high level of violations of workers DPS legislation, significant sums non-fulfilment of the established objectives for tax revenues. So at the central level of STSU may be formed target criteria of effectiveness, quality of activities in general and certain groups of subdivisions. Strategies to achieve the targets can be based on the identification of intellectual and material resources to improve specific indicators, reduce the risk of adverse outcomes.

Table 4. The results of the classification of the STS subdivisions by the values of The integral criteria of effectiveness activity (**Iea_{ij}**)

#	Values of Iea_{ij}	Number of the STSU subdivisions	Proportion of the STSU subdivisions in total, %	Total sum non-fulfilment of the established objectives for tax revenues, (thousand grivnas)	Proportion of the sum non-fulfilment of the established objectives for tax revenues in total sum non-fulfilment for Ukraine,%
1	$Iea_{ij} > 72$ (Group high of effectiveness)	57	12,3	-	-
2	$58 < Iea_{ij} < 72$ (Group moderate effectiveness)	331	71,5	8 132 563	46,86
3	$Iea_{ij} < 58$ (Group low of effectiveness)	74	16	9 225 628	53,14
Total		462	100	17 358 191	100

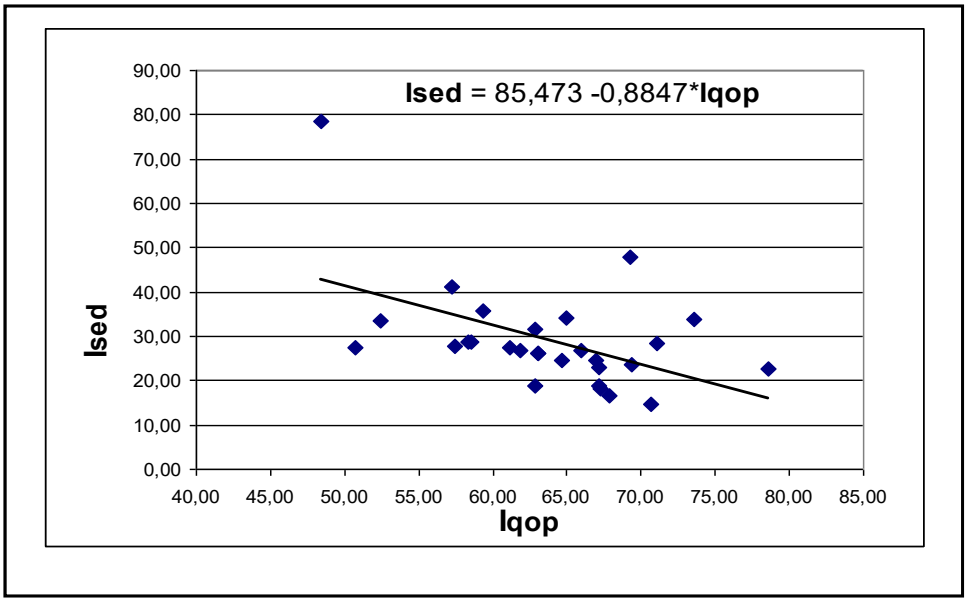

*Fig. 5. Correlation between The integral criterion of socio-economic development (**Ised**) and The integral criterion of quality operational processes (**Iqop**) in a regional context.*

