SOI: 1.1/TAS
DOI: 10.15863/TAS

ISSN 2308-4944 (print)
ISSN 2409-0085 (online)

№ 11 (67) 2018

Teoretičeskaâ i prikladnaâ nauka

Theoretical & Applied Science

Philadelphia, USA

Teoretičeskaâ i prikladnaâ nauka

Theoretical & Applied Science

11 (67)

2018

International Scientific Journal

Theoretical & Applied Science

Founder : **International Academy of Theoretical & Applied Sciences**

Published since 2013 year. Issued Monthly.

International scientific journal «Theoretical & Applied Science», registered in France, and indexed more than 45 international scientific bases.

Editorial office: http://T-Science.org Phone: +777727-606-81

E-mail: T-Science@mail.ru

ISSN 2308-4944

11

International Scientific Journal

Theoretical & Applied Science

The scientific Journal is published monthly 30 number.

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International Scientific Journal

Theoretical & Applied Science

ISJ Theoretical & Applied Science, 11 (67), 386.
Philadelphia, USA

Impact Factor ICV = 6.630

Impact Factor ISI = 0.829
based on International Citation Report (ICR)

The percentage of rejected articles:

ISSN 2308-4944

Impact Factor:					
	ISRA (India) = **3.117**	**SIS** (USA) = **0.912**	**ICV** (Poland) = **6.630**
	ISI (Dubai, UAE) = **0.829**	**РИНЦ** (Russia) = **0.156**	**PIF** (India) = **1.940**
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	JIF = **1.500**	**SJIF** (Morocco) = **5.667**	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

SECTION 7. Mechanics and machine construction.

Denis Chemezov
M.Sc.Eng., Corresponding Member of International Academy of Theoretical and Applied Sciences, Lecturer of Vladimir Industrial College, Russian Federation
https://orcid.org/0000-0002-2747-552X
chemezov-da@yandex.ru

Lyudmila Smirnova
Deputy Director for Studies and Methodical Work of Vladimir Industrial College, Honored Worker of the Initial Vocational Education of the Russian Federation

Elena Bogomolova
Materials Developer, Lecturer of Vladimir Industrial College, Russian Federation

Irina Medvedeva
Master of Industrial Training, Vladimir Industrial College, Russian Federation

Alexandra Strunina
Lecturer of Vladimir Industrial College, Russian Federation

Polina Nikitina
Lecturer of Vladimir Industrial College, Russian Federation

Oleg Gorbatenko
Master of Industrial Training, Vladimir Industrial College, Russian Federation

VOLUMETRIC MECHANICAL STRESSES IN A STEEL BUSHING AFTER REMOVING OF RADIAL LOAD

Abstract: *Stress-strain condition of a steel bushing in a vector form along axes of the Cartesian coordinate system after removing of constant radial load is presented in the article. It is determined that mechanical stresses in a longitudinal section of the bushing material are caused by compression deformation, and in the cross section mechanical stresses are caused by tensile deformation.*

Key words: *a bushing, principal stress volume, a model, a vector, deformation.*

Language: *English*

Citation: Chemezov, D., et al. (2018). Volumetric mechanical stresses in a steel bushing after removing of radial load. *ISJ Theoretical & Applied Science, 11 (67),* 201-204.

Soi: http://s-o-i.org/1.1/TAS-11-67-32 ***Doi***: https://dx.doi.org/10.15863/TAS.2018.11.67.32

Introduction

Stress-strain condition of hollow parts having a shape of rotating bodies at the action of different in direction, a method of application and pattern of changing in time of loads has been described in the works [1 – 10]. Axial, radial and combined loads act on elements of technological equipment during machining. These loads cause plastic deformation of

the elements material of technological equipment, i.e. changing of a geometric shape and sizes of the part, formation of microcracks in material and etc. High degree of material deformation is observed in the thin-walled parts of technological equipment. Active forces and torques along three coordinate axes are applied to the parts in three-dimensional space. Prediction of a workpiece machining error can be obtained at a calculation of material deformations of the technological equipment elements, which lead to changing of the linear and diametrical sizes of the part at the action of axial or radial forces.

Materials and methods

The calculation of stress condition of the deformed metal bushing was performed by the numerical simulation. The three-dimensional model of the bushing (the Fig. 1) was imported into the *Comsol Multiphysics* software environment.

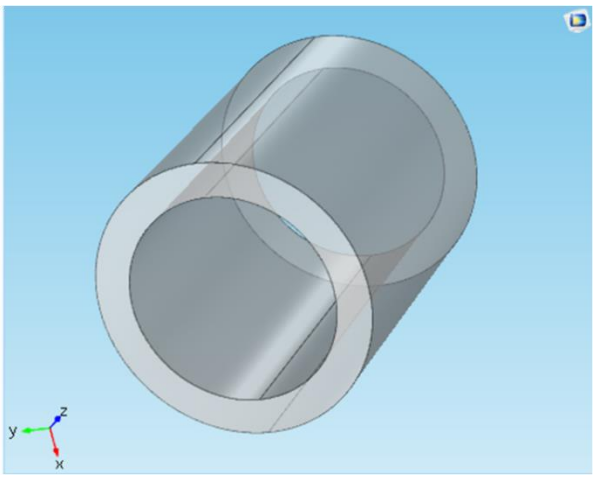


Figure 1 – The solid model of the bushing.

Constant distributed force along the *X* and *Y* coordinate axes acted on an outer cylindrical surface of the model. The bushing was based and fixed for the inner surface. The bushing does not move and does not rotate along the *Z*-axis. The bushing material is steel 1045 (solid, annealed). Changing of the basic properties of the bushing material depended on temperature. The computer write of the properties of the bushing material is presented in the table 1.

Table 1. The basic properties of the bushing material.

Description	Value
dL	(dL(T[1/K]) - dL(Tempref[1/K]))/(1 + dL(Tempref[1/K]))
CTE	CTE(T[1/K])[1/K]
Thermal conductivity	{{k(T[1/K])[W/(m*K)], 0, 0}, {0, k(T[1/K])[W/(m*K)], 0}, {0, 0, k(T[1/K])[W/(m*K)]}}
Resistivity	{{res(T[1/K])[ohm*m], 0, 0}, {0, res(T[1/K])[ohm*m], 0}, {0, 0, res(T[1/K])[ohm*m]}}
Syt	Syt_solid_annealed_1(T[1/K])[Pa]
Coefficient of thermal expansion	{{(alpha(T[1/K])[1/K] + (Tempref - 293[K])*if(abs(T - Tempref)>1e-3, (alpha(T[1/K])[1/K] - alpha(Tempref[1/K])[1/K])/(T - Tempref), d(alpha(T[1/K]), T)[1/K]))/(1 + alpha(Tempref[1/K])[1/K]*(Tempref - 293[K])), 0, 0}, {0, (alpha(T[1/K])[1/K] + (Tempref - 293[K])*if(abs(T - Tempref)>1e-3, (alpha(T[1/K])[1/K] - alpha(Tempref[1/K])[1/K])/(T - Tempref), d(alpha(T[1/K]), T)[1/K]))/(1 + alpha(Tempref[1/K])[1/K]*(Tempref - 293[K])), 0}, {0, 0, (alpha(T[1/K])[1/K] + (Tempref - 293[K])*if(abs(T - Tempref)>1e-3, (alpha(T[1/K])[1/K] - alpha(Tempref[1/K])[1/K])/(T - Tempref), d(alpha(T[1/K]), T)[1/K]))/(1 + alpha(Tempref[1/K])[1/K]*(Tempref - 293[K]))}}
Heat capacity at constant pressure	C(T[1/K])[J/(kg*K)]
Electrical conductivity	{{sigma(T[1/K])[S/m], 0, 0}, {0, sigma(T[1/K])[S/m], 0}, {0, 0, sigma(T[1/K])[S/m]}}
Density	rho(T[1/K])[kg/m^3]

Description	Value
TD	TD(T[1/K])[m^2/s]

Results and discussion

Stress condition at a point of the volumetric deformed body can be presented by a set of normal and tangential stresses acting along the coordinate axes. The visual model of mechanical stress of material is obtained by the computer simulation of the plastic deformation process of the bushing model. The vector field of principal stress volume in the bushing model after removing of load is presented in the Fig. 2. The vectors of principal stress volume directed from the each finite element of the bushing model. The vectors distribution of principal stress volume of the bushing material along the *X*, *Y* and *Z* coordinate axes after plastic deformation is presented in the Fig. 3.

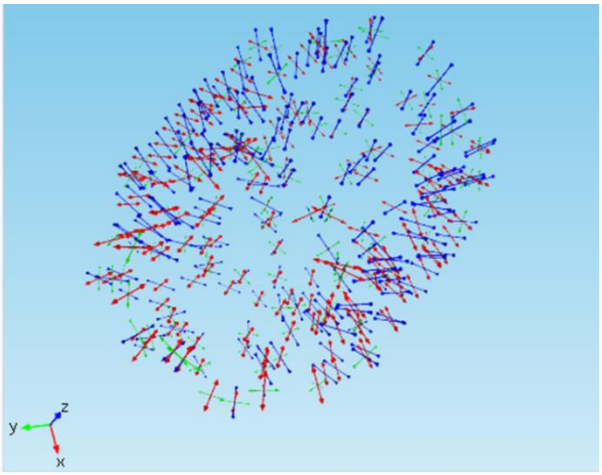
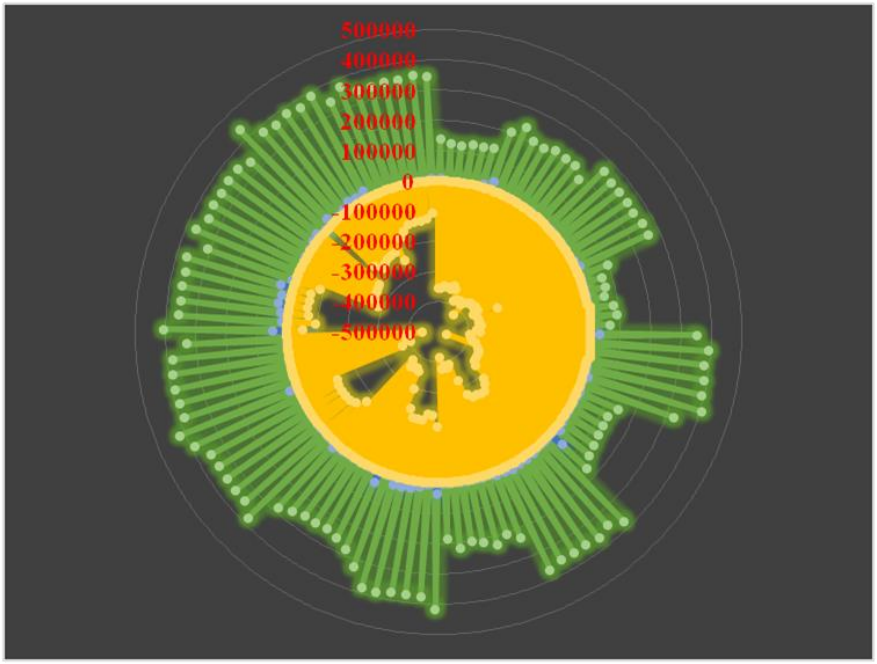


Figure 2 – The vector field of principal stress volume in the deformed bushing model.



— vector *X* **— vector *Y*** **— vector *Z***

Figure 3 – The vectors distribution of principal stress volume of the bushing material along the coordinate axes.

The vectors of principal stress volume of material along the *X* and *Y* axes act in the coordinate plane, which it is perpendicular to the axis of the bushing model (the diametrical sizes). The vectors of principal stress volume of material along the *Z*-axis act in the coordinate plane, which it is parallel to the axis of the bushing model (the linear size is length). Tensile deformation of material occurs at positive

values of principal stress volume along the *X*-axis. Material is compressed at negative values of principal stress volume along the *Z*-axis. Stretching and compression of the bushing material are observed along the *Y*-axis. Significant values deviations of stress along the *Z*-axis and vice versa were observed in the volume of the bushing model material, where uniform stress distribution along the *X*-axis was determined.

Conclusion

1. The bushing material along the *X*-axis is subjected to stretching, and material along the *Z*-axis is subjected to compression. This indicates about increasing of the diametrical size and decreasing of the bushing length. In this case, these types of deformation are not uniform in value in all volume of the bushing material.

2. The values ratio of the stress vectors along the *X* and *Z* coordinate axes corresponding to maximum stretching (compression) is 8:10. The values ratio of the stress vectors is 9:10 at minimum stretching (compression) on the same coordinate axes.

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Impact Factor:					
	ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 0.829	РИНЦ (Russia) = 0.156	PIF (India) = 1.940
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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

SECTION 13. Geography. History. Oceanology. Meteorology.

R. Kravchenko
Ph.D., Universidad UTE,
Quito, Ecuador
roman.kravchenko@ute.edu.ec

M. Rosero
Universidad UTE,
Quito, Ecuador
mary.rosero@ute.edu.ec

ERODED SOILS OF A EASTERN EXPOSURE SLOPE IN THE NORTHERN PART OF QUITO, ECUADOR

Abstract: *The eroded soils of the eastern exposure slope with a steepness of 15-25 ° in the equatorial Andes were studied. Organic matter in soils does not exceed 1.06%. It is established that the content of organic matter depends on the site and the shape of the slope. Concave parts, as well as a sector in the upper part of the slopes, are characterized by the presence of soils with the highest content of organic matter. Whereas the soils on the convex parts of the slope contain a smaller percentage of organic matter. All parts of the slope have a low content of Nitrogen and Phosphorus.*

Key words: *soil, slop, erosion, organic matter.*

Language: *English*

Citation: Kravchenko, R., & Rosero, M. (2018). Eroded soils of a eastern exposure slope in the northern part of Quito, Ecuador. *ISJ Theoretical & Applied Science, 11 (67),* 205-208.

Soi: http://s-o-i.org/1.1/TAS-11-67-33 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.33

Introduction

The soil of the slopes in the areas of humid climate develop under the conditions of active influence of water-erosion processes. Within one site it is possible to observe differences in the properties of eroded soils, depending on the shape and steepness of the slope. A number of papers have been devoted to the study of these features [1- 7].

The eroded sloping soils of the equatorial Andes are not studied thoroughly, especially considering the different approaches to classification. In this geographic area there is a very significant diversity of natural conditions, even in geographically close areas located at the distance of the first kilometers and even hundreds of meters. Soil-forming rocks, microclimate and water regime can vary.

The purpose of this work is a comparative characteristic of eroded soils, depending on the angle of inclination and the shape of the slope of the eastern exposure in the equatorial Andes.

Materials and methods

Large-scale topographic maps and aerial photographs were used to select the key area. A field study was conducted in 2018. The DGT 10 CSTBERGER / Digital theodolite was used to study the morphometric characteristics of the slopes soil samples were taken. Soil analysis was performed at the Agrocalidad Laboratory in Quito. Meteorological indicators are obtained according to the “Instituto Nacional de Meteorología e Hidrología del Ecuador”.

Results and discussion

The study was conducted in the mountain-equatorial part of the Andes, in the area located on the northern outskirts of the city of Quito, near the village Zabala. The altitude is 2400 - 2800 meters. The slopes are covered with modern loose, easily eroded sediments. Significant elevation differences and slope angles create the necessary conditions for the formation of both downcutting and sheet erosion forms. General view of the slope is presented in the photo.

Figure 1. Study area. Eastern exposure slope.

The average temperature is 14 ° C and varies slightly over the months. Atmospheric precipitation falls in liquid form, with a significant proportion of heavy rain. The average annual rainfall is about 700 mm. The maximum amount of precipitation is marked in April. The minimum precipitation falls in August. In general, the territory is characterized by favorable prerequisites for the development of erosion processes.

Table 1. SOIL CHARACTERISTICS OF THE ESTERN–EXPOSURE SLOPE

Parameters		Sector 1 Slope angle 18° Distance from the watershed divide 34 m Straight shape of the slope	Sector 2 Slope angle 24° Distance from the watershed divide 103 m Straight shape of the slope	Sector 3 Slope angle 25° Distance from the watershed divide 158 m Convex shape of the slope	Sector 4 Slope angle 20° Distance from the watershed divide 215 m Concave shape of the slope	Sector 5 Slope angle 24° Distance from the watershed divide 336 m Convex shape of the slope	Sector 6 Slope angle 25° Distance from the watershed divide 458 m Straight shape of the slope	Sector 7 Slope angle 15° Distance from the watershed divide 748 m Concave shape of the slope
Organic matter (%)		1,01	0,95	0,66	1,06	0,70	0,90	0,57
Nitrogen (%)		0,05	0,05	0,03	0,05	0,04	0,05	0,03
Phosphorus (mg/kg)		9,6	9,7	9,5	6,7	6,4	7,3	6,1
Potassium (cmol/kg)		0,45	0,25	1,39	0,28	0,72	0,28	1,01
Calcium (cmol/kg)		7,07	5,53	15,65	6,03	15,44	7,70	20,06
Magnesium (cmol/kg)		3,50	1,70	2,52	1,50	2,02	1,27	2,28
Iron (mg/kg)		45,1	34,5	23,1	34,3	23,4	28,5	22,1
Manganese (mg/kg)		1,47	1,77	0,72	0,76	0,53	1,14	0,48
Copper (mg/kg)		8,85	12,80	4,17	8,21	4,30	7,28	4,10
Zinc (mg/kg)		<1,60	<1,60	<1,60	<1,60	<1,60	<1,60	<1,60
pH		7,87	7,68	9,07	8,33	9,30	8,12	8,40
Textures	Sand (%)	62	66	46	70	60	62	56
	Silt (%)	26	24	46	20	30	30	34
	Clay (%)	12	10	8	10	10	8	10

The most part of the slope has a straight shape, with separate sections of convex and concave shapes. The slope is steeply inclined. In a slope ecosystem, the following plant species are typical: Croton wagneri, Dodonea Viscosa, Agave americana L., Kalanchoe fedtschenkoi, Festuca arundinacea. Also some specimens of woody vegetation such as Eucalyptus globulus Labill are present in the upper part of the slope.