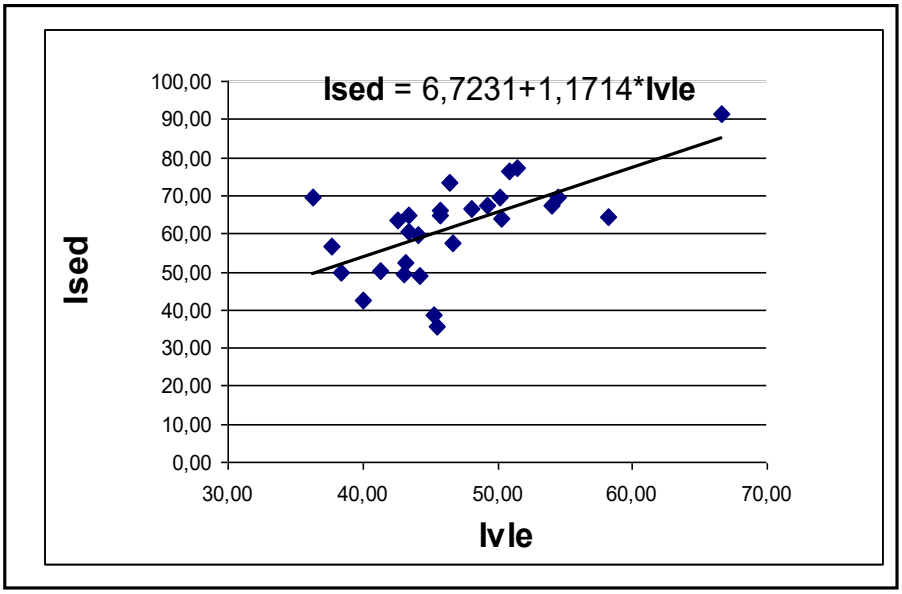

*Fig. 6. Correlation between The integral criterion of socio-economic development (**Ised**) and The integral criterion violations legislation by the STSU employees (**Ivle**) in a regional context.*

It is important to verify the logical inter-dependencies indicators. In this regard, the author was tested hypothesis of a direct relationship of quality activities of the STSU and the socio-economic development of regions. The result of the analysis according to the State Statistics Committee of Ukraine and the STSU on 10.01.2010, has shown unexpected results.

Between the level of socio-economic development and the quality activities of the STSU is a negative correlation, when between the level of effectiveness of the STSU - a significant direct correlation. Between the level of the quality activities of the STSU and the level of violation legislation of STSU employees - also is a negative correlation (Fig. 5,6,7).

Actually at this stage of the research is need for in-depth investigation of the causes of such dependencies, for which calculations should be made for a few periods and explored they dynamics.

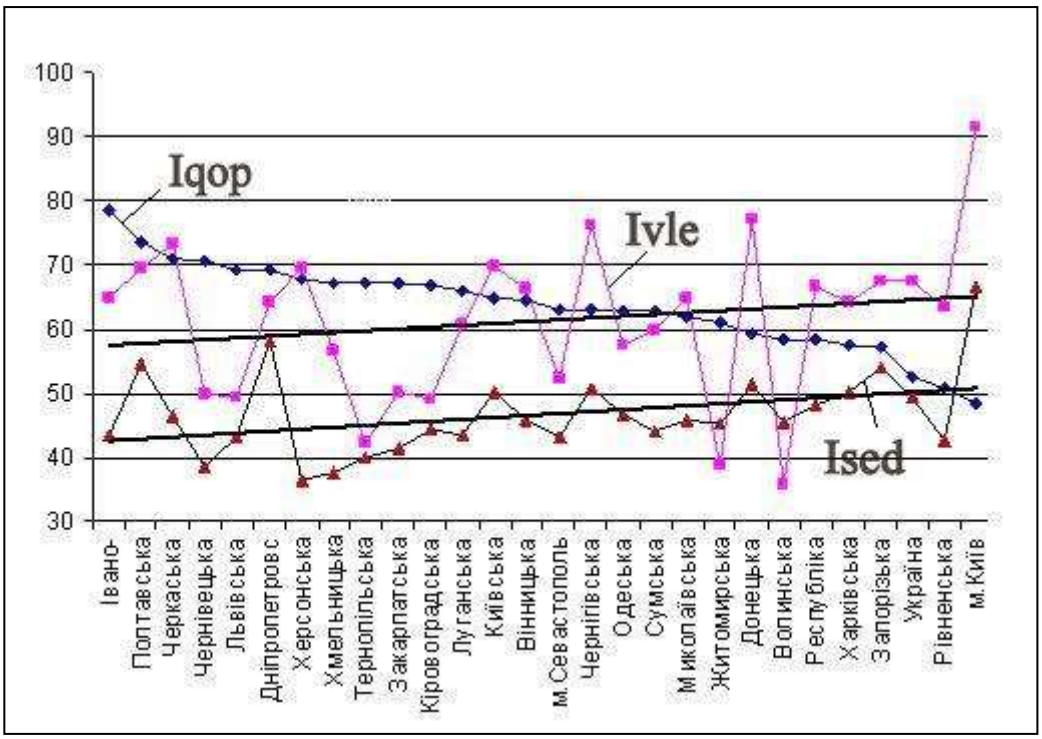

*Fig. 7. Charts values of integral criteria **Iqop**, **Ised**, **Ivle** when values of **Iqop** sorted by decrease.*