The table shows the distance of each sampling point from the watershed divide.

The criterion for selecting the points of study was the nature of the relief of individual parts of the slope. In general, the soil content of the slope is characterized by a low content of organic matter.

A number of studies [8 - 10] were devoted to the study of erosion processes in this area. The lands of the studied slope are not used in agriculture widely represented. A line that does not intersect the gully forms was selected for the soil study. The length of the studied slope is 800 meters. The sampling points for soil samples are located in different parts of the slope, from the upper part near the watershed divide to the foot of the slope. The table presents the results of the study.

The highest rates of 1.06% were found in sector 4 on the concave slope. Probably, the concave shape of this part of the slope affects the dynamics of erosion-accumulation processes with more favorable accumulation conditions of the washed-off material. On the contrary, in areas of a slope with a convex shape (sectors 3 and 5) a reduced content of organic matter was recorded - 0.66 and 0.70%, respectively. A more active impact of soil erosion should be typical for these areas. It should be noted that a relatively high content of organic matter of 1.01% was found in sector 1. Apparently, it is influenced by the location of the site in the upper part of the slope, near the watershed with an insignificant volume of surface flowing water, which does not yet have sufficient energy to influence sheet erosion. Sector 7 at the bottom of the slope is worth a separate mention. This area has a concave shape and an inclination angle of 15 °, the minimum of all the parts of the slope studied. However, it is here that the lowest organic matter content is found - only 0.57%. This is due to the characteristics of soil-forming rocks. In the lower part of the slope there are numerous outcrops of rocks. The soil is stony and vegetation is very sparse, which has a negative effect on the accumulation of organic matter.

Soil of all parts of the slope is characterized by a very low Nitrogen content. If we use the recommendations for the interpretation of the results developed in the "Agencia Ecuatoriana de Aseguramiento de Calidad Agro", then for the mountainous region of Ecuador, a low content of Nitrogen is considered to be up to 0.15%. Content from 0.16 to 0.3% is already estimated as average. The soils of the studied slope contain only up to 0.05% Nitrogen.

A low Phosphorus content was also found for all parts of the slope.

The soils are alkaline. The potassium content is medium or high (over 0.4 cmol / kg). The maximum content of 1.39 cmol/ kg is noted for sector 3 - the convex part of the slope with a low content of organic matter. In all parts of the slope, a high content of Calcium is observed, increasing on the convex parts of the slope, reaching maximum values of 20.06 cmol / kg in stony soils of the lower part of the slope.

The soils of the slope are characterized by a high content of Magnesium and Copper. Low Zinc and Manganese content is detected. For most sectors, the average Iron content is confirmed, except for the high content at the top of the slope.

Conclusions

The soils of the eastern slope surveyed in the equatorial Andes are eroded and not fertile. The content of organic matter does not exceed 1.06%. It is established that the content of organic matter depends on the site and the shape of the slope. Concave parts, as well as a sector in the upper part of the slopes, are characterized by the presence of soils with the highest content of organic matter. Whereas the soils on the convex parts of the slope contain a smaller percentage of organic matter. All parts of the slope have a low content of Nitrogen and Phosphorus.

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Impact Factor:					
	ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

U.M. Mukambetov
Lecturer of the Department of Civil, Labor and Environmental Law of the Faculty of Law of KNU named after Zh. Balasagyn

SECTION 32. Jurisprudence.

BENEFICIARY AS ONE OF THE SUBJECTS OF THE FIDUCIARY MANAGEMENT AGREEMENT

Abstract*: The article analyzes the basic concepts of the essence and nature of the beneficiary; primary intents of the beneficiary are revealed; Civil issues for the formation and implementation of contractual obligations on trust administration of property were identified.*

Key words*: Beneficiary, fiduciary management agreement, the trustor, discretionary manager.*

Language*: English*

Citation: Mukambetov, U. M. (2018). Beneficiary as one of the subjects of the fiduciary management agreement. *ISJ Theoretical & Applied Science, 11 (67),* 209-211.

Soi: http://s-o-i.org/1.1/TAS-11-67-34 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.34

Fiduciary Management Agreement is an agreement whereby one party (the trustor) transfers the property to the other party (discretionary manager) for a certain period in confidential management, and the other party undertakes to manage this property in the interests of the trustor or the person (beneficiary) specified by him

The essence of the agreement is expressed in the fact that one person (the trustor) transfers to another person (discretionary manager) property for more effective management in his own interests or the interests of another person (beneficiary). The need for such a transfer can be determined by the lack of experience or inability of the owner to effectively use the property belonging to him; the desire to use professionals for this; as well as his desire, without any special care for himself, to provide material assistance to third parties at the expense of his property, while remaining its owner.

Also, the institute of trust administration of property can successfully be used in order to pool capital. In these cases, several persons - trustors transfer their property into confidential management of one person who uses this property in the interests of all trustors.

The purpose of the agreement is to increase income, property, and maintain it in proper condition by transferring the management to the competent person. By concluding an agreement, the trustor is thus free from management.

The transfer of property in confidential management does not entail the transfer of ownership of it to the discretionary manager.The specificity of the institute of trust is that the property right in this case seems to be split: one part of the owner's credentials, namely, management and disposition of the property, belongs to one person (discretionary manager), and the other part is entitled to receive benefits from the operation of property including income generation, to another person or persons (trustor or beneficiary). This "split" is appeared in the whole structure of relations connected with the trust. [1, p 70].

The Parties *of the agreement are*:

- *The trustor* is the person transferring the property to the management of the other party. The trustor may be:

–property owner;

–a person who has the right of lifetime inheritable possession of a land plot;

–authorized government body - in relation to government-owned property;

–enterprise based on the right of economic management - with the permission of the owner;

–family and child support departments;

–testamentary executorand other persons specified in the law.

- *Discretionary manager* –the person performing management in the interests of the trustor or beneficiary. The discretionary manager may be an individual entrepreneur or a commercial organization, with the exception of a state enterprise.

In cases if confidential management is established by the Family and Children Support

Department or the testamentary executor, the discretionary manager may be a citizen who is not an entrepreneur, or a non-commercial organization, with the exception of the institution. The discretionary manager cannot be a government body orlocal self-government body.

So, there are two subjects in the legal relationship on confidential management: the trustor and the discretionary manager. In some cases there are may be three of them (however, the parties to the agreement are only the trustor and the discretionary manager):

- *Beneficiary* –the person in whose interests the property is managed. It can be any subject of civil legal relations, except for the discretionary manager. If there is a beneficiary in the agreement, then this agreement is in a favor of a third party.(art.430 CC) [2, p. 45].

One of the subjects of trust administration of property is the beneficiary. Benefits in confidential management can receive not only the owner of the property transferred in trust administration of property, but also a third party - the beneficiary. The range of possible beneficiaries under a fiduciary management agreement is very wide, since the agreement is concluded on various special grounds. Thus, the beneficiary in the agreement based on the grounds stipulated by the Civil Code of the Kyrgyz Republic can be (art. 851 CC KR): child (art. 63 CC KR), minor aged 14 to 18 years (art. 851 CC KR); AIP (art.64 CC KR), partially incapacitated (art. 65 CC KR), missing person (art.77, 78 CC KR), heirs (art.1125 CC KR) [3, p. 70; 4, p. 372].

Some authors believe that "the beneficiary, if he is not the owner of the transferred property, is not a party to the agreement" [5, p. 77]. For example, it is puzzling that many authors believe that the trustor, who concludes an agreement in his own interests, becomes a beneficiary.So, Yu.V. Romanets writes that "the trustor himself can act as a beneficiary, establishing confidential management in his favor" [6, p. 81]. According to S.P. Grishaev, "the fiduciary management agreement can be both an agreement in favor of its participants, and an agreement in favor of a third party". In the first case, the trustor becomes the beneficiary under the agreement, in the second case the person appointed by him" [7, p. 11]. Within the framework of this institution, the legislator clearly determines that the beneficiary, only in case if he is not the owner of the property, under the fiduciary management agreement acquires only the right to demand fulfillment of the obligation in his favor, but not obligations.

Thus, the material term is a clear designation in the agreement of the trustor or beneficiary (clause 1 of article 850 of the Civil Code of the Kyrgyz Republic), in addition, the discretionary manager provides a report on its activities to both the trustor and the beneficiary (clause 3 of article 862 of the civil code Kyrgyz Republic). However in par. 3 of the clause 4 of the art. 857 of the Civil Code of the Kyrgyz Republic stated that "if the beneficiary is not defined in the contract, the beneficiary is the trustor". In this regard, we believe that since the trustor becomes a beneficiary under this agreement, it is necessary to apply to him all the rules on the beneficiary under the fiduciary management agreement. Consequently, the agreement must also be terminated in the event of the death or liquidation of the trustor, which contradicts the institution of trust administration of property. In this connection, L.Yu. Mikheeva should be supported, who believes that "the trustor becomes a beneficiary in the agreement, but the rules on termination of the agreement for the above reasons should not be applied to it" [8, p. 71]. Indeed, such reservations cannot be recognized as valid by law when the issue of an extended interpretation of a concept is being the subject of decision. It seems that the legislator also does not give grounds for this. As A. B. Babaev noted, "by recognizing as a beneficiary any person who has at least some property interest in the transaction, we will expand the circle of beneficiaries to unknown limits" [9, p. 113]. One more interesting position of M.I. Braginsky and V.V. Vitryansky regarding this issue:"The idea that in the case of concluding a fiduciary management agreement the owner-trustor does not indicate the beneficiary, the right to receive benefits from the trust administration of property belongs directly to its trustor as such (and not to the trustor as beneficiary) and constitute the content of the uniform trust management obligation property, without forming another (separate) legal relationship between the discretionary manager and the beneficiary (represented by the trustor) " [10, p. 849].

Thus, the analysis allows us to identify several features that characterize the beneficiary. First of all, his interest is related to income generation. As a general rule, confidential management is carried out by an individual entrepreneur or a commercial organization; therefore, confidential management is made for commercial purposes. In addition to the fact that the interest of the beneficiary is related to the income generation, it is also associated with an increase in trusted property or its preservation. This rule is fixed in paragraph 2 of art. 37 of the Civil Code of the Kyrgyz Republic (disposition of the property in the ward) - "the actions of thediscretionary manager should not lead to a reduction in the property in the ward, as, indeed, any other beneficiary under the agreement of trust administration of property" [11, p. 263].

Conclusion

From the above mentioned it can be concluded that the concept of the interest of the beneficiary is not broader than the concept of benefit to the

beneficiary. Because it is different and suitable exactly to the institute of trust administration of property, the meaning of which lies in the honest management of property, i.e. in activities that are very difficult to manageby other parties of the agreement. But this activity can be made dependent on the interests of the beneficiary by setting criteria for due diligence, non-observance of which may lead to liability of the discretionary manager.

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Impact Factor:					
	ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 0.829	РИНЦ (Russia) = 0.156	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 5.015	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 5.667	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

U.M. Mukambetov
Lecturer of the Department of Civil, Labor and Environmental Law of the Faculty of Law of KNU named after Zh. Balasagyn

SECTION 32. Jurisprudence.

DISCRETIONARY MANAGERAS ONE OF THE SUBJECTS OF THE FIDUCIARY MANAGEMENT AGREEMENT

Abstract: *The article analyzes the basic concepts of the essence and nature of thediscretionary manager; primary intents of the discretionary manager are revealed; Civil issues for the formation and implementation of contractual obligations on trust administration of property were identified.*

Key words: *Discretionary manager, the trustor, beneficiary, the object, the subject, the fiduciary management agreement.*

Language: *English*

Citation: Mukambetov, U. M. (2018). Discretionary manageras one of the subjects of the fiduciary management agreement. *ISJ Theoretical & Applied Science, 11 (67),* 212-215.

Soi: http://s-o-i.org/1.1/TAS-11-67-35 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.35

Introduction

There are two parties in the fiduciary management agreement: the trustor and the discretionary manager. Other subjects of the fiduciary management agreement (for example, beneficiary) are not parties to this agreement.As a general rule, the parties of an agreement may change, while the agreement itself and its content remain unchanged.The main issue is assignment of claims and transfer of debt. It should be noted that these grounds for changing the obligations of persons do not always apply to relations of the confidential management. The reason of this is the special fiduciary nature of the agreement. When the agreement party changes, this may cause the termination of legal relations, if the relationship between new counterparties is not based on trust.

Let's consider in more detail who, in accordance with the current legislation, can participate as a subject of the fiduciary management agreement.

Materials and Methods

First of all, the subjects of these legal relations are its parties: the trustor and the discretionary manager. It should be noted that the trust administration of property can be established on the basis of any form of ownership - state, municipal or private. Therefore, any owner can act as a trustor. E.A. Sukhanov adds that "trustors can also be not property owners — subjects of executory and exclusionary rights".[1, p. 11].

Since the object is not only an item of property, but also rights that have monetary value, the founders can be holders of these rights. It was established in the Civil Code of the Kyrgyz Republic that "trust administration of property can be established as a consequence of need for permanent management of the property of the ward" (art. 851 Civil Code of the Kyrgyz Republic) [2, p. 372]. In this case in accordance with art. 73 of the Civil Code of the Kyrgyz Republic, if it is necessary, the management of real estate and movable valuables of the ward, the custody and guardianship agency conclude with the manager defined by this body an agreement on the deed trust of such property. In such cases the trustor is the custody and guardianship agency. Further, according to art. 78 of the Civil Code of the Kyrgyz Republic, "the property of a citizen recognized as missing it is transferred to a person on the basis of a court decision, which is determined by the custody and guardianship agency and acts on the basis of a deed of trust concluded with this agency". As we can see, in accordance with civil law in all the above mentioned cases, the fiduciary management agreement must be concluded by the custody and guardianship agency.

However, as noted by L.Yu. Mikheeva, "today it is almost impossible to realize it, because the extraordinary majority of such authorities are not subject to civil law (for example, legal entities) or do

not have specific authority to conclude such an agreement on behalf of the municipality [3, p. 120].

In accordance with paragraph 1 of art. 858 of the Civil Code of the Kyrgyz Republic "a fiduciary may be an individual entrepreneur or a commercial organization. A unitary enterprise, a government body and an agency of local self-government cannot be discretionary managers, since the purpose of their activity contradicts the essence of the activity of confidential management" [2, p. 375].

Discretionary manager may be an individual or legal person. In our opinion, taking into account the specifics of the activity and the peculiarities of public liability, the discretionary manager must have a certain property fund in order to be able to fulfill all of his obligations. The minimum amount of such a fund is established by civil law. We believe that this fund should be at least 100 times the minimum wage. From time to time the fiduciary must confirm his ability to pay debts. [4, p. 74].

As it was already noted, discretionary manager cannot be government or municipal authorities, because in some cases the manager is responsible for the transferred property by confidential management agreement. In addition, the purpose of confidential management is, as a rule, to gain profit from it, which contradicts the goals of such authorities.

If confidential management is carried out on the grounds provided by law, then "the discretionary manager may be a citizen who is not an entrepreneur or a non-commercial organization, with the exception of an institution" (par. 2 of the part. 1 of the art. 858 of the Civil Code of the Kyrgyz Republic). The rights acquired by the manager in the course of confidential management of the property are included in the transferred property, and the obligations arising from such actions are exercised at the expense of this property.

Thus, the discretionary manager is an individual or legal entity that can carry out property management activities in the interests of the trustor or beneficiary [5, p. 123].

Based on the literal interpretation of this norm, it turns out that confidential management is the management of property in the interests of the trustor or the beneficiary. But based on genuine interpretation, it is impossible to determine which set of actions (minimum and maximum) belongs to the discretionary manager, and what rights and obligations are transferred to him, if he can dispose of the property, or only management covers ownership and use, and perhaps only use or just ownership [3, p 128].

"The actions of the discretionary manager must comply with the "rule of a rational person"- says V.D. Milovidov, [6, p. 11]. In accordance with this rule, the discretionary manager must make decisions wisely and carefully in accordance with the conditions in which the supposed person will manage his property and conduct his own business in order to effectively distribute capital, expecting to gain a certain profit, while maintaining the original value of the trust capital.

Based on the foregoing, it can be concluded that the discretionary manager is engaged in initiative activities in the exercise of the subjective rights and obligations of others, which may be aimed at preserving, improving, multiplication of the property transferred to the trust administration of property; his activities are aimed at reducing or preventing losses from the use of this property by exercising the credentials of possession, use and disposal in the amount established by the trustor.

The fiduciary management agreement affects not so much the focused structure of the emerging legal relations, but rather the recognition of income and expenditure in implementation of the relevant activity, the resolution of the issue of property liability. The sign "D.U." means a specific activity, but does not individualize the subject who performs this activity. (par. 3 of the art. 858 of the Civil Code of the Kyrgyz Republic).

Thus, the discretionary manager may entrust the other person to carry out property management on his own behalf, but only with the consent of the trustor, which is specifically stipulated in the agreement; or if such consent is obtained in writing; or, as noted in the law, "he is forced to do so due to circumstances in order to ensure the interests of the other party and is unable to receive instructions from the trustor within a reasonable time. In this case, the discretionary manager is responsible for the actions of his chosen attorney as for his own" (art. 862 of the Civil Code of the Kyrgyz Republic). Attorney of the discretionary manager is the person to whom the discretionary manager entrusts the execution on his behalf of the actions necessary to manage the transferred property.

Conclusion

Thus, we can conclude that the discretionary manager is a "formal" owner who can use the tripersonality of the rights of the owner (if the property is provided in the fiduciary management agreement) only in the interests of the trustor or beneficiary under the fiduciary management agreement and in no circumstances in his own interest. In addition, it should be noted that the scope of validity of the discretionary manager are not explicitly provided for by the law, however, there are certain limits and restrictions applicable to the actions of the discretionary manager [7, p. 222].

Separately, it should be paid attention to the discretionary manager in the person of the custody and guardianship. If the purpose of trust administration of property is to gain a profit by a discretionary manager, then in case of concluding a fiduciary management agreement of the ward (minor,

incapable), the main purpose of discretionary management is to protect his rights and interests. First of all, it is connected with the essence of the institution of guardianship, which the authors refer to as "the way of filling the capacity of citizens" [8, p. 493], "the implementation of state protection of the individual" [9, p. 143], "the arrangement of the person, the arrangement of his fate and property" [10, p. 103]. Based on this, guardianship and custody are created to protect the ward, and confidential management - to protect his property. This statement is not reflected in practice, since most of the guardians and custodies perform both functions.

Thus, in accordance with the law, the purpose of the custody and guardianship agency is not only to protect property rights, but also personal non-property rights of the ward, as well as to protect the rights. There are cases when a minor orphan may have an enterprise or real property, vehicles, securities and other property that has been transferred to him by law. One of the ways to protect the property rights of the ward, if he owns real estate or other movable valuable, is to conclude fiduciary management agreement, aimed at ensuring the safety of the property of the ward.

In accordance with paragraph 29 of the Custody and Guardianship Regulations, guardians, on behalf of the wards and in their interests, manage the property and valuables of the wards. "They alienate, keep and dispose of the sums of money and other valuables belonging to the ward, make all the necessary transactions on their behalf and in their interests in the manner permitted by the legislation of the Kyrgyz Republic. The custodian and the guardian are obliged to take care of the transferred property of the ward as their own, not to allow a decrease in the value of the property of the ward. The execution of these duties by the custodian and the guardian is carried out at the expense of the property of the ward " [11].

The status of the custody and guardianship agency in such legal relations, as correctly indicated by E.S. Pyanyh, "is dual in its nature: on the one hand, the custody and guardianship agency is part of the mechanism with the proper authorization. On the other hand, it is a party to the fiduciary management agreement, i.e. subject, deprived of credentials, acting on a fifty-fifty basis in civil law relations" [12, p. 14]. This duality of the status of the custody and guardianship agency determines the specificity of the sphere of rights and obligations under the fiduciary management agreement of the ward. For example, as the trustor, the custody and guardianship agency does not have the right to demand compensation for damage caused to the property by the discretionary manager, as well as to receive property after termination of the confidential management. This can be claimed only by the owner of the property in whose interests the agreement has been concluded.

The requirements for the discretionary manager of the ward are much softer, than for the discretionary manager appointed in a general manner. In this case, it is important to focus on the use of the property, which is ensured by a number of restrictions and additional obligations imposed on the discretionary manager. In accordance with art. 73 of the Civil Code of the Kyrgyz Republic "in the case of exercising the authority by the manager to manage the property of the ward, he is subject to the rules provided for by clause. 2 and 3 art. 72 of the Civil Code of the Kyrgyz Republic" [13, p.74].

Thus, the discretionary manager under the fiduciary management agreement of the person in respect of whom custody and guardianship is established does not have the right "without prior permission of the territorial division of the authorized government body to perform, and the guardianship - to agree to the conclusion of transactions on alienation, including exchange or donation of property of the ward, renting it (rent), for uncompensated use or as a pledge, transactions involving the waiver of rights belonging to the ward, the division of his property or the separation of shares from it, as well as any other transactions entailing a reduction in the property of the ward" [13,p.75]. This norm establishes the increased responsibility of the discretionary manager and provides supplementary guarantees for the security of the property of the ward transferred to the confidential management [14, p.265].

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Impact Factor:

ISRA (India)	= **3.117**	**SIS** (USA)	= **0.912**	**ICV** (Poland)	= **6.630**
ISI (Dubai, UAE)	= **0.829**	**РИНЦ** (Russia)	= **0.156**	**PIF** (India)	= **1.940**
GIF (Australia)	= **0.564**	**ESJI** (KZ)	= **5.015**	**IBI** (India)	= **4.260**
JIF	= **1.500**	**SJIF** (Morocco)	= **5.667**		

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

SECTION 31.Economic research, finance, innovation, risk management.

QR – Issue QR – Article

Baxodir Abduganiyevich Xashimov
Candidate of economics, docent,
Tashkent state university of economics, Tashkent city,
Republic of Uzbekistan

Bakhtiyorjon Valisher ugli Adashaliev
master student,
Tashkent state university of economics, Tashkent city,
Republic of Uzbekistan

FOREIGN EXPERIENCE OF DEVELOPMENT OF THE REGIONAL EXPORT POTENTIAL

Abstract: *In this article have been discussed issues of increasing the export potential of the region. In particular, the author has studied the experience of developing the export potential of a number of countries, such as: Russia, the USA, Germany, Japan, Malaysia and others. In the second part of the article, the efficiency of the export-oriented model of foreign countries is analyzed.*

Key words: *export, export potential, small business, strategy, economics.*

Language: *English*

Citation: Xashimov, B. A., & Adashaliev, B. V. (2018). Foreign experience of development of the regional export potential. *ISJ Theoretical & Applied Science, 11 (67),* 216-222.

Soi: http://s-o-i.org/1.1/TAS-11-67-36 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.36

Introduction

As a result of measures taken on the basis of organization of work in Uzbekistan, focused on a specific result, the rate of economic growth in 2017 was 5.5 percent, while exports increased by almost 15 percent. In 2018, the overall financial performance of exports is expected to reach $ 12.1 billion.

The meeting noted that over the past year, in order to support the export activities of entrepreneurs, a number of decrees and decrees were adopted that abolished the export of products on the basis of prepayments, compulsory sale of foreign exchange earnings, issue extra permits, and also expanded the use of tax incentives for participants in export activities.

At the same time, during the video-selector meeting, the priorities for expanding exports in 2018, identified in the Message of the President of the Republic of Uzbekistan to the Oliy Majlis, were again touched upon. It is necessary to ensure timely and high-quality implementation of the road maps for the implementation of the agreements reached during top-level visits to the Central Asian states, as well as to China, Russia, South Korea, the United States, Turkey and other countries that are our major partners. [14] It is also necessary to introduce a system of warning about the threat to security during the passage of customs inspection by business entities, to cancel out unnecessary licenses and permits issued by customs authorities that do not meet modern requirements. It is advisable to develop and implement a strategy to bring the annual export of fruits and vegetables up to 10 billion dollars. The meeting heard and discussed the reports of the heads of the complexes of the Cabinet of Ministers, ministries, departments, business associations and regions of the country. The irresponsibility and lack of initiative of the leaders of some industries and regions were seriously criticized, as a result of which there were omissions in the implementation of export programs.

Directions of development of non-primary export potential of the Russian economy

The export potential of the state is associated with the competitiveness of products, since only on a competitively tough international market can goods and services of the best quality and the best price be kept [10]. However, this statement is not fair in all cases without exception, since there are states and regions whose economy is based on the export of a

single strategic resource or product, that is, it is for the most part a mono-cultural export-oriented economy.

In the historical perspective, such a tactic of targeting the economy to export a unique resource can be justified [11]. The majority of states and regions, striving to bring the most competitive goods and services to foreign markets, are aimed at diversifying their exports, fearing excessive dependence on any single exported resource. Such dependence dramatically increases the vulnerability of the economy when a cheaper product or substitute service is consumed by other countries for economic reasons, or a substitute product or service with a comparable price or even more expensive, but widely consumed for political reasons. world markets [13].

Diversification of production, however, is not the predominant form for the development of the institute of sustainable development. Each of the parameters to expand the representation of goods and resources of origin of Russia should be based on the depth of processing and the formation of surplus value within the country's territory [12].

The most significant sector of export of services are tourism services rendered to foreign citizens and organizations, or by firms providing services to foreign citizens, including those outside of it. Traditionally, great attention is paid to the growth of inbound tourism: funds are invested in the tourism infrastructure, hotels for foreign tourists are being modernized, new tourist routes are being formed, not only recreational, but also cultural and entertainment, as well as ecological, including agritourism.

A feature of service exports is the possibility of their relatively rapid development and relatively low investment in their infrastructure, since it relies on the existing one. The experience of some foreign countries demonstrates the high efficiency of service exports, some of which form up to 70% of their GDP through the export of services. Accordingly, this sector and its development are a powerful reserve in relation to the growth of the export potential of the Russian Federation.

The problem of increasing the export potential of the Russian Federation in modern reading means increasing competitiveness to the level of demand for the bulk of the product being produced on world markets, verified by the ability to sell selected commodity items that are similar in their parameters to product positions sold on domestic markets [12].

Currently, most of the commodity and service positions produced in the Russian Federation cannot be sold on foreign markets without significant discount and effort, which is explained, on the one hand, by the discrepancy between the quality parameters of the produced and sold products to generally accepted world requirements, and, on the other hand, attitude to the quality of product and service positions from the prospective foreign partners.

It should be noted that the implementation of trade relations in the global economy implies the adoption of common qualitative parameters of products produced in any region of the world, with the main criterion of compliance being the possibility of selling manufactured products and their sufficient liquidity and relevance. Such an attitude to competitiveness means that the goods and services produced must either be quoted on the main world markets along with the goods sold there from other regions, or cause such interest from counterparties by their uniqueness that they will be ready to accept them with incomplete compliance with their barter processes quality parameters.

Accordingly, the task is formulating a number of conditions based on international experience, which allow to change the organizational and economic processes for the production of goods and services so that their quality parameters and price positions do not diverge to a large extent with those currently accepted at the main world economic platforms.

The characteristic features of the modern non-oil export potential of the Russian economy are:

• positioning strategy aimed at creating in the minds of target consumers a separate positive image of a product, service or brand;

• export commodity structure, where the largest item is "Mineral Products" is of the same type. At the same time, as is known, world prices for raw materials are less stable than for finished products;

•use of outdated forms of organization of work on the foreign market, coupled with the same type of development of foreign trade relations with their foreign partners;

• monopolization of foreign trade operations within a limited number of enterprises, a fall in the rates of foreign trade turnover of high-added products and a loss of positions in this field of activity in the international market;

• an increase in the volume of tolling operations that are associated with the processing of foreign raw materials with the subsequent export of finished products. In Russia, this type of operation is usually common in the aluminum and light industry. These and other facts indicate insufficient use of non-oil export potential of the economic structures of the Russian economy.

In connection with the increased production dependence of the Russian economy on imports and forced import substitution, we emphasize that the problem of the Russian industry should be considered not its dependence on imports as such and not the involvement of Russian industry in the system of international division of labor. It is a matter of technological backwardness of Russian production chains, which are forcibly interrupted by

manufacturers of products potentially in demand on the market, directly using high-quality imported raw materials, materials and components. The possibilities of import substitution and the weakening of production dependence on imports are determined by the modernization of production, that is, a radical activation of investment and business activities in the Russian economy.

As it was said, the main problem of the modern stage of the formation of the Russian economy is the reorientation of the economy from the raw type to the innovative type. The main means acting as the means of implementation for the innovation Russian policy are: concepts, legislative base and target programs, concepts. To select instruments that influence innovation development, it is necessary to take into account the difference in the adaptation period to innovations in the market, which are determined by factors of the economy, politics and various institutions [1].

Personnel problems, the lack of an own economic base for the production of innovative products, the technological nature of the differentiation of regions have a significant impact. The “vector” of development of the modern Russian economy suggests that for the complete assimilation and exploitation of the existing potential in the science and technology sector, it is necessary to purposefully form in Russia innovative systems and infrastructure of the elements of this system [11].

The economy of Russia, within the framework of the conducted economic structure, is an extremely complex complex of industries, of which industry occupies a special place. Industry is the main and leading branch of material production, the basis of production in economic terms. The industrial sector is constantly for itself and other sectors of the market, constantly generating means of production. In order to maintain the competitiveness of the domestic industry, one must clearly be able to determine the basic principles of innovation policy [10].

Political conditions for the development of industry should stimulate innovation, turn it into a source of economic development, a tool to increase production efficiency. One of the main principles of development and stimulation of innovation activity is the formation of an innovation infrastructure, that is, a set of subjects and objects of activity. The formation of the innovation infrastructure is the path to well-being in the economic and social terms for the Russian regions [10]. 90% of industrial enterprises that form the basis of industry are geographically located in the regions. This fact entails a number of problems for the implementation of the formation of the economy on the “innovation rails”. Let us highlight the main factors of problems in the implementation of innovation policy in industry:

1. Strategic factor. The problem is in methodological support and problems in the development strategy of an innovative economy. The combination of a full-fledged innovation program and its infrastructure, the presence of national economic traditions, world experience in the development of an innovative economy;

2. Lack of measures taken to ensure state support. Insufficient organization and financing, low level of use of the existing scientific and technical potential. As a result, the systematic deterioration of the innovation climate, infrastructure and the innovation system as a whole;

3. Legal factor. Economic development requires the introduction of a new "innovation" legislation on taxes at the federal level;

4. The lack of interest of the owners of enterprises in the development of innovative activities due to the passivity of industrialists to innovative activities, due to possible risk and other constraining factors.

To ensure the growing dynamics in the system and for individual elements of the economy, key factors may be innovations in organization, management, production, technology and other processes that are being implemented as leading ones. At the same time, the effectiveness of innovation development in the economic sector is influenced by the most popular methods of regulating innovation activity, including:

1. State support as a method of direct regulation of the activities of individual entities through the provision of preferential conditions, administration, or through investment support;

2. Synthesis of public and private partnerships as a tool for the implementation of innovative activity within the framework of business entities that are owned by the state;

3. Partnership of private organizations and the state as a tool for the development of innovations within the framework of business entities that are privately owned, with the condition that the state authorities can regulate the process;

4. Stimulation of innovation activity of economic entities, through the formation of mechanisms that allow private organizations to reduce the costs of innovation development.

The choice of the method of regulating the development of innovations and the choice of the type of the most effective for the formation of innovations is determined by the priority methods of managing innovative development, taking into account the individual characteristics of the region. These conditions allow to increase the level of investment attractiveness of the region.

Thus, the author has formulated directions for the development of non-oil export potential of the Russian economy. The main areas are: the development of tourism and educational clusters, the

development of innovation-active enterprises, based on state support, which will increase the volume of non-oil export trade in financial terms.

Efficiency of the export-oriented model in foreign practice

In world practice, as a rule, countries are developing proposals for reforming the economy in terms of creating favorable conditions for the growth of export potential. Solving this problem is key to achieving and implementing the overall and intermediate goals of economic reform. The most important factor determining the country's export potential is the presence of comparative advantages in the country. If at the early stages such factors of production as land, labor, capital came to the fore, at the present stage of development the decisive role is played by the country's ability to create the necessary conditions for economic development that stimulate the development of the missing factors. For example, Kazakhstan is characterized by a number of comparative advantages such as land and cheap labor, a lack of such a factor as capital. Another comparative advantage is cheap labor with a high level of education and training. However, experience shows that this comparative advantage is not used effectively enough. Therefore, in our opinion, it is necessary to study the experience of regulating foreign economic activity (FEA) in the countries of the world. The basis of legal regulation of regional foreign economic activity and the participation of regional entities in foreign economic relations (WEC) in most cases are based on the principles of federalism. In the United States, states are granted the right to create additional incentives to attract foreign investment by introducing appropriate tax breaks and simplifying the procedure for registering enterprises (corporations). States are also required to help finance exports from their territory. To this end, they are entitled to develop export development projects for small and medium businesses, assisting in obtaining export financing through the relevant state and private bodies. However, the states encourage and stimulate the development of barter, countertrade. Direct participants of foreign trade activities are provided with subsidies. Among other rights of the states are the creation of their foreign commercial missions that provide consulting and marketing services, participation in the formation and development of the regime of foreign trade zones formed on their territory, in regional programs for the development of local trade. In this case, the state can act as a direct participant in foreign trade relations and regulate its relations with foreign partners accordingly. In Germany, the so-called residual principle is enshrined in the regulation of foreign trade. In accordance with it, all legislative rights that are not assigned to the federation by the Constitution belong to the lands. At differentiation, the spheres of exclusive and competing law competence are fully formed. From the point of view of regulating foreign economic activity, the federation has exclusive rights to ensure the customs, currency and trade unity of the territory, freedom of commodity circulation, to sign trade and shipping agreements, and to make payment settlements with foreign countries. When concluding international treaties, if the latter affect the special situation of any land, its legal representatives should be heard in time and their opinion taken into account. Land governments are given the right to directly enter into agreements with subjects of foreign federations and relevant administrative-territorial units of foreign states, to assist corporations and firms in the development of their WES.