Conclusions. Preliminary conclusions that can be drawn from the application of the methodology and analysis interdependencies of the integral criteria:

1. Improving the situation of violation of legislation STSU employees leads to an increase in socio-economic development (ie economic situation is improving). On average, the improvement on 1% situation of violation legislation of STSU employees on average by 1.17% improving socio-economic situation of the region.

2. Negative correlation quality operational processes and of violations legislation of STSU employees can be explained by influence the level of corruption in the STSU on the formation indicators of quality, or of the level of legal education business and other factors, that needs further investigation.

3. Implementation in the management activities of STSU key performance indicators (Key Performance Indicator), Indicators of quality, economic efficiency, productivity, the dynamics of these indicators are relevant at this stage of reforming the tax system in Ukraine and will allow implement a system of effective motivation employees;

4. When filling information systems STSU indicators of socio-economic development, establishing exchange of economic information from the State Statistics Committee, State Treasury of Ukraine, application of the methodology of key indicators will improve the quality operational processes, tax forecasting, analysis of the use a tax potential, the implementation of tax policy in the regions and the country.

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ОЦЕНКА ВЛИЯНИЯ СФЕРЫ ОБРАЗОВАНИЯ НА ЭКОНОМИЧЕСКОЕ РАЗВИТИЕ СТРАНЫ

Ахмедова Эсмира М.,
диссертант Азербайджанского Экономического Государственного Университета (UNEC), преподаватель, Азербайджанская Республика, г. Баку

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ABSTRACT

This article indicates the results a comparative analysis the financing of the advanced countries of the world and similar indicators of Azerbaijan during the period active development of education and modernization of the economy. The methodology work is the fundamental works of foreign scientists, such as reports of the Organization for Economic Cooperation and Development (OECD), human development index indicators in the field of determining and assessing the dependence of socio-economic development on public investment in education. It is displayed that Azerbaijan has resources and potential for growth of human capital, for social and economic development of the country. On the basis of the research, some conclusions and proposals are presented that contribute to improving the prospects for the economic development of Azerbaijan.

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Введение. Значимость вклада сферы образования в развитии общества подтверждается мировым опытом. Он показывает, что все страны, успешно преодолевшие переход к современным рыночным отношениям (например, послевоенные Германия и Япония, США 60х годов), рассматривали сферу высшего образования как приоритетную и исходили из этого в своей инвестиционной политике, в которой расходы на сферу образования считались одними из основополагающих показателей социально - экономического развития страны. С одной стороны, это во многом объясняется и тем, что данный показатель отражает степень внимания, которое уделяет общество и государство образованию граждан. С другой стороны, образование имеет собственную значимость, так как оно способствует расширению кругозора людей, повышает возможность самореализации человека как личности, способствует материальному благополучию и здоровому образу жизни большей части населения страны. Таким образом, инвестиции в сферу образования являются не только важным способом качественного увеличения человеческого капитала страны, а также улучшения перспектив социально - экономического развития.

Проблеме влияния сферы образования на экономическое развитие стран посвящего большое количество работ ученых разных стран. Не смотря на это, вопрос о точной величине этого влияния остается открытым. Так, анализ влияния качества школьного образования на межстрановые различия в темпах экономического развития, выполненный в работе Hanushek, Kimko (2000), показывает, что качество может быть очень значимым фактором. Hanushek, Kimko (2000) после проведения ряда тестов на причинность пришли к выводу о прямом влиянии качества образования на экономический рост [1, стр. 67].