One of the main areas of participation of most countries of the world economy in the international division of labor is currently export orientation. The economic growth of many countries in Western Europe and Asia is a vivid example of integration into the world economy. Many countries have passed the path of restructuring the export structure. As the factors that determine the membership of countries for export orientation, is a number of ways of reproduction structures in their course to industrialization. A kind of mechanism for connecting to economic reform was in the industrialized new states, where the stakes were made on exports, state regulation of foreign trade, initially support for large businesses. [1]. Turning to the reforms of developing countries, the following features of their market development models can be highlighted. According to a number of theories, the economic difficulties of the peripheral countries were directly linked to participation in the international division of labor. In those countries where the course was set for maximum self-sufficiency in industrial goods, isolation from the world market began, almost no other sectors of the economy — agriculture and exports — developed. The lack of a diversified export base for backward agriculture has led to a sharp economic downturn (Brazil, India, Chile). At the same time, another group of states, which more correctly defined their economic development strategy, was able to adapt and survive in an unfavorable situation (Thailand, Singapore, Malaysia). Foreign experience shows that the efficiency of the export-oriented model is ensured by a dynamic change in the branches of export specialization, since the renewal of exports determines the increase in export of various products (raw materials, production and technological, science-intensive, information, services) in order to assert their positions in the world market and the nature of the forms of international cooperation. Thus, the United States, focusing on the development of the export base in the late XIX century. started with the export of cotton, wheat and other

agricultural products. By the beginning of the First World War, this country mainly exported finished products, while remaining a major supplier of raw materials. As already mentioned, the practice of developed countries shows that the efficiency of the export-oriented economy is achieved by creating products based on the country's competitive advantages. The theory of competitive advantage highlights the differences between countries and between national characters. Thus, analyzing the economies of industrialized countries, one can find large discrepancies in the models of national competitive advantages. Germany has a long-established position as a leader in the chemical industry, many types of manufacturing and processing machinery, the production of high-end machines and printing equipment. The United States in the production of detergents, medical equipment, airplanes, computers and computer software, and Japan in the production of transport equipment and the associated engineering, high-quality home appliances and printing equipment. In this case, a competitive advantage is created and maintained in close connection with local (regional) conditions: in the output of products; by territorial and geographical features; climatic signs; natural features; other features that differ from the specifics of other regions.

Therefore, the endowment of the country with some traditional factors no longer determines its competitive advantage. This is really confirmed by the new industrial countries like Hong Kong, Taiwan, the Philippines, Malaysia, Thailand, China, etc., where there is a rapid increase in production and high growth rates of foreign trade. The Japanese government, using a selective approach, used the following methodological techniques: –all industries were broken down by priority; –developed a scale of priorities, identifying four groups of industries that provide maximum, high, neutral, and negative priorities; metallurgy, the production of agricultural fertilizers, electricity. The second priority was provided by such industries as mining of iron ore, oil refining, asbestos, textiles and dyes, sea transport. The third group consisted of other industries, and such industries as silk, furniture, cosmetics, etc., came out with a negative priority. As is known, the Japanese government, from the beginning of the reforms of the 50s, paid close attention to the development of foreign trade. And in the late 70s. purposefully focused on the full encouragement of export efforts of companies, systems of measures to concentrate resources in relevant industries, restrictions on the development of other forms of foreign economic relations.

For this, the state provided preferential credit and tax regimes to export companies, helped them in creating foreign trade infrastructure abroad, and contributed to the development of a credit and financial support system. The model of export orientation was demonstrated in the newly industrialized countries by fundamental new trends in the behavior of the countries of the developing world, regardless of the sectoral, personnel and other characteristics of the countries. An analysis of trends in the export strategies of the NIS of the Asia-Pacific region makes it possible to highlight the following key positions among them: - the ability to overcome the crisis stage in its development in the early 1980s; - ensuring the balance of the national economy and high rates of economic development dynamism; - the ability to deploy a large-scale export strategy for industry specialization; - sufficient success of the implementation of economic restructuring; - target development of advanced, high-tech industries such as electronics, instrument engineering, electrical engineering through government regulation of the processes of stimulating or restraining the growth rates of production characterized by a high proportion of labor, energy and material costs; - radical reconstruction of traditional industries such as metallurgy, petrochemistry, etc., based on attracting new technologies, equipping with modern equipment, including information technologies, etc. Ultimately, all this contributed to the modification of the economic structure as a whole, not only of the given region, but of the world economy as a whole. Despite the existence of commonality in the penetration strategies of the countries of Southeast Asia to world markets, one can notice certain distinctive features in the process of actively borrowing technologies, their adaptation and improvement, aimed at promptly responding to the demands of a particular market, which reduce costs while improving quality than competitors. This is the key that provides access to the world market and an increase in exports of these countries [2]. Today, “new industrial countries” or “new industrial economies” repeat the achievements of Japan. NIS in East Asia are distinguished by a significant high level of economic development in comparison with the main group of developing countries and higher economic growth than industrialized countries. Similarly, the economic development strategies of Asian NIS relied on export-oriented production, primarily finished products. As a result, in world markets they have become the largest suppliers of footwear, clothing, textiles, consumer electronics, personal computers, cars and other types of high-tech products [3]. With economic prosperity, these countries, which began with the export of labor-intensive products (textiles), gradually switched to the production of material-intensive industries, and then to the production of manufactured goods and high-tech products. As a result, on the political map of the world, the balance of power in the countries of East Asia and Latin America is changing more and more.

Since the early 80s. The position of the NIS gradually changes not only in world economic relations, where they managed to find their "niches", but also in the modern world economy. Today, it already makes sense to talk about significant successes in the realization of regional advantages in agriculture. The importance of members of regional integration groups as subjects of agriculture in the international division of labor is determined by the fact that they are monopolists in the production of rubber, copra, palm oil, giving up to of this production, as well as pepper, pineapple. Their role in the production of bananas, rice, cocoa, sugar, tea, coffee, and wood harvesting is significant. It is noteworthy that the NIS countries have become net exporters of agricultural products, i.e. they export them more to the world market than they import. And despite the fact that natural conditions are largely similar in these countries, and their exports consist mainly of products of tropical origin, however, each country has its own specifics, due to both soil-climatic factors and historically prevailing conditions, also a development strategy.

Thus, the economic course aimed at the preferential development of industrial exports constituted an important integral part of the formation and development of the export potential of the countries in question. At the same time, the factor that the export potential is exclusively an object of state regulation played a special significance. However, given the unevenness of territorial proportions, many countries have taken special measures to prevent regional imbalances [5]. It should be noted that consideration of the formation and development of the export potential of the developed countries of the world with its modern features is of practical interest for Kazakhstan. Thus, it must be stated that the model of developing the competitiveness of the economy of any country will only be successful when it is built on the advantages determined by the national determinants of competitiveness and adapted to the impact of the external environment.

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Impact Factor:					
	ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 0.829	РИНЦ (Russia) = 0.156	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 4.102	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 5.667	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

SECTION 31.Economic research, finance, innovation, risk management.

Dinora Nurmamad qizi Ishmanova
PhD student of
Tashkent state university of economics,
Tashkent city, Republic of Uzbekistan

STRATEGY OF IMPROVING COMPETITIVENESS OF OIL AND GAS INDUSTRY

Abstract: *In this article discusses ways to improve the competitiveness of the oil and gas industry in Uzbekistan.A necessary condition for ensuring the competitiveness of enterprises is the implementation by the state of a special policy to support competition and regulation of monopolies.*

Key words: *strategy, competition, competitiveness, competitive relations, monopoly, state regulation.*

Language: *English*

Citation: Ishmanova, D. N. (2018). Strategy of improving competitiveness of oil and gas industry. *ISJ Theoretical & Applied Science, 11 (67),* 223-231.

Soi: http://s-o-i.org/1.1/TAS-11-67-37 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.37

Introduction

The oil and gas industry occupies an important place in the economy of our country. It acts as a key source of raw materials for the production of polymers, organic chemistry substances and nitrogenous mineral fertilizers necessary in many sectors of the economy.

Over the past two years, as a result of measures taken in the industry, gas production increased by 10 percent, natural gas supply by 15 percent, and liquefied gas — 1.6 times. During this period, the refineries produced an additional 204,000 tons of petroleum products; the domestic market's demand for gasoline and diesel fuel is being met. This year alone, the Shurtan and Ustyurt gas chemical complexes will produce polyethylene and polypropylene, the added value of which is 4 times higher than the cost of gas, by almost $ 700 million.

For the further development of the oil and gas sector until 2030, it is planned to implement 30 investment projects in the fields of geological exploration, production and deep processing of hydrocarbons totaling $ 36.5 billion.

Currently, the oil and gas industry is deeply processed to produce products with a high added value of only 2 percent of natural gas; there is every opportunity to increase this figure by 7 times over the next 10 years. In this regard, the meeting indicated that JSC "Uzbekneftegaz" should be given priority attention to oil and gas chemistry. In particular, there are opportunities for the production of new types of products - polystyrene, PET (polyethylene terephthalate) and synthetic rubbers based on aromatic hydrocarbons (benzene, toluene, xylene) and using the technology of producing olefins from methanol, as well as increasing the production of polyethylene and polypropylene. For the implementation of these projects it is necessary to attract about 9 billion dollars. To this end, a strategy for the implementation of projects with the attraction of direct investments from large companies in Europe, Japan, the United States, and the United Arab Emirates will be developed.

Literature review

Questions of the theory of competitiveness were investigated in the scientific works of F. Knight, K.P. McConnell, C.JI. Brue, J. Schumpeter, FA Hayek, I. Ansoff, M. Porter, M. Best, I. Kirchner, D. Prescott, S. Miller, G. Hamel, K.K. Prahalada Among the scientists of the CIS engaged in the issues of competitiveness, it should be noted Avdasheva, S. B., Shastitko, A.E., Kalmychkova [3], Grib SA. [4], Gurkov IB, Avramova EM, Tubalov B.C. [5], Kaipiev K. [6], Kershenbaum V.Ya. [7], Shushkin MA, Zabaeva M.N. [8], A.N. Zakharova, P.S. Zavyalova, Z.A. Vasilyev, I.B. Gurkova, A.P. Chelenkova, G.L. Azoeva, A.Yu. Yudanova, I.A. Spiridonov, MD Magomedova, P.P. Akhunova, I.V. Pilipenko, V.E. Khrapova and others. Topical issues of the oil and gas sector, production of equipment for the oil and gas industry, the service component was

studied in the scientific works of Nyo S. [9], S. Selin VS, Tsukerman VA, Vinogradov AN [10], Bjerkholt O., Lorentsen L ., Strom S. [11], Porter M., Ketels K. [12] and others.

Analysis and results

Today, one of the main strategic projects is the "Action Strategy for the Five Priority Development Areas of the Republic of Uzbekistan in 2017–2021, which refers to the reform of the public administration system and civil service through the decentralization of public administration, increasing the level of professional training, material and social security of civil servants, as well as a phased reduction of state regulation of the economy; introduction of modern mechanisms of public-private partnership aimed at improving the efficiency of mutually beneficial cooperation in the implementation of the tasks of the socio-political and socio-economic development of the country ". [1]

Microeconomic theory proves that monopoly leads to a loss of public welfare. Equilibrium price, exceeding marginal costs, distorts the relative price proportions and does not allow to achieve efficient allocation of resources between activities. The treatment of the economic content of competition policy can be narrow and broad. With a very narrow approach, competition policy is identified with antitrust regulation. However, antitrust regulation itself may extend to a more or less wide range of problems.

Antimonopoly policy in the narrow sense of the word - combating cartels, preventing restriction of competition from large companies, preliminary control of economic concentration transactions - proceeds from the fact that, regardless of the reason for the appearance of large sellers on the market, under certain conditions they have incentives and opportunities to restrict competition and redistributing the benefits of consumers in their favor. The central method of combating such practices is to recognize its illegal and impose sanctions for violating antitrust regulations. Sanctions for restricting competition are imposed after the establishment of the fact of illegal practices. In this context, antitrust policy in the narrow sense of the word refers to passive, rather than active types of economic policy. The policy of introducing competition in the natural monopoly industry interprets the losses described above in a slightly different way. In the sectors of natural monopolies, there is initially a contradiction between inter-production and allocation efficiency due to the fact that a large company has a cost advantage. If there were several sellers in the industry, the competition between them would provide greater allocation efficiency (lower price excess over marginal costs and less distortion of the produced set of products compared to the "first best"), but production efficiency would be lower (average costs higher) than with a single seller. A single seller can produce goods with lower average costs, but the losses from allocative inefficiency are higher. As a way to resolve this contradiction, the state uses price (tariff) regulation in the sectors of natural monopolies. Regulated prices are the solution to maximizing consumer gains, subject to the break-even of a single seller.

A specific method of increasing costs is the excess investment of a monopolist. When the regulator sets the "fair price of capital" (to determine the normal profit), the seller has an incentive to increase his capital in excess of the volume, which would minimize the costs of this issue.

However, even greater problems arise due to the fact that the regulated manufacturer lacks adequate incentives both to reduce costs with this technology and to update production technology. Even understanding this problem, the regulator cannot determine to what extent the change in the costs of a monopolist is due to the level of its efforts, and to what extent the change in the prices of resources and other external factors.

Unlike traditional antitrust regulation, competition policy in natural monopolies is directed not only against the actions of the monopolist, but also against the traditional model of price regulation. It uses two groups of methods. The first is related to the improvement of tariff regulation, the introduction of — albeit highly imperfect — stimulating contracts in tariff regulation.

The second is to remove as many markets as possible from the tariff regulation regime. This implies the division of types of activity in regulated industries into natural monopoly and potentially competitive ones. For the latter, the ultimate goal of transformation is the complete rejection of tariff regulation. However, before achieving this goal, it is necessary to carry out a major transformation of the structure of the previously regulated industry and the rules that should guide the participants in this industry. This is primarily due to the fact that structural transformations of a company operating in an industry are not the most difficult problem. The problem is to limit the ability of an established company to resist competition in an unregulated market. As a rule, in order to free potentially competitive markets from price regulation, it is necessary to introduce many new norms and directions of regulation.

The fight against restriction of competition from the state is repelled by the understanding that much of the entry barriers that impede the development of competition are created thanks to the conscious actions of government officials in order to "rent-see." The concept of "rent seeking", among other things, makes it necessary to rethink the approach to assessing the loss of society from a

monopoly. Monopoly profits can be interpreted as the price paid for the acquisition of a monopoly position. In this context, the monopoly profit does not bring any benefit to society and should be attributed to overhead costs. Then the quantitative losses of society from a monopoly should include not only the actual "dead losses". Monopoly becomes even more dangerous for public welfare. Even in the absence of production inefficiency, monopoly brings losses to society due to the redistribution of gains in favor of those who restrict competition.

However, it is obvious that the state policy should be directed not only against the monopolist as such, but also against the organizer of competition for monopoly rent, that is, against officials representing the state. Regulation, which leads to the creation of barriers, causes more damage to society than private monopolies as such. From this point of view, the understanding of competition policy is expanding, including both the policy of liberalization (reducing the administrative burden) and the policy against corruption. In this regard, it is advisable to include in the composition of competition policy those areas of government action that have a direct impact on markets — policies on public procurement and policies on state assistance. In the field of public procurement, which make up to 8–10% of GDP in EU countries, the rules established by the state as a purchaser have a direct impact on competition.

Similarly, choosing the scale and form of state aid, the state determines how strong the distorting effect on the market structure will be. The competition policy in this part uses both passive instruments (for example, anti-corruption legislation) and active (for example, requirements for competitive procurement of goods and services for state needs).

Thus, the cause of the implementation of competition policy in general and antitrust regulation in particular is monopoly power as a form of market failure, which reduces economic efficiency. However, this conclusion does not mean that any competition policy and any anti-monopoly regulation increases welfare. Antitrust policy brings benefits to society only if the benefits of its implementation exceed the costs of its implementation.

In addition to the three traditional areas of antitrust regulation — prevention of cartel agreements, prevention of abuse of dominant position (in terms of US antitrust law — monopolization), and antitrust control of mergers — the Russian antitrust law contains rules on unfair competition, state competition restrictions, and antitrust requirements for government procurement and the provision of state aid. Secondly, the legislator aims to provide a comprehensive and consistent description of all types of illegal practices in a single law.

The Law "On Protection of Competition" substantially changed the content of the basic concepts used by competition law. In particular, a commodity in the Law means an object of civil rights (including work, service, including financial service), intended for sale, exchange or other introduction into circulation.

The definition of the commodity market is concretized taking into account the technical and other possibilities and expediency of the acquirer to purchase goods in the relevant territory. According to the Law, a commodity market is a sphere of circulation of goods (including goods of foreign production) that cannot be replaced by another product, or interchangeable goods, within whose borders (including geographic ones) based on economic, technical or other possibilities. either expediency the purchaser can purchase goods, and such a possibility or expediency is not outside of it.

The law introduced the concepts of such forms of influence on competition as coordination of the activities of economic entities, as well as concerted actions restricting competition. Coordination of economic activity is the coordination of actions of economic entities by a third party who is not in the same group of persons with any of these economic entities. At the same time, the actions of a self-regulating organization carried out in accordance with federal laws for establishing conditions for their members to access the product market or exit the product market are not coordinated. Regarding abuse of dominant position, the Law establishes a list of violations, the existence of which does not require proof of a negative impact on competition:

- setting, maintaining a monopoly high (low) price of the goods;
- withdrawal of goods from circulation if prices increase as a result;
- imposing contractual terms on the counterparty that are unfavorable for him or not related to the subject of the contract;
- economically or technologically unjustified refusal or evasion from concluding an agreement with individual buyers (customers) in the case of the possibility of production or supply of the relevant goods, as well as in the event that such a refusal or such evasion is not expressly provided for by acts of state bodies;
- economically, technologically and otherwise unjustified establishment of different prices (tariffs) for the same product, unless otherwise established by federal law;
- the establishment by a financial institution of an unreasonably high or unreasonably low price of a financial service;
- violation of the pricing procedure established by regulatory legal acts.