В работах Michael (1982) и Wolfe, Zuvekas (1995) показано, что более образованные избиратели более ответственно относятся к выборам в различные органы власти. Lochner,

Moretti (2001) в своей работе говорят о положительном влиянии образования на снижение уровня преступности. Среди работ, посвященных экономическому росту, в которых делался подобный вывод, можно выделить работы Lucas (1988), Barro (1991), Barro, Sala-I-Martin (1995). Среди международных сопоставлений эффективности расходов на общественный сектор можно выделить работы Fakin, Crombrugghe (1997),

Afonso, Schuknecht, Tanzi (2003) в своей работе провели сравнительный анализ для стран ОЭСР. Clements (2002) оценил эффективность образовательных расходов для стран Европы, а в работе Gupta, Verhoeven (2001) проведено исследование образования и здравоохранения для стран Африки.

Согласно данным Организации экономического сотрудничества и развития (OECD, 2001), для более образованных работников не только заработные платы выше, но и существуют бóльшие возможности в трудоустройстве и меньше риск остаться без работы.

А. Мэддисон, автор исследования «Динамические силы капиталистического развития», вывел зависимость, согласно которой увеличение ассигнований на образование на 1% ведет к увеличению валового внутреннего продукта страны на 0,35%.

Как правило, экономисты рассматривают расходы на школьное образование как инвестиции и в обучающихся, и в общество в целом. Опыт последних лет показывает, что расходы на образование – эффективные, а главное – необходимые инвестиции, так как в последнее время в мире неуклонно растет спрос на квалифицированную рабочую силу [1, стр. 7]. Уровень национальных расходов на образование - это величина, которая отражает общий объем государственных и частных расходов на образование в течение года. Она охватывает государственные бюджеты всех уровней, частные фонды, внешние заимствования, гранты и пожертвования от международных учреждений и организаций, неправительственных организаций.

Ниже представлена гистограмма, составленная согласно рейтингу стран мира по уровню расходов на образование в % к ВВП.

Гистограмма. Уровень расходов на образование в % к ВВП. Источник The World Bank: World Development Indicators 2014.

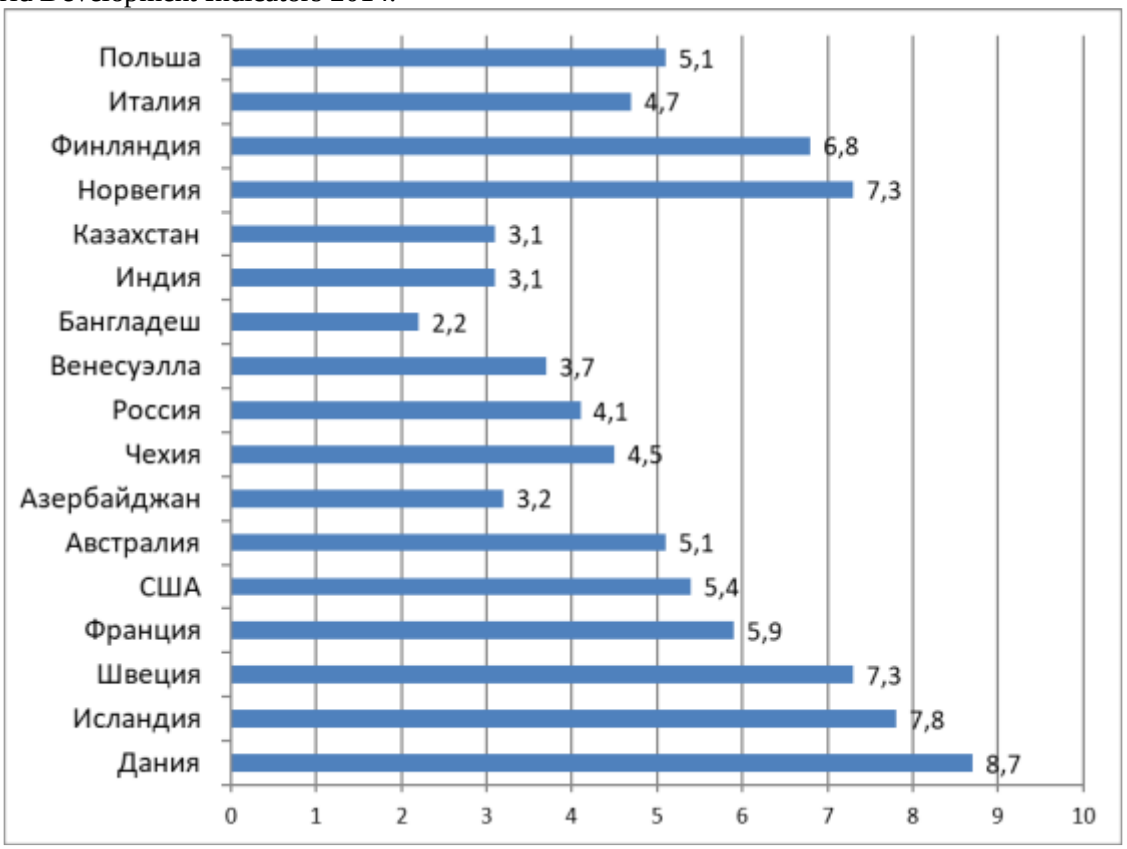

Рис. 1.

Источник: Организации экономического сотрудничества и развития (OECD)

Совокупным показателем, отражающим уровень развития человека в стране является индекс человеческого развития (ИЧР). Иногда этот индекс используют в качестве синонима таких понятий как «качество жизни» или «уровень жизни». Индекс измеряет такие важные и ключевые показатели, как состояния здоровья, получения образования и фактического дохода её граждан, по трём основным направлениям:

✓ доступность образования – данный показатель измеряется на основе уровня грамотности взрослого населения и совокупным валовым коэффициентом охвата образованием;

✓ здоровье и долголетие – данный показатель измеряется на основе показателя ожидаемой продолжительности жизни при рождении;

✓ достойный уровень жизни – данный показатель измеряется величиной валового внутреннего продукта на душу населения (по паритету покупательной способности, выраженному в долларах США).

Эти три направления измерений группируются в виде числовых значений от 0 до 1, среднее геометрическое которых представляет собой совокупный показатель ИЧР в диапазоне от 0 до 1. Затем государства ранжируются на основе этого показателя. В результате, все страны в рейтинге классифицируются четырьмя категориями:

1. страны с очень высоким уровнем ИЧР;
2. страны с высоким уровнем ИЧР;
3. страны со средним уровнем ИЧР;
4. страны с низким уровнем ИЧР.

Таблица 1. Общие расходы на третичное образование в странах «Большой восьмерки»

Страна	ВВП на душу населения, тыс. дол.*	Расходы на третичное образование в % к ВВП**	Расходы на одного учащегося в 5 к ВВП на душу населения (в национальных валютах)		
			Всего по третичному образованию	Уровень среднее профессионального образования	Уровень высшего образования
США	33725	2,3	57	н.д.***	н.д.
Канада	26443	2,5	57	н.д.	н.д.
Япония	24968	1,0	41	31	43
Германия	24601	1,1	42	22	46
Франция	23068	1,1	34	37	33
Италия	23937	0,8	32	30	32
Великобритания	23312	1,1	41	н.д.	н.д.
Россия	6067	1,1	27	13	35

* по паритету покупательной способности

** в национальных валютах

***н.д. – нет данных

Менее богатые страны обычно поддерживают расходы в сфере третичного образования на одного студента уровня средне профессионального образования около 50% от подушегово ВВП, а на одного студента уровня высшего образования – в пределах 100-150% от подушевого ВВП. Это позволяет хотя бы частично компенсировать разрыв в уровне финансирования с наиболее богатыми странами и уменьшить различия в его качестве.

Согласно международной методике и учитывая количество студентов и подушевой ВВП на 2014 год, финансирование третичного образования в Азербайджане должно составлять более 26% бюджета, выделяемого для сферы образования. Это составляет 409-433 млн манат или 524-555 млн долларов в США на состояние 2014 года. В странах, входивших в 2003 г. в двадцатку лидеров по ИРЧП, доля государственных расходов на третичное образование в общем образовательном бюджете правительства составляла в среднем 24%, находясь в диапазоне от 15% в Японии до 36% в Канаде.

Таблица 2. Расходы на образование на 1 учащегося в процентах к ВВП на душу населения

Группа стран	**Начальное образование**	**Среднее образование**	**Послесреднее не высшее**	**Высшее образование типа В**	**Высшее образование типа А**
I	19,4	26,0	30,0	30,5	45,4
II	17,6	23,3	21,8	28,3	45,0
III	15,2	18,6	н.д.	49,0	91,8
IV	14,4	21,2	н.д.	50,9	163,3

По Индексу человеческого развития (ИЧР) 2015 года Азербайджан находился на 78 месте с ИЧР 0,751 и входил во вторую группу стран – стран с высоким уровнем ИЧР.