With regard to other types of abuse of dominant position, an economic entity has the right to provide

evidence that its actions (inaction) can be considered admissible, if these actions do not create an opportunity for individuals to eliminate competition in the relevant product market and do not put restrictions on their participants or third parties. that do not meet the goals of such actions, and the result of such actions may be a positive effect.

Monopolistic activity is defined as the abuse of a dominant position in the market by an economic entity (group of persons), the conclusion of agreements or the implementation of concerted actions prohibited by antimonopoly legislation.

In accordance with the current antimonopoly legislation, manifestations of monopolistic activity in commodity markets include: 1) abuse of a dominant position in the market by a business entity (group of persons), which may or may result in the prevention, restriction, elimination of competition and (or) infringement of the interests of other business entities subjects; 2) agreements and concerted actions of economic entities that restrict competition, which can be differentiated as follows: a) contracts, other transactions, agreements, concerted actions of economic entities operating in the market for one commodity (interchangeable goods) that lead or may lead to divided negative effects associated with monopoly-asymmetric pricing, the division of the market between these economic entities, the establishment of barriers to access to ok, to eliminate competitors from the market, and so on. etc.; b) agreements between economic entities operating in the market of one commodity (interchangeable goods), or their concerted actions, as a result of which there are or may be the prevention, restriction, elimination of competition and infringement of the interests of other economic entities; c) coordination of business activities of commercial organizations, which has or may result in restriction of competition.

It is common to refer to anti-competitive practices (aimed at restricting competition) of financial organizations:

- actions of a financial institution that holds a dominant position in the financial services market, making it difficult for other financial organizations to access the financial services market and (or) have a negative impact on the general conditions of financial services in the financial instruments market;
- agreements (achieved in any form) or concerted actions of financial organizations, if such agreements or concerted actions have or may result in restricting competition in the financial services market findings.

Another common offense in the implementation of competitive interaction between business entities is unfair competition, which refers to any actions aimed at acquiring business advantages that contradict the provisions of current legislation, business practices, honesty, reasonableness and fairness and may cause or cause losses to other business entity am competitors either damage their business reputation.

In addition to monopolistic activity and unfair competition, anti-competitive practices of the executive authorities, the Central Bank of the Republic of Uzbekistan, state authorities of the constituent entities of the Republic of Uzbekistan, local governments and other bodies or organizations endowed with the functions or rights of these authorities are other actions aimed at restricting competition. The Law summarizes the following signs of restriction of competition: a reduction of economic entities that are not in the same group of persons in the commodity market, a rise or fall in the price of goods that are not related to the corresponding changes in other general conditions for the circulation of goods in the commodity market, and the refusal of economic entities that are not in one a group of persons from independent actions in the commodity market, the determination of the general conditions for the circulation of goods in the commodity market by agreement between economic entities or in accordance with the instructions of another person, which are binding for them, or as a result of coordination by economic entities that are not in the same group of persons, of their actions in the commodity market, as well as other circumstances that make it possible for the economic entity or several economic entities to unilaterally influence the general conditions of goods circulation in the commodity market. One of the main directions of the state antimonopoly policy implementation is the conduct of state antimonopoly control over economic concentration in commodity and financial markets, which includes preliminary antimonopoly control and subsequent antitrust control. Objects of such control in commodity and financial markets can be differentiated as follows: a) objects related to the implementation of the corporate policy of an economic entity, financial organization (creation, reorganization (merger, affiliation), changes in the composition of participants in business entities (including the number of financial organizations), change authorized capital of a financial organization, election of individuals to governing bodies, advice

Despite the obviousness of the concept itself in the practice of antitrust regulation with the definition of the boundaries of a group of individuals, there are high costs. This is caused primarily by the fact that during the period of redistribution of property after the completion of privatization, Russian companies developed an opaque structure of ownership and control with the active use of so-called tool companies, masking the true corporate structure. In recent years, the structure of ownership and control has become increasingly transparent - primarily because the intensity of the redistribution of control is a little decreases, but in many cases the opacity of the final beneficiaries makes the precise definition of

the boundary of a group of individuals a very difficult task. Industrial policy (eng. Industrial policy) is a system of relations between the government, local government, business and society about the formation of a structurally balanced competitive economy and high-tech intellectual core of industrial production. The presence in the modern economy of market regulation defects related to the inability of market structures to meet many potential social needs, the cyclical nature of economic development, increased socio-economic differentiation, increasing market concentration, lack of interest of market participants in funding basic research, support for the scientific and technical sphere, causes the need for government intervention in the implementation of the measure ulirovaniya investment demand, coordinating the functioning of the financial and credit sector, customs tariff regulation to support national enterprises, promoting the formation of innovative industries that determine the priority of the country's technological development.

Industrial policy is closely linked with other areas of state influence on the economy, including foreign economic, regional antitrust, environmental, social policies. At the same time, at different stages of the functioning and development of the economy, industrial policy has specific goals and instruments for implementation.

In a cyclically developing economy at the stage of overcoming the structural crisis, industrial policy contributes to the formation of a new type of sectoral structure of the industrial sector with a predominance of higher technological level production, at the stage of economic growth - development and strengthening of the complex being formed, at the stage of stabilization it is aimed at implementing the existing production, scientific and technical and innovation potential.

Thus, depending on the stage of economic development, industrial policy provides either support for the existing industrial structure or the formation of a sectoral structure of a new type.

According to the degree and nature of the state's impact on the economic complex, economic theory makes it possible to distinguish two alternative models of industrial policy:

1) a dictatorial model - a "rigid" or vertical model;

2) the liberal model is a "soft" or horizontal model.

"Tough" policy is usually understood as a course whose goal is the creation and development of priority sectors of the economy. Government agencies form a long-term growth strategy based on budget subsidies and loans to enterprises of priority sectors, indirect subsidies for companies, and protectionism in foreign trade. The interconnectedness of the subjects of the economic complex ensures the chain development of related industries through the use of the achievements of leading industries and the formation of a new type of economy.

In contrast to the "rigid" model of industrial policy, which implies direct active state intervention in the economy as an actor, a state entrepreneur and an investor, liberal policies are aimed at creating conditions for competitiveness growth and supporting investment projects that will increase the level of efficiency of national companies.

The horizontal model is focused on the formation of common for all sectors of the development of production. Sectoral proportions, problems of capital flow (intersectoral, interregional) and many other problems should be solved at the junction of supply and demand in market self-regulation procedures, therefore the need to prioritize development and highlight leading industries is denied.

According to supporters of this model, the establishment of priorities for industrial development can lead to the preservation of emerging proportions; this determines the preference of a strategy of constant adjustment of the structure based on the action of market forces.

However, the imperfection of the market mechanism in the conditions of the prevailing market conditions and limited resources, manifested, for example, in over-capitalization of the commodity sector to the detriment of the manufacturing industries, in the long run can lead to significant disparities in socio-economic development, lagging in the innovation, technological and other sectors of the economy.

Today, industrial policy is implemented in most developed countries of the world (France, Germany, USA, etc.). State bodies are implementing comprehensive measures aimed at bringing the industrial structure in line with the challenges of the global economy, increasing the competitiveness of the national industrial complex, improving the industrial infrastructure, and creating new industrial sectors. Direct and indirect methods of state regulation are distinguished as instruments of industrial policy. Direct methods of industrial policy are associated with the distribution or redistribution of resources for production, carried out directly by the state in order to stimulate or de-stimulate certain activities. Direct methods include subsidizing industries, enterprises or regions, direct public investment, creating state-owned enterprises, subsidizing interest rates.

Indirect methods, including elements of monetary and fiscal policy, are aimed at creating conditions for the functioning of all economic entities. They are designed to change producers' expectations and, in the first place, their assessment of the risks associated with certain types of

production activities. With these tools, the state seeks to transform the ratio of supply and demand in the desired direction.

International experience shows that in today's rapidly changing post-industrial economic environment, traditional means of direct financial support for individual industries and industrial complexes prove to be very costly and inefficient. The main means of implementing the goals of modern industrial policy are indirect methods.

However, in order to ensure national and economic security, preserve and develop a diversified production system, ensure the stable functioning of the social sphere, stimulate the activities of public sector enterprises, government agencies use direct impact tools, allocating budget funds to support specific industries and implement large investment projects.

The prevalence of one or another set of tools in the complex of measures aimed at the development of the national economy, new technologies and products with a high degree of processing, as well as a fundamental feature of modern industrial policy related to its focus on the formation of innovations as the most important factor of economic growth, determine the type of government industrial policy.

At present, the following main types of industrial policy have emerged in the world:

- export oriented industrial policy;
- import substitution policy;
- innovative industrial policy.

The essence of export-oriented industrial policy lies in the full promotion of production, focused on the export of its products. The main incentive measures are aimed at developing and supporting competitive export industries in order to capture the largest possible share of the world market. The implementation of this type of industrial policy is carried out through tax and customs benefits, lending to exporting enterprises, maintaining a low exchange rate and creating other favorable conditions for the functioning of export-oriented industries.

Important advantages of this type of industrial policy are the inclusion of the country in the world economy and access to world resources and technologies; the development of strong competitive sectors of the economy that provide the multiplicative effect of the development of the rest of the “domestic” industries and are the main supplier of funds to the budget; attracting foreign currency into the country and investing in development production and services of the national economy. Successful examples in terms of export-oriented industrial policy can serve such countries as Japan, South Korea, Chile, the Asian Tigers (Malaysia, Thailand, Singapore), China.

Negative factors in the implementation of this type of policy are mainly related to commodity exports, since its excessive presence in the structure of exported products threatens to lead to primitivization of the structure of the national industry, increased corruption in government, an outflow of personnel and financial resources from the manufacturing industry of the country (Venezuela, Russia). In the long run, this may lead to a weakening of the competitiveness of the manufacturing industry, a slowdown in economic growth and a decrease in the level of accumulated knowledge, since the most intensive process of accumulating knowledge, the growth of human capital occurs in the manufacturing sector. This situation in modern economic theory has been called the "Dutch disease".

The stagnation in the manufacturing industry can lead to its lagging behind the global technological development and the need to import new equipment, which practically nullifies the effect of commodity exports, because it makes the country's economic development dependent on foreign manufacturers.

In addition, there are negative aspects when the country focuses on exporting even industrial equipment with high processing, if in the production of this equipment a high proportion of imported components, which leads to the linkage of the price of exported machines and machines to the cost of their imported parts, as well as to the possibility of non-economic influence of the country -importer on these enterprises, industry and the economy as a whole (Mexico).

The industrial policy of import substitution is a strategy to ensure the domestic market based on the development of national production through the implementation of protectionist policies and the maintenance of a firm exchange rate of the national currency (thereby preventing inflation). Import-substituting industrial policy contributes to improving the balance of payments structure, normalizing domestic demand, providing employment, developing engineering production, and scientific potential.

The negative sides of the import-substituting model of industrial policy are: self-isolation from new trends in the global economy; the possibility of technological, and therefore competitive lag from developed countries; the danger of creating greenhouse conditions for national producers, which will lead to inefficient management and use of resources; the need, regardless of the international division of labor, to build fully production chains, which may be more capital and resource-intensive than those already existing in other countries.

The basis of the innovation industrial policy is the process of economic development of the country in the domestic and foreign markets, based on the latest trends in technological and social development using high-tech and capital-intensive production. The innovation model contributes to the maintenance of

the scientific and technological potential of the state, and therefore its competitiveness in the international arena; stimulates the development of educational institutions and provides the economy with qualified personnel; promotes job creation within the country and provides domestic demand; maintains a stable and high rate of national currency and the welfare of the population; focuses on the development of the machine processing complex, instrument-making with high value added products.

Since the early 90s. XX century. market transformations are being implemented in Uzbekistan. Applying the experience of developed capitalist countries, the Government of the Republic of Uzbekistan has adopted a liberal model of industrial policy, making a bet on the effectiveness and self-controllability of market mechanisms.

At the beginning of radical market reforms, the concept of economic policy was based on the idea that general economic reforms of the institutional environment and the creation of market mechanisms would solve the problems of industries and enterprises without government intervention.

However, the liberalization of the pricing process with the addition of many control functions inherent in the command economy and the underdeveloped market mechanisms from the state fully revealed all structural distortions of the Soviet economy, resulting in high inflation, budget deficit, impoverishment of the population and stagnation of production.

During the transition to a market economy, the government impact on the development of industry was characterized by attempts to stimulate domestic demand, provide enterprises with cheap working capital to increase the utilization of existing capacities, develop import substitution through protectionist foreign economic policies, accelerate intra-industrial integration and build sustainable production "chains". Against the background of the crisis of liberal ideas, the state even under various “soft measures” interacted with business for various reasons, for example, in the framework of debt restructuring procedures, bankruptcy procedures and operating assets of state enterprises for the implementation of various projects.

The approach to the development of industrial policy shifted from solving tactical problems to creating an industrial development strategy for the long term. At present, a new stage of development of the state industrial policy is being formed, when its development is based on the introduction of innovations. The main task at this stage is to create the conditions and mechanisms for the design and production of competitive high-tech products.

In the future, the industrial complex should turn into a constantly “learning” and “getting smarter” production capable of overcoming the challenges of the external environment, creating a large variety of its internal potentials and managing it. In the development of industrial policy at this stage, it is necessary to take into account the projected global trends, including the intensive formation of a new technological core of modern economic systems, the development of digital technologies, the spread of educational technologies, the expansion of the availability of new technologies, and the blurring of the boundaries between fundamental and applied research.

The strategic goal, according to the Concept of the long-term socio-economic development of the Republic of Uzbekistan for the period up to 2020, is to transform Uzbekistan into one of the leaders of the world economy.

Achieving this goal involves the diversification of the economy, in the structure of which the leading role goes to the "branches of knowledge" and high-tech industries.

The benchmarks for industrial, oil and gas development are supposed to focus on:

1) creating a highly competitive institutional environment that stimulates entrepreneurial activity and attracting capital to the economy (developing competitive markets, consistently de-monopolizing the economy, supporting innovative business; developing the financial sector, ensuring the transformation of savings into capital);

2) structural diversification of the economy on the basis of innovative technological development (the formation of a national innovation system, including engineering business, innovation infrastructure, institutions of the intellectual property market; the creation of a powerful scientific and technological complex; assistance in improving the competitiveness of leading industries through the use of public-private partnerships; conditions for companies to access long-term investment sources cations, providing industries with highly professional personnel);

3) on the consolidation and expansion of Russia's global competitive advantages in traditional areas (energy, transport, agricultural sector, processing of natural resources) - the development in the territory of Uzbekistan of large nodes of the international energy infrastructure using new energy technologies; commercialization of environmentally friendly energy production technologies, etc.

Conclusions

Today, the low technological level of production, the lack of demand for innovative products by enterprises in other industries that are part of the production “chains”, the lack of high-quality human capital inhibit the spread and introduction of innovations, accelerating the outflow of innovators abroad. To reach a qualitatively new stage of innovation development, industrial policy should be aimed at competent borrowing, refinement

of technologies and their dissemination among enterprises of all sectors of the industrial sector. At the same time, the level of acquired technologies should correspond to the degree of technical and technological development of the country.

The need for substantial financial resources for the acquisition of technology, as well as a developed scientific and technological base for the adaptation of achievements, determines a high proportion of innovators among large enterprises integrated into holding companies, as well as companies that are part of state corporations. Small business is not able to bear such costs. In this situation, the task of the state is to promote the purchase of licenses to domestic companies, as well as to ensure the diffusion of innovations among related industries, through the formation of development institutions (venture funds, technology parks, innovation and technology centers, technology transfer centers, etc.).

In addition to this channel, borrowing can be carried out through foreign direct investment (the purchase of enterprises abroad), foreign trade (competition in export and import operations), education renewal (study of advanced technologies, foreign experience), cooperation with foreign experts (exchange of experience, foreign internships).

The current global crisis exposed the main imbalances in the global economy, revealed the contradictions of global economic development. The gap between the financial sector and the real sector clearly manifested itself. Overheating of financial markets, and above all mortgage, has become one of the factors behind the bankruptcy of a number of world banks.

In essence, there was a "sovereignization of private debts": the states were forced to incur a significant portion of the debts of banks and corporations. Expensive anti-crisis programs, and often unbalanced pre-crisis growth of social obligations, led to record budget deficits. The crisis has led to increased differentiation between the centers of economic power on the world stage. The positions of the United States, which started the crisis wave, strengthened relatively, but then became among the developed countries the main locomotive of post-crisis growth. The differences in the eurozone are intensifying, where both the leaders of the revival — Germany, France, and the "risk zones" —Greece, Italy, Spain, Portugal, and Ireland — are marked. An important factor in this division becomes the level of budget discipline of countries.

The demand for foreign goods from Latin American countries is growing at a significant pace, while the developed countries: the USA, the EU countries and Japan annually reduce their weight in the import markets. And import markets are essentially export opportunities.

The global crisis has become a kind of stress test for all national economies, exacerbating structural problems, once again showed the vulnerability of the Russian export-raw material model of development.

At the same time, the crisis must be viewed not only as a test of the national economy, but also as a window of opportunities to increase its competitiveness, including through the implementation of an effective industrial policy.

The government has currently identified seven key strategic priorities for the development of the economy:

- improvement of the investment climate;
- stimulating innovation;
- energy efficiency;
- small and medium business;
- improving the efficiency of foreign economic policy, integration within the framework of the Common Economic Space and the Customs Union;
- state property management and privatization;
- increasing the efficiency of public administration.

All these priorities are linked by the ideology of creating an environment for realizing the potential for modernization and the creation of new competitive industries.

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	JIF = **1.500**	**SJIF** (Morocco) = **5.667**	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

SECTION 9. Chemistry and chemical technology.

QR – Issue QR – Article

Elena V. Vorobyova
Canditate of Chemistry, associate professor, Chair of Chemistry in Skaryna Gomel State University
vul. Savieckaja, 106, 246019
Gomel, Belarus
+375 232 601-403
evorobyova@gsu.by

CHANGES IN THE STRUCTURE OF THE PHENOLIC ANTIOXIDANT IRGANOX 1010 IN THE COMPOSITION OF THE ZINC-CONTAINING POLYMER COMPOSITE WITH CYCLIC THERMAL EFFECTS

Abstract: *The study studied the change in the structure of the phenolic antioxidant Irganox 1010 under the conditions of cyclic thermal exposure as part of two types of samples: inhibited polyethylene film and inhibited polyethylene film containing zinc oxide filler. The thermal cycle involved three stages: the heating stage (stage A), the isothermal stage (stage B), and the cooling stage (stage B). The structure of the experimental samples was studied by Fourier-IR-spectroscopy. When presenting and discussing the results of the research, the relative coefficient $K_{он}$, which expressed the proportion of hydroxyl groups in relation to ester groups, which in equal amounts form part of the initial molecule of the antioxidant irganox 1010.*

The laws governing changes in the coefficient $K_{он}$ at the stage of isothermal thermal effects (stage B) and at the stage of cooling (stage C) are established; they have the opposite character for two types of film samples. It is shown that the established regularities of changes in the coefficient $K_{он}$ at the cooling stage are performed for all cycles of thermal testing of film samples carried out during the induction oxidation period.

Key words: *polyethylene, antioxidant irganox 1010, zinc oxide, thermooxidation, thermal effect, synergism.*

Language: *Russian*

Citation: Vorobyova, E. V. (2018). Changes in the structure of the phenolic antioxidant irganox 1010 in the composition of the zinc-containing polymer composite with cyclic thermal effects. *ISJ Theoretical & Applied Science, 11 (67),* 232-239.

Soi: http://s-o-i.org/1.1/TAS-11-67-38 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.38

ИЗМЕНЕНИЕ СТРУКТУРЫ ФЕНОЛЬНОГО АНТИОКСИДАНТА ИРГАНОКСА 1010 В СОСТАВЕ ЦИНКСОДЕРЖАЩЕГО ПОЛИМЕРНОГО КОМПОЗИТА ПРИ ЦИКЛИЧЕСКОМ ТЕРМОВОЗДЕЙСТВИИ

Аннотация: *В работе изучено изменение структуры фенольного антиоксиданта ирганокса 1010 в условиях циклического термического воздействия в составе двух типов образцов: ингибированной полиэтиленовой пленки и ингибированной полиэтиленовой пленки, содержащей наполнитель оксид цинка. Цикл термовоздействия включал три стадии: стадию нагрева (стадия А), стадию изотермического воздействия (стадия Б) и стадию охлаждения (стадия В). Исследования структуры экспериментальных образцов проведены методом Фурье-ИК-спектроскопии. При представлении и обсуждении результатов исследований использовали относительный коэффициент $K_{он}$, который выражал долю гидроксильных групп по отношению к сложноэфирным группам, которые в равном количестве входят в состав исходной молекулы антиоксиданта ирганокса 1010.*

Установлены закономерности изменения коэффициента $K_{он}$ на стадии изотермического термовоздействия (стадия Б) и на стадии охлаждения (стадия В), они имеют противоположный характер для двух типов образцов плёнок. Показано, что установленные закономерности изменения

коэффициента $K_{он}$ на стадии охлаждения выполняются для всех циклов термоиспытаний образцов пленок проведенных в течение индукционного периода окисления.

Ключевые слова: *полиэтилен, антиоксидант ирганокс 1010, оксид цинка, термоокисление, термовоздействие, синергизм.*

Введение

Термопластичные полимеры легко подвержены процессам старения или окисления [1, 2]. Этот негативный процесс, сопровождающийся изменением эксплуатационных свойств, в частности, уменьшением механической прочности, эластичности, возникновением хрупкости, изменением цвета и др. Обычно процесс окисления ингибируют технологически путем введения низкомолекулярных органических веществ – ингибиторов или антиоксидантов. По своей химической природе это могут быть органические соединения трёхвалентного фосфора (фосфиты и фосфониты), металлические соли дитиокарбаматов и дитиосульфатов и тиоэфиры и др., но наиболее часто используются в полимерной индустрии замещённые фенолы (производные моноядерных фенолов, бисфенолов и трисфенолов) и вторичные ароматические амины [3, 4]. В настоящее время синтезируют гибридные антиоксиданты, т.е. вещества, содержащие в своем составе несколько активных функциональных групп или прививают такие группы на инертную матрицу наноразмеров [5,6]. Эффективность антиоксидантов чаще всего оценивают величиной индукционного периода окисления (ИПО) полимерного материала, под ним понимают временной интервал, в течение которого показатели свойств материала существенно не изменяются [4, 7]. В наших исследованиях мы изучали накопление кислородсодержащих карбонильных групп, которое инструментально фиксировали по изменению показателя экстинкции полосы поглощения 1720 $см^{-1}$ в ИК-спектрах образцов [8, 9].

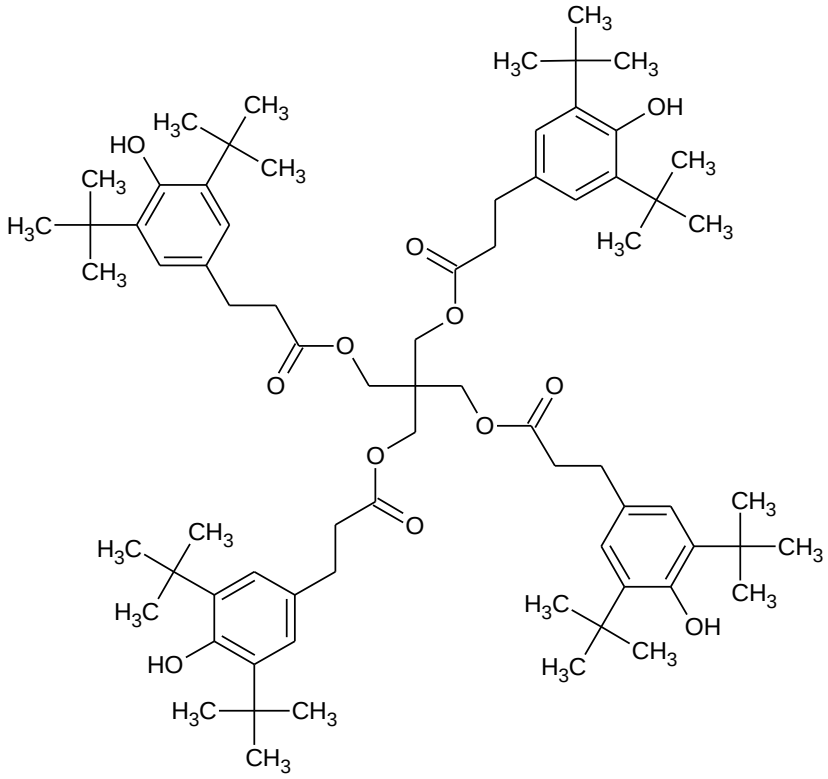
Индукционный период окисления полиэтиленовой пленки толщиной 100 мкм содержащей 0,1% масс. антиоксиданта фенольного типа ирганокс 1010 составляет 31 час при постоянном термвоздействии в 150 °С. Дополнительное введение в эту систему дисперсного цинка или его оксида (концентрация металла 1% масс.), либо окисление ингибированной полиэтиленовой пленки в контакте с цинковой подложкой приводит к увеличению ИПО пленки примерно 2 раза при условии аналогичного температурного режима [9,10]. Такое явление можно рассматривать как синергизм металлосодержащего наполнителя и антиоксиданта фенольного типа. Увеличение продолжительности ИПО является неожиданным и труднообъяснимым, т.к. ионы цинка являются катализаторами процесса окисления полиэтилена [11]. Факт неаддитивного увеличения ИПО пленок содержащих цинк или оксид цинка и антиоксидант фенольного типа ирганокс 1010 описан в работах [8-10], но механизм этого явления детально не изучен. В работе [9] высказано предположение о возможности регенерации фенольного антиоксиданта с участием цинксодержащего наполнителя, что приводит к синергизму термоокислительной устойчивости металлополимерной пленки. Изучение изменений структуры фенольного антиоксиданта ирганокса 1010 в составе ингибированной полиэтиленовой пленки, содержащей наполнитель оксид цинка, может дать информацию о механизме описанного синергического эффекта.

Отметим, что продолжительность ИПО рассматриваемых образцов полимерных пленок значительна, а значит термоиспытания образцов можно провести только в течение нескольких дней. При этом каждый день испытаний исследователи подвергают полимерные образцы циклическому термическому воздействию: сначала пленочный образец нагревают (стадия нагрева, стадия А), выдерживают в расплаве несколько часов (стадия изотермического воздействия, стадия Б), а в конце дня охлаждают (стадия охлаждения, стадия В). ИПО экспериментального образца определяют путем суммирования продолжительностей нахождения образца в расплавленном состоянии до момента резких изменений концентрации кислородсодержащих групп в полимере. Во время циклических воздействий температуры полимер претерпевает фазовые переходы «твердое состояние ↔ расплав», что должно отражаться на состоянии структуры антиоксиданта. Так как концентрация антиоксиданта в полимере очень мала, то достоверно изучить изменения его структуры в составе композита возможно только «in situ», то есть проводить измерения нужно именно в момент термоиспытаний, не изменяя положения образца на протяжении всего эксперимента.

Поэтому целью работы является изучение изменений структуры фенольного антиоксиданта ирганокса 1010 в составе цинксодержащего полимерного композита при циклическом термическом воздействии с использованием методики in situ.

Материалы и методы исследований

В экспериментах использовался порошкообразный нестабилизированный полиэтилен низкого давления (ГОСТ 16338-85, базовая марка 20308-005), оксид цинка ZnO (ГОСТ 10262-73, размер частиц 5-10 мкм) и антиоксидант ирганокс 1010 (эфир 3,5-дитретбутил-4-гидрокси-фенилпропионовой кислоты и пентаэритрита) [12], формула антиоксиданта представлена ниже.



Химическая формула ирганокса 1010

Порошковые композиции полимера с антиоксидантом и наполнителем перемешивали, при этом использовали растворитель (ацетон). Затем композиции высушивали на воздухе при комнатной температуре до полного удаления растворителя. Методом термического прессования (продолжительность прессования около 30 секунд, температура 150 °С) получали полимерные пленки толщиной 100 мкм, которые затем наплавляли на кристаллы KBr (материал прозрачный в ИК-области спектров. Окисление проводили при температуре 150 °С.

ИК-спектры снимали на Фурье ИК-спектрофотометре Vertex 70 (фирма Bruker, Германия). В исследованиях использовали термостатирующую приставку P/N 21525 (термокювету) к ИК-спектрофотометру, ее температура регулировалась с помощью термоконтролера West 6100. Спектры снимали во время термоиспытаний в режиме in situ, то есть без извлечения образца из термокюветы.

Эффективность антиоксиданта характеризовали величиной продолжительности ИПО пленки-образца. Его определяли по кинетическим кривым накопления в полимерных образцах карбонильных групп, момент достижения значения показателя экстинкции 4 $см^{-1}$, считали соответствующим моменту завершения ИПО.

Для анализа ИК-спектров пленок ингибированного полиэтилена использовали площади полос поглощения, относящиеся к антиоксиданту: поглощение, относящееся к гидроксильным (частотный интервал 3530–3730 $см^{-1}$) и сложноэфирным (1660–1785 $см^{-1}$) группам [13,14]. Интенсивность поглощения рассчитывали как площадь полос поглощения (измеряются в условных единицах – усл.ед.) используя для этого стандартный пакет программ OPUS 6.5 для ИК-Фурье-спектрофотометра.

При представлении результатов исследований рассчитывали относительный коэффициент $K_{он} = \frac{S_{3640}}{S_{1745}}$, который представлял собой отношение площади полосы 3640 см$^{-1}$ к площади полосы 1745 см$^{-1}$. Коэффициент выражал долю гидроксильных групп по отношению к сложноэфирным группам в составе антиоксиданта ирганокса 1010. В исходной формуле антиоксиданта 4 гидроксильных и 4 сложноэфирных группы. Показатель $K_{ОН}$ свидетельствовал о степени поврежденности или расходования ингибитора. Процесс ингибирования окисления полимеров реализуется именно за счет гидроксильных (точнее феноксильных) групп фенольного антиоксиданта [1-4]. Подвижный водород в составе гидроксила еще на стадии периода индукции реагирует с полимерными радикалами, в результате происходит отрыв водорода от гидроксильной группы, и молекула антиоксиданта превращается в малоактивный феноксильный радикал.

Результаты экспериментов и их обсуждение

Рассмотрим подробно изменение площади полос поглощения 3640 см$^{-1}$ и полосы 1745 см$^{-1}$ для образца полиэтиленовой пленки, содержащей только антиоксидант ирганокс 1010 концентрацией 0,1% масс. Как видно из экспериментальных данных, приведенных в таблице 1, на стадии нагрева образца (стадия А, до 100 °С) в ИК-спектрах постепенно нарастают площади полос поглощения S_{3640} и S_{1745}, что указывает на сорбцию или растворение антиоксиданта в полимере. Увеличение сорбционной емкости полимера происходит в результате плавления кристаллитов при фазовом переходе. Известно, что внутри кристаллитных образований кристаллизующихся ингибированных полимеров антиоксидант практически отсутствует, он локализуется в аморфных участках полимерной матрицы [4]. После разрушения кристаллитов и перевода всего полимера в аморфное состояние (стадия Б), становится возможным перенос антиоксиданта в зоны образца, которые раньше входили в состав кристаллитов и не содержали ингибирующей добавки. Подтверждением дополнительной сорбции антиоксиданта полимером является рост площади полосы поглощения, относящейся к карбонильным группам антиоксиданта (таблица 1, стадия Б).

Таблица 1. Динамика изменения площадей полос поглощения для одного цикла термообработки образца полиэтиленовой пленки, содержащей 0,1% масс. ирганокса 1010 на трех стадиях термовоздействия

Стадия испытания	температура/ время/ температура	S_{3640}	S_{1745}
Стадия А – нагрев образца от комнатной температуры до температуры окислительного воздействия в расплавленном состоянии	20 °С	4,33	1,08
	50 °С	4,41	1,10
	80 °С	4,49	1,11
	100 °С	4,50	1,10
	120 °С	4,42	1,11
	130°С	4,34	1,10
	140 °С	4,21	1,09
Стадия Б – изотермическая обработка образца при данной температуре	0,0 ч	3,29	1,09
	1,0 ч	3,24	1,30
	2,0 ч	3,23	1,50
	3,0 ч	3,19	1,65
	4,0 ч	3,15	1,76
	5,0 ч	3,10	1,84
	6,0 ч	3,18	1,91
	6,5 ч	3,11	1,93
Стадия В – перевод расплава полимера в твердое состояние при комнатной температуре	140 °С	3,16	1,93
	130 °С	3,18	1,94
	120 °С	3,62	1,97
	110 °С	4,21	1,98
	100 °С	4,40	2,01

	90 °C	4,46	2,03
	80 °C	4,50	2,04
	70 °C	4,62	2,06
	60 °C	4,71	2,07

Несмотря на рост значений площади полос поглощения S_{3640} и S_{1745} на стадии нагрева образца (стадия А) коэффициент $K_{он}$ с ростом температуры снижается (рисунок 1, начальный участок кривой). С переходом образца во вторую стадию термообработки (расплав, стадия Б) значения коэффициента $K_{он}$ снижаются существенно, примерно в 2 раза, что однозначно указывает на разрушение гидроксильных групп в составе антиоксиданта (рисунок 1, серединный участок кривой). На стадии охлаждения образца (стадия В) отмечен рост значений коэффициента – с 1,61 до 3,52 ед., т.е. относительная концентрация гидроксильных групп в составе фенольного антиоксиданта, увеличивается (рисунок 1, конечный участок кривой). При этом исходных значений коэффициент $K_{он}$ не достигает. Значит, в расплаве полиэтилена кроме процессов растворения, также протекали процессы разрушения антиоксиданта ирганокса 1010, которые привели к снижению его ингибирующей способности.

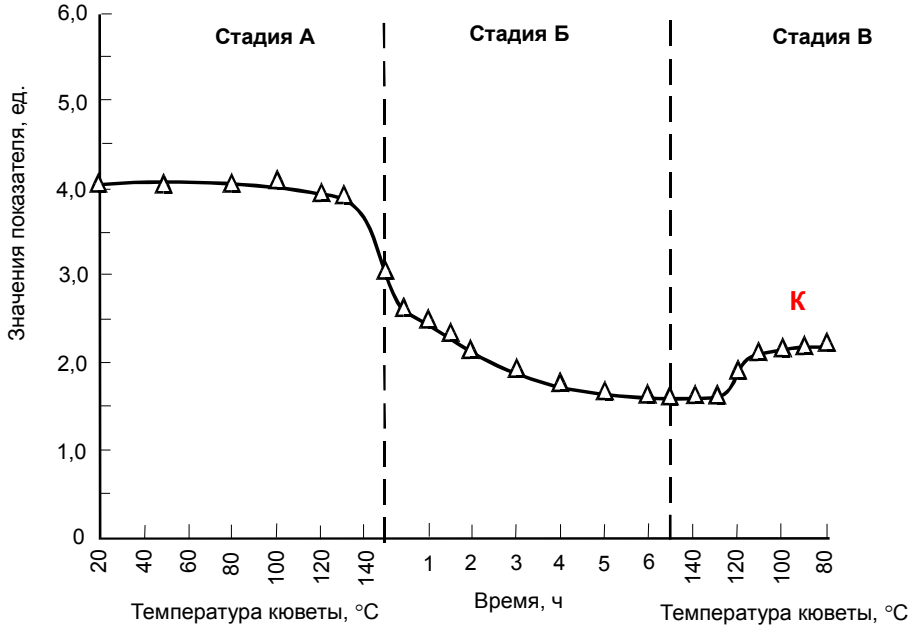


Рисунок 1 – Зависимость показателя $K_{он}$ в процессе первого цикла термоиспытаний (стадия А – нагрев, стадия Б – изотермическая термообработка расплава, стадия В – охлаждение); состав пленочного образца: полиэтилен + 0,1% масс. ирганокс 1010

Рассмотрим изменения площадей полос поглощения 3640, 1745 $см^{-1}$ и коэффициента $K_{он}$ для другого типа образца – полиэтиленовой пленки, содержащей антиоксидант ирганокс 1010 и наполнитель оксид цинка. Экспериментальные данные представлены на рисунке 2. Как мы видим, по окончании нагрева (стадия А) площади полоса поглощения S_{1745} в ИК-спектрах образца уменьшаются (рисунок 2, кривые 1, 2), что можно объяснить только протекающим процессом адсорбции антиоксиданта на поверхности твердого наполнителя. Адсорбционный процесс закономерно активизируется при фазовом переходе «твердый полимер → расплав», кроме того протекают и процессы сорбции антиоксиданта расплавом полимера, которые подробно описаны выше.

Следующая стадия, стадия изотермической обработки (стадия Б) образца в расплавленном состоянии, является основной в изучении поведения антиоксиданта в индукционном периоде окисления. Для этой стадии характерно отсутствие рассеяния света на кристаллитах и поэтому величина S_{3640} становится достаточно точной характеристикой содержания гидроксильных групп в составе антиоксиданта, сорбированного полимером. При рассмотрении изменений значений коэффициента $K_{он}$ выявлено принципиальное отличие двух типов образцов. При изотермической термообработке расплава образца содержащего антиоксидант и наполнитель показатель $K_{он}$ возрастает (рисунок 2, кривая 3). Рост коэффициента $K_{он}$ свидетельствует о повышении концентрации

гидроксильных групп относительно сложноэфирных, а, следовательно, об увеличении эффективности антиоксиданта или его регенерировании.

На стадии охлаждения образца (стадия В) в образце с наполнителем заметен рост значений площадей полос поглощения S_{3640} (рисунок 2, кривая 1), и коэффициента $K_{он}$ – с 0,92 до 1,42 ед. (рисунок 2, кривая 3). Такая закономерность отмечена и для образца, который не содержал цинксодержащего наполнителя (таблица 1, рисунок 1), но значение коэффициента $K_{он}$ не достигало исходного значения, которое было в начале изотермического воздействия (начало стадии Б). В случае с образцом, содержащем наполнитель оксид цинка, коэффициент $K_{он}$ по окончании стадии охлаждения превышает свои исходные значения полученные при переходе в стадию термоиспытаний Б. Этот факт служит еще одним доказательством протекания процессов восстановления или регенерации антиоксиданта ирганокс 1010.

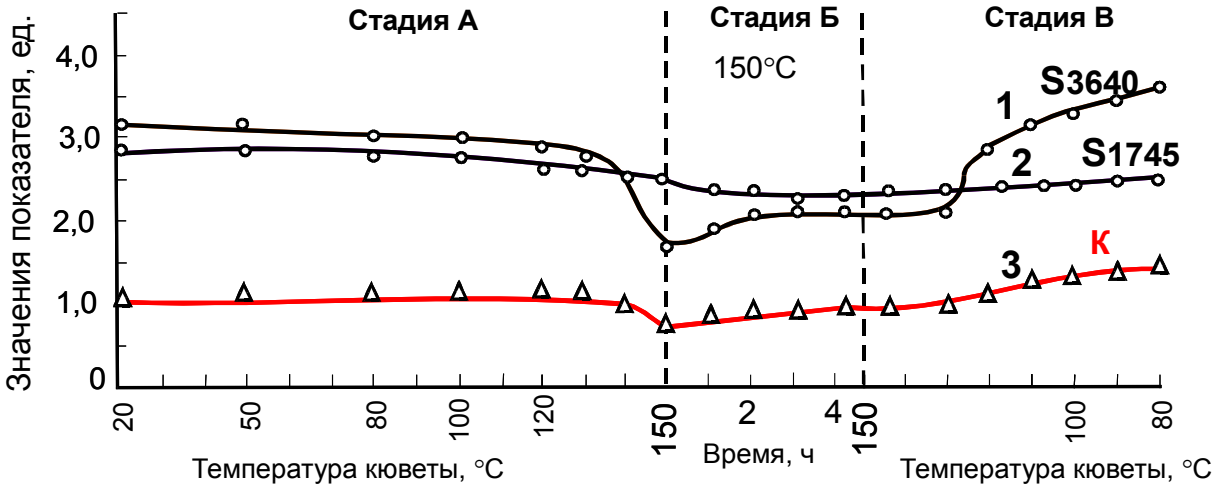


Рисунок 2 – Зависимость площадей полос поглощения S_{3640} (1), S_{3640} (2) и показателя $K_{он}$ (3) в процессе первого цикла термоиспытаний (стадия А – нагрев, изотермическая термообработка расплава – стадия Б, охлаждение – стадия В); состав пленочного образца: полиэтилен + 0,1% масс. ирганокс 1010 + 1 % масс. оксида цинка

На рисунках 1 и 2 представлены данные по изменению значений коэффициента $K_{он}$ только в течение одного цикла испытаний трехстадийной обработки образцов. Как мы видим из данных рисунка 1, в первом цикле испытаний изотермическая обработка образца продолжалась 6,5 часов, что значительно меньше ИПО который для изучаемой концентрации антиоксиданта составляет 31 час. Из данных рисунка 2 следует, что стадия Б протекала для наполненного образца всего 4,5 часа, что также значительно меньше ИПО, который для такой пленки составляет около 65 часов. Установленные особенности изменению коэффициента $K_{он}$ на стадии охлаждения образцов (стадия В) повторяются для каждого цикла испытаний, проведенного на стадии ИПО.

Данные по динамике коэффициента $K_{он}$ при переходе от одного цикла к другому для обоих типов образцов представлены на рисунке 3 а, б. На рисунке приведены значения коэффициента $K_{он}$ в моменты окончания стадии изотермической термообработки расплава – *четные точки* (2,4,6,8…) и значения коэффициента $K_{он}$ в моменты окончания воздействия высокой температуры 150°С каждого нового цикла термообработки – *нечетные точки* (1, 3, 5, 7, 9…). На рисунке 3 пунктиром обозначена суммарная продолжительность изотермической обработки образцов в расплавленном состоянии. Как мы видим, время ИПО образца, содержащего синергическую смесь антиоксиданта ирганокса 1010 и оксида цинка, составило 65 часов, то есть в 2 раза больше, чем в присутствии только одного антиоксиданта.

В начальном положении (рисунок 3а,б, точка 1) образцы были впервые нагреты до температуры 150 °С и далее продолжалась их обработка при этой температуре (стадия Б). По завершению термообработки значение $K_{он}$ снизилось для ненаполненной ингибированной пленки (рисунок 3а, точка 2) и повысилось для

наполненной ингибированной пленки (рисунок 3б, точка 2). Следующая точка 3, за это время образцы прошли стадии охлаждения и повторного нагрева до 150 °С. Значение $K_{он}$ несколько выросло для ненаполненной ингибированной пленки, так как часть антиоксиданта из сорбированного состояния была вытеснена в дисперсную фазу (рисунок 3а, точка 3). При этом во время нахождения образца при комнатной температуре для наполненной ингибированной пленки значение $K_{он}$ снизилось (рисунок 3б, точка 3). То есть характер изменения коэффициента $K_{он}$ в образцах ингибированного полиэтилена с наполнителем оксидом цинка противоположное, чем в аналогичных образцах без дисперсного наполнителя оксида цинка. Далее вплоть до окончания ИПО (указан на графике вертикальной пунктирной линией) цикличность в изменении $K_{он}$ повторяется.

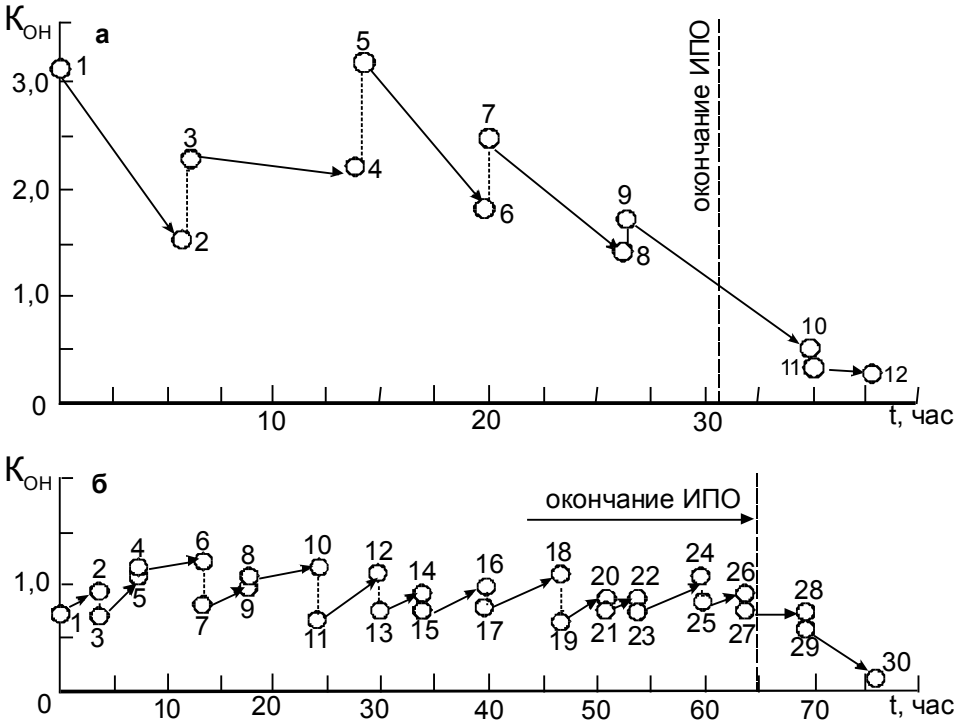


Рисунок 3 – Значения коэффициента $K_{он}$ от продолжительности изотермической обработки образцов полиэтиленовой пленки при температуре 150 °С.
Нечетные точки – значения коэффициента $K_{он}$ перед началом термообработки, четные – в момент завершения изотермической обработки.
Состав пленочного образца: а) полиэтилен+0,1% масс. ирганокс 1010; б) полиэтилен+0,1% масс. ирганокс 1010+1 % масс. оксида цинка

По окончании ИПО коэффициент $K_{он}$ значительно снижается в обоих типов образцов, так как в пленках начинают накапливаться продукты окисления полимера в виде карбонильных групп.

Заключение

В работе было изучено изменение структуры фенольного антиоксиданта ирганокса 1010 в составе ингибированной полиэтиленовой пленки (ненаполненный образец) и ингибированной полиэтиленовой пленки, наполненной оксидом цинка (наполненный образец), в условиях циклического термического воздействия.

Показано, что на стадии охлаждения образца (стадия В) происходит рост значений площадей полос поглощения S_{3640}, S_{3640} и коэффициента $K_{он}$ для обоих типов образцов. При этом коэффициент $K_{он}$ не достигал исходных значений в экспериментах с ненаполненным образом, а в

Установлено, что коэффициент $K_{он}$ на стадии изотермического термовоздействия (стадия Б) снижается для ненаполненного образца и возрастает для наполненного образца. Рост коэффициента $K_{он}$ свидетельствует о повышении концентрации гидроксильных групп относительно сложноэфирных в составе фенольного антиоксиданта, а, следовательно, об увеличении эффективности антиоксиданта или его регенерировании.

экспериментах с наполненным образцом – коэффициент $K_{он}$ превышал исходные значения. Это служит еще одним доказательством протекания процессов восстановления или регенерации антиоксиданта ирганокс 1010.

Выявленные особенности изменения коэффициента $K_{он}$ повторяются для каждого цикла термовоздействий, проведенного на стадии ИПО.

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Impact Factor:					
	ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
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	JIF = 1.500	SJIF (Morocco) = 5.667	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

Matlab Mohubbat Maharramov
doctoral student, Sumgait State University,
Sumgait, Azerbaijan Republic
nauka-xxi@mail.ru

SECTION 19. Management. Marketing. Public administration.

STRATEGIC DIRECTIONS OF PROVIDING FINANCIAL STABILITY OF THE ENTERPRISE

Abstract: *Strategic directions of providing financial stability of the enterprise are investigated in the article. Important elements and components on formation and development of financial stability of the enterprise are considered. The major factors which are seriously affecting financial stability in the organizations are analyzed. The main stages of process of formation of strategy of financial stability of the enterprise are given. Besides, types and desirable degree of financial stability of the enterprise are schematically given. It is turned attention to need of optimization of financial strategy of the enterprise. It is proved need of improvement of mechanisms of a system of formation on the movement of financial resources. The important criteria and measures strengthening financial a state are defined. A number of recommendations and offers on problems strategic directions of providing financial stability of the enterprise in modern conditions are generalized in the end of the article.*

Key words: *the strategic approaches of financial stability of the enterprise, basic elements of financial stability of the enterprise, major factors affecting financial stability of the enterprise, diversification of financial sources of the enterprise, important criteria and measures for strengthening of a financial state.*

Language: *Russian*

Citation: Maharramov, M. M. (2018). Strategic directions of providing financial stability of the enterprise. *ISJ Theoretical & Applied Science, 11 (67),* 240-245.

Soi: http://s-o-i.org/1.1/TAS-11-67-39 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.39

СТРАТЕГИЧЕСКИЕ НАПРАВЛЕНИЯ ОБЕСПЕЧЕНИЯ ФИНАНСОВОЙ УСТОЙЧИВОСТИ ПРЕДПРИЯТИЯ

Аннотация: *В статье исследованы стратегические направления обеспечения финансовой устойчивости предприятия. Рассмотрены важные элементы и компоненты по формированию и развитию финансовой устойчивости предприятия. Анализированы основные факторы, серьезно влияющие на финансовую устойчивость в организациях. Даны основные этапы процесса формирования стратегии финансовой устойчивости предприятия. Кроме того, схематично приведены типы и желаемая степень финансовой устойчивости предприятия. Обращено внимания на необходимость оптимизации финансовой стратегии предприятия. Обосновано необходимость совершенствования механизмов системы формирования по движению финансовых ресурсов. Определены важные критерии и меры, укрепляющие финансовые состояние. Обобщен и дан ряд рекомендаций и предложений по проблемам стратегических направлений обеспечения финансовой устойчивости предприятия в современных условиях.*

Ключевые слова: *стратегические подходы финансовой устойчивости предприятия, основные элементы финансовой устойчивости предприятия, основные факторы, влияющие на финансовую устойчивость предприятия, диверсификация финансовых источников предприятия, важные критерии и меры по укреплению финансового состояния.*

Introduction

В нынешних условиях вопросы и проблемы обеспечения финансовой устойчивости предприятия отличается актуальностью. После мирового финансового кризиса вопросы обеспечения финансовой устойчивости предприятия носит стратегический характер, так как развитие отдельных отраслей национальной экономики в целом зависит от финансовой устойчивости предприятий. Проблемы

финансовой устойчивости обуславливают создание более оптимальной стратегии управления финансовыми потоками предприятия и создания мобильной системы контроля за движением финансовых ресурсов. Более того, необходимо обеспечить адекватное отношение к финансовым ресурсам и эффективности финансовых источников предприятий по всем структурным подразделениям предприятия в ближайшей и долгосрочной перспективе. В этом контексте одним из ключевых вопросов считается осуществление диверсификации финансовых источников предприятий в условиях интенсификации глобальных экономических угроз. Более того, требуется разработка и реализация комплексных и системных мероприятий по повышению уровня финансовой устойчивости предприятия исходя от стратегических направлений деятельности. Немаловажное значение имеет обеспечение прозрачности использования и движения финансовых потоков, вопросы бухгалтерского учета и подготовка финансовых отчетов согласно принципам достоверности и объективности. Все эти факторы требуют осуществления глубокого анализа деятельности предприятия и, в первую очередь, его финансовой составляющей [1, с. 158].

Materials and Methods

В рыночных условиях проблемы финансовой устойчивости предприятий рассматриваются как одна из важных критериев экономической безопасности страны и поэтому очень важно, чтобы проблемы финансовой устойчивости предприятий решались системно и последовательно. По мнению Т.А.Ермашенко, финансовая устойчивость - это такое состояние финансовых ресурсов предприятия, которая позволяет обеспечивать его развитие при условии роста капитала и прибыли, поддержании необходимого уровня платежеспособности и кредитоспособности при допустимом уровне риска [2, с. 136]. Вопросы финансовой обеспеченности и устойчивости предприятий существенно повышает их инвестиционно-инновационную привлекательность перед потенциальными инвесторами. Но для этого необходимо, чтобы предприятие учитывало важные показатели финансовой устойчивости, которые сыграют существенный роль в повышении эффективности инвестиционной и финансовой политики предприятия, и в рамках этих задач финансовая служба и менеджмент предприятия должны адекватно оценить рациональность движения финансовых ресурсов, их источников и систему контроля за этими ресурсами. С этой целью финансовому менеджменту предприятия необходимо разработать и осуществить комплексные механизмы по пресечению финансовых угроз и рисков, по определению основных критериев финансовой устойчивости предприятий и укреплению ключевых механизмов обеспечения финансовой безопасности предприятия с нейтрализацией воздействий внутренних и внешних факторов, глобального экономического влияния. Необходимо предпринять более практичные меры по усилению финансовой устойчивости предприятия, обеспечить страхование финансовых рисков, сформировать более производительные источники финансовых поступлений, повысить роль финансового менеджмента с целью повышения эффективности финансовой стратегии предприятия [3, с.64]. Для успешной деятельности предприятия нужна эффективная и отлаженная система функционирования, которая в состоянии дать возможность оперативно принимать оптимальные управленческие решения, используя при них конкретный набор разработанных методов и эффективных инструментов их воплощения в деятельность [4]. Так, в современных условиях, при ограниченном количестве необходимых предприятию ресурсов, как трудовых и материальных, так и финансовых, руководство всех предприятий нацелено на максимальную выгоду, но даже эффективная система и ее организация не даст желаемого результата, если стратегия финансовой устойчивости этого предприятия не имеет в наличии эффективные инструменты ее реализации. Так, на Рис. 1 отображены основные этапы процесса формирования стратегии финансовой устойчивости предприятия основываясь на классическую структурную схему стратегии предприятия М.Мескона и дополненную по нашему мнению [5].

Рис.1. Основные этапы процесса формирования стратегии финансовой устойчивости предприятия.

Так, анализируя Рис. 1, можно сделать выводы, что цель формирования стратегии финансовой устойчивости любого предприятия заключается в том, чтобы построить гибкую систему, которая сможет адекватно реагировать на внешние и внутренние риски, возникающие перед руководством и менеджерами организации. Так, финансовая устойчивость предприятия - это способность предприятия продолжать свою деятельность в течении долгосрочного периода, получая при этом доход, достаточный для погашения дивидендов, дальнейшего воспроизводства потенциала и устойчивого развития. Кроме того, финансово устойчивое предприятие должно обеспечивать и экономически эффективный баланс финансовых источников и своих активов, соотношение поступлений и выплат денежных средств, несмотря на разного рода угрозы и риски [6]. Отметим, что в научной литературе различают 4 основных типа финансовой устойчивости предприятия и 4 типа вытекающего состояния ликвидности предприятия (см. Рис.2).

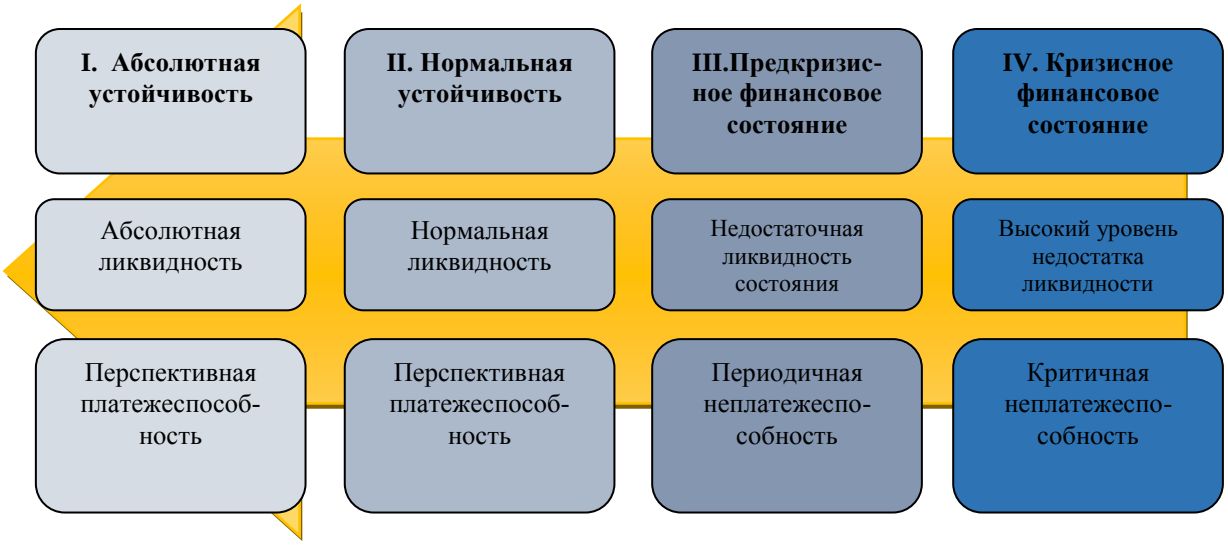

Рис. 2. Типы финансовой устойчивости предприятия.

Из Рис. 2 видно, что наиболее желаемая степень финансовой устойчивости предприятия, к которой, безусловно, стремится каждая организация, является абсолютная устойчивость, однако она же является и самым трудно достигаемым типом финансовой устойчивости.

Абсолютная финансовая устойчивость предприятия можно отразить следующим неравенством: совокупные запасы (З) и затраты ($З_т$) должны быть меньше собственных оборотных средств предприятия ($С_{ос}$):

$$З + З_т < С_{ос}$$

При таком типе финансовая устойчивость предприятие не зависит от внешних кредиторов - запасы предприятия покрываются собственными оборотными средствами.

Нормальную устойчивость финансового состояния предприятия можно характеризовать так:

$$С_{ос} < З + З_т < С_{ос} + П_д$$

где $П_д$ - долгосрочные пассивы.

Отсюда видно, что предприятие обладает нормальной устойчивостью при условии, что оно использует для покрытия запасов не только собственные оборотные средства, но и привлеченные долгосрочные финансовые средства.

Предкризисное финансовое состояние (неустойчивое финансовой состояние) - это такой тип финансовой устойчивости предприятия, при котором нарушена платежеспособность фирмы, однако имеются возможности ее восстановления:

$$С_{ос} + П_д < З + З_т < С_{ос} + П_д + КЗ_к$$

где $КЗ_к$ - краткосрочные кредиты и займы.

Здесь предприятие способно восстановить свою устойчивость и платежеспособность за счет уменьшения дебиторской задолженности, и увеличения оборачиваемости запасов.

И, наконец, кризисное финансовое состояние предприятия характеризуется неравенством:

$$С_{ос} + П_д + КЗ_к < З + З_т$$

Очевидно, что при данном типе финансовой устойчивости предприятие находится на грани банкротства по причине того, что вся совокупность финансовых ресурсов предприятия не покрывают его просроченных ссуд и кредиторской задолженности.

Следует подчеркнуть, что для оптимизации механизмов финансовой устойчивости предприятий, необходимо более тщательно разработать и осуществить методологические подходы по этим направлениям [7, с. 36]. В рамках оптимизации методологических подходов требуется четкое определение востребованных критериев усиления финансовой устойчивости предприятий, разработка механизмов предупреждающих и обеспечивающих разного рода рисков и финансовых угроз по обеспечению безопасности предприятия, прежде всего, негативно влияющих на интенсивность и рациональность финансовых потоков. Путем глубокого исследования и изучения требуется максимально выявить границы финансовой устойчивости предприятий с разработкой дальнейших адекватных мер по усилению финансовых составляющих механизмов предприятия. Кроме того, немаловажное значение имеет применение методологии прогнозирования уровня устойчивости и предотвращения угроз. На фоне этих проблем и факторов требуется разработка общих стратегий усиления финансовой устойчивости предприятия и увеличение степени ее адекватности по противодействию глобальным экономическим угрозам [8, с. 37]. Отметим, что элементы и факторы серьезно влияющие на финансовую устойчивость предприятия, в совокупности формируется за счет внешних и внутренних воздействий. Поэтому каждый элемент связан с финансовой устойчивостью предприятия, что обуславливает индивидуальный подход и особенное отношение к возникающим проблемам. В целом финансовая устойчивость - это есть комплексное понятие, в котором необходимо учитывать множественные проблемы и факторы, характеризующие адекватность финансовой системы предприятия в нынешних условиях [9,с. 65]. Кроме того, критерии финансовой безопасности предприятия рассматриваются во взаимодействии разных структур и подразделений по увеличению устойчивости финансовых механизмов и эффективности движения финансовых потоков. При этом очень важно своевременно исключить из числа финансовых операций те вопросы и проблемы, которые наиболее рискованные и представляют определенные угрозы для устойчивости финансовой системы предприятия. Наряду этими необходимо рационально использовать существующие производственные мощности и одновременно оптимизировать текущие затраты на разную производственную и коммерческую деятельность [10, с. 136; 11]. В вопросах определения уровня адекватности финансовой устойчивости важное значение имеет организация комплексного экономическо-финансового анализа предприятий [12, с. 214]. Объективные и достоверные анализы своевременно выявляет самые уязвимые стороны финансовой устойчивости предприятий, и дают возможность разработать более совершенную форму финансовой системы предприятия. Кроме того, в период проведения комплексного анализа одновременно исправляется допущенные ошибки, ликвидируется пропущенные неточности, проверяется достоверность ведения бухгалтерского учета и составления финансовых отчетов. Благодаря анализу существует возможность исследовать плановые, фактические данные, выявлять резервы повышения эффективности производства, оценивать результаты деятельности, принимать управленческие решения, вырабатывать стратегию развития предприятия [13]. Для повышения финансовой устойчивости предприятия необходимо обеспечить расширение производственной возможности и перечня структуры выпускаемой продукции. Как мы отметили, немаловажное значение имеет основные стадии планирования затрат на изготовление продукции и товаров и в связи этим требуется сформировать систему энергосбережения и режим экономики других

затратных статей. Более того, у предприятия должны быть оптимальные маркетинговые стратегии, которые способствовали бы удачной организации и выходу продукции на основные рынки и принесли бы прогнозируемую прибыль предприятию. Так же необходимо комплексно подходить к внутренним фактором, которые в большой степени влияют на усиление финансовой устойчивости предприятий, к таким фактором больше всего относиться структура выпускаемой продукции, форма собственности и отраслевая принадлежность предприятия, адекватность издержек и интенсивность поступающих оборотных средств, уровень имеющихся финансовых ресурсов и запасов. Вопросы оптимального прогнозирования эффективного движения финансовых ресурсов должны контролироваться адекватно требованиям нынешних внутренних и внешних угроз с осуществлением последовательных превентивных и действенных мер [14, с.14; 15]. Кроме того, в условиях трансформации существующих финансовых механизмов в мире, в том числе, на всех уровнях, предприятиям необходимо разработать более устойчивые и конкурентоспособные механизмы усиления финансового состояния предприятия. При этом особое внимание необходимо уделить инновационно-инвестиционным аспектам финансовой политики предприятий [16, с.203; 17]. Предприятия для обеспечения своей финансовой стабильности должны иметь продуктивные источники поступления финансовых ресурсов, которые могут решить проблемы формирования финансовых запасов и оборотных средств для финансирования текущей деятельности [18;19]. Каждое предприятие должно приложить усилия к сбалансированию своих дебиторских и кредиторских задолженностей и обеспечить снижение опасности, связанной с различными финансовыми рисками. Для этого требуется систематическое осуществление объективной оценки финансовой устойчивости предприятия. Оценка финансовой устойчивости предприятий в контексте эффективности проводимых мероприятий по дебиторским и кредиторским задолженностям и минимизацией издержек должны проводиться максимально объективно и с достоверным составлением финансовых отчетов. При этом особо нужно обратить внимание на повышение эффективности управления оборотными активами посредством оптимизации структуры источников финансирования оборотного капитала, согласования объема и темпа оборачиваемости кредиторской и дебиторской задолженностей, использования резервов, минимизации постоянных затрат предприятия [20, с.59].

Следует подчеркнуть, что за последние годы в Азербайджане принимаются действенные меры по финансовой стабилизации в стране, в том числе усиливаются проводимые мероприятия по повышению финансовой устойчивости на микроуровнях - предприятиях и компаниях страны. В стране приняты серьезные институциональные и структурные изменения по управлению финансовой стабильности и Указом Президента Азербайджанской Республики от 15 июля 2016 года создан Совет по Финансовой стабильности Азербайджанской Республики [21]. Кроме того, принимаются комплексные меры по расширению финансовых услуг и развитию финансовых рынков в стране. Так, Указом Президента Азербайджанской Республики от 06 декабря 2016 года утверждена стратегическая дорожная карта по развитию финансовых услуг в Азербайджанской Республике [22]. Исходя из стратегических целей по развитию перспективного сектора национальной экономики Азербайджана и развития финансовых услуг предприятиям необходимо принять серьезные мер по повышению финансовой устойчивости и обновлению действия нынешних финансовых механизмов [23; 24; 25].

Conclusion

Таким образом, в ближайшей перспективе предприятиям Азербайджана потребуются немалые усилия для формирования и развития более модернизированных и устойчивых механизмов повышения финансовой стабильности, минимизации финансовых рисков и существенного поднятие уровня эффективности применяемых финансовых механизмов в условиях роста глобальных экономических угроз и продолжения негативных последствий финансового кризиса в мире.

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Impact Factor:					
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	ISI (Dubai, UAE) = 0.829	РИНЦ (Russia) = 0.156	PIF (India) = 1.940
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	JIF = 1.500	SJIF (Morocco) = 5.667	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

Kamola Akramovna Mukhamedjanova
PhD student, department "Infrastucture development and logistics", Tashkent state university of economics, Tashkent, Republic of Uzbekistan

SECTION 31. Economic research, finance, innovation, risk management.

GENESIS OF THE CONCEPT OF SUPPLY CHAIN MANAGEMENT

Abstract*: The management of modern supply chains allows to reliably controlling the goods, as well as information and financial flows interconnected with them, from primary suppliers, producers and sellers of goods to final customers within a specified period and can be understood as a tool for preparing, conducting and completing business transactions. Supply chain management as a relatively young management concept has gained wide practical and academic recognition. It caused fundamental changes in a number of industries and transformed the nature of competition.*

This article discusses the concepts of supply chains and reviews various approaches to the definition of the term and structure of supply chains. Also, analyzes the main problems of the modern development of the concept of supply chain management.

Key words*: Management, supply chain, concept, information, flow, transformation.*

Language*: English*

Citation: Mukhamedjanova, K. A. (2018). Genesis of the concept of supply chain management. *ISJ Theoretical & Applied Science, 11 (67),* 246-250.

Soi: http://s-o-i.org/1.1/TAS-11-67-40 ***Doi***: https://dx.doi.org/10.15863/TAS.2018.11.67.40

Introduction

In practice and in theory, supply chain management is treated in a variety of ways - from simple coordination of sales and supply plans by several companies to a comprehensive concept of business management in the 21st century. This difference is caused, firstly, by the insufficient scientific elaboration of the theoretical and methodological foundations of supply chain management, the lack of classifications, etc., and secondly, the excessive abstractness of the available results due to the insufficient number of integrated formal methods and models that take into account the specifics of complex distributed economic systems. Many basic concepts of SCM have not yet been unequivocally defined and are interpreted differently by many authors, who, as a rule, are limited to an intuitive understanding of various terms. This leads to the lack of proper semantic unity in solving various problems of supply chain management, logical incorrectness, ambiguity in understanding the results of work and the scope of application of the proposed methods. In this regard, there is a need for a theoretical understanding of the complex interdisciplinary problems of supply chain management.

Theoretical aspects of definition "supply chain management"

Supply chain management is a relatively new management concept that has received wide practical and academic recognition. Many researchers agree that this concept not only became a catalyst for fundamental changes in a number of industries, but also transformed the concept of the nature of competition [1].

An indicator of academic recognition of supply chain management is the avalanche-like growth over the past 15–17 years, the number of publications in scientific peer-reviewed journals: from 49 articles in 1994 to 1105 articles in 2008 [2]. A large number of publications allows researchers to work on identifying trends and patterns in the development of the concept of supply chain management. Therefore, you can find articles whose authors aim to identify key areas of research in the field of supply chains [3; 4] or synthesize the general definition of the term "supply chain management" [5; 2]. In this regard, the work [6] (it was originally published in 2008 in the Journal of Supply Chain Management), and the article [7] supplementing it are quite timely and interesting, especially for Russian readers who

witnessed the rapid development of the concept supply chain management in recent years (see, for example, [8; 9; 10]).

The active interest of researchers in the concept of supply chain management is explained, in our opinion, by two main reasons. First, the concept of supply chain management claims an elegant explanation of the success of some innovative business models (for example, the business models of Zara, Dell, Wal-Mart, etc.), which is difficult to give within the framework of other management theories and concepts. Secondly, the concept of supply chain management is, in a sense, free from existing stereotypical solutions. By virtue of its "youth" and global nature, supply chain management seems to be the subject area of management research, the development of which can significantly reduce the current gap between the theory and practice of managing complex systems of relations between suppliers and customers.

Our task is not only to comment on the article published in this Chrestomathy, but also to analyze the main problems of the modern development of the concept of supply chain management: the definition of the term itself and the field of research. This will help the reader to better understand the context of published articles, in particular the work [6].

The concept of supply chain management is a "mix of different disciplines" [6]. It combines the tasks of logistics (minimization of costs in the logistics chain) and operational management (effective inventory management and production), marketing (focus