Учитывая колличество школьников на 2014-2015 учебный год (1 322 тыс. человек), и затраты на одного учащегося к ВВП на душу населения в соотвествии с рекомендациями ЮНЕСКО и мировым опытом, нетрудно подсчитать, что они составили почти 64% бюджета сферы образования в 2014 году. Если принять во внимание только расходы на третичное и школьное образование в Азербайджане согласно мировому опыту для менее богатых стран чтобы частично компенсировать отставание от финансирования образования в развитых странах и не терять при этом качество услуг сферы образования, необходимо учеть, что в 2014 году эти расходы составили 89% средств, выделяемых на сферу образования, что составляет 1 460,8 млн манат при минимальном финансировании и 1 485,2 млн манат при максимальном расчете финансированичя средств.

Согласно данным Государственного Коммитета по Статистике Азербайджана, с января по ноябрь, т. е. за 11 месяцев 2015 года (примечание: 2015 г. – до девальвационный период в экономике Азербайджана) на финансирование нужд сферы образования было выделено 1 268,2 млн манат. Очевидно, эти расходы не достаточно покрывают финансирование образования послевузовского уровня, содержания штата преподавателей и прочих расходов. С учетом этих показателей и расходов госбюджета Азербайджана на 2015 год с трудом можно считать финансирование сферы образования на полноценном уровне.

Ведущие страны мира в период развития третичного образования (С 1990 по 2000-е годы) тратили на его развитие от 4 до 9% ВВП. После достижения развития в этой отрасли и получения отдачи, доля расходов в ВВП на образование была снижена до 2-4% в год. Необходимо отметить, что при этом общее финансирование сферы образование не уменьшилось. Произошло замещение государственных средств собственными средствами предприятий и организаций.

Рассмотрим показатели государственных расходов развитых стран мира в период форсированного развития сферы образования и модернизации экономики этих стран, приведенную в таблице 2.

Таблица 3. Показатели государственных расходов на образование

Показатели	Государственные расходы на образование			
	в % от ВВП		% от общего уровня государственных расходов	
Страны	1990	2000-2002	1990	2000-2002
Норвегия	7,0	7,6	14,6	16,2
Исландия	5,4	6,0	н.д.	н.д.
Австралия	4,9	4,9	14,8	13,3
Люксембург	3,1	4,1	10,4	8,5
Канада	6,5	5,2	14,2	12,7
Швеция	7,0	7,7	13,8	12,8
Швейцария	4,9	5,8	18,7	15,1
Ирландия	4,8	5,5	10,2	13,5
Бельгия	5,0	6,3	н.д.	11,6
США	5,1	5,7	12,3	17,1
Япония	н.д.	3,6	н.д.	10,5
Нидерланды	5,7	5,0	14,8	10,7
Финляндия	5,5	6,4	11,9	12,2
Дания	н.д.	8,5	н.д.	15,3
Великобритания	4,8	5,3	н.д.	11,5

Источник: Организации экономического сотрудничества и развития (OECD)

Азербайджан в последние годы также находится в состоянии модернизации экономики и системы образования, при более скромных расходах на эту сферу. Тем не менне тенденция увеличения расходов в удельном весе от государственного бюджета в Азербайджане положительная. В последние годы государство стало уделять большее внимание сфере образования, повысив расходы бюджета. Так, за 5 лет с 2013 по 2018 года расходы на образование выросли почти на 1,7 процентных пункта. По удельному весу уровня государственных расходов Азербйджан почти на таком же уровне как и Люксембург в свое время (см. Таблицу 3,4).

Таблица 4. Государственные расходы на образование в Азербайджане

Государственные расходы на образование							
в % к ВВП				**в % в Госбюджете**			
2010	**2013**	**2015**	**2018**	**2010**	**2013**	**2015**	**2018**
2,78	2,5	2,3*	2,06	11,3	7,7	8	8,4

*данные за январь – ноябрь 2015 г

источник: Государственный Коммитет Азербайджанской Республики

На становление каждого нового профессора в США независимо от предмета его исследований требуется в среднем 1,2 млн долл США. Профессор, который остается в университете более 25 лет после получения права бессрочного пребывания в должности приносит около 13 млн долл США в результате своей научно – исследовательской деятельности. Нельзя считать совпадением то, что самые современные исследования проводятся в лабораториях, сотрудники которых получают достойную плату.

По данным американских ученых, исследующих проблемы экономики образования, на долю последнего приходится 15-20% роста национального дохода. Кроме того, от 20% до 40% дает совершенствование научных знаний и их применение – процесс, в котором ведущая роль принадлежит высшим учебным заведениям.

В результате форсированного развития, образование в развитых странах сегодня превратилось в одну из самых динамично развивающихся сфер экономики и общества. Так, по подсчетам специалистов США, Голландии, Японии, образование - это самая прибыльная отрасль: она дает существенную прибыль (4-5 валютных единиц на 1 единицу затрат на обучение). А в национальном бюджете Австралии доходы от образования стоят на третьем месте после таких высокорентабельных отраслей, как добыча угля и туризм.

Проводимая в Азербайджанской Республике политика инновационной модернизации и диверсификации экономики предъявляет повышенные требования к эффективности организации системы образования, являющейся в настоящее время одним из стратегических факторов социально – экономического развития. В связи с этим предпринимаются систематические меры для реализации поставленных задач. Так, 19 июня 2009 года был принят Закон Азербайджанской Республики об Образовании. 24 октября 2013 г. принята государственная стратегия по развитию образования в Азербайджанской Республике. В утвержденной в 2012 г. Концепции развития «Азербайджан 2020: взгляд в будущее», а также в стратегических дорожных картах по национальной экономике и основным секторам экономики четко отмечено увеличивающуюся роль сферы образования в современном мире.

Основные выводы и рекомендации.

В данной статье был проведен сравнительный анализ структуры финансирования сферы образования сопоставимых периодов развития: период форсированного развития сферы образования и диверсификаций экономик развитых стран и аналогичных показателей Азербайджанской Республики. Рассмотрены и показаны значение и роль сферы образования на современном этапе развития. В результате проведенного исследования сделаны следующие выводы и предложены нижеследующие рекомендации:

1. Целесообразно расширять систему высшего и послевузовского образования в стране. Поскольку, сфера образования на уровне средне профессионального образования и высшего образования уровня носит стратегический характер и является ключевым фактором роста экономического роста экономики страны на современном этапе.

2. Увеличивать как количественные, так и качественные показатели системы образования страны. Необходимо рассмотреть вопросы поддержки широкомасштабного образования, подготовки и переподготовки, профессионального образования взрослого населения.

3. Провести критический анализ системы образования Азербайджана на всех уровнях с целью сопоставления в контексте международных показателей и ликвидации отрицательных факторов влияния.

4. Увеличивать финансирование системы образование. Главным фактором здесь является то, чтоб финансирование носило целевой характер. Например, учредить Эндаумент – целевой фонд, предназначенный для использования некоммерческих целей – образования, медицины, культуры.

5. Содействовать научному международному сотрудничеству в стратегических сферах и наукоемких отраслях.

6. Создание научно-исследовательских центров (к примеру, на базе существующих вузов) для превращения их точки развития и экономического роста страны.

7. Расширение политики выявления и сосредоточение талантов среди студентов.

8. Учитывая то, что объем научно – технической информации удваивается каждые 7 – 10 лет, специалисты всех уровней обязаны осваивать новые технологии, развивать навыки самообразования и быть вовлечены в систему непрерывного образования и повышения квалификации.

Сделав ставку на сферу образования, можно будет обеспечить стране конкурентоспособность экономики за счет подготовки квалифицированной рабочей силы, отличающейся высокой производительностью и гибкостью, а также за счет создания, внедрения и распространения новых идей и технологий. Ведь усиливавшееся соревнование государств в сфере высшего образования – это по сути, соревнование экономическое, поскольку образование в современных усовиях стало основным источником социально-экономического роста стран.

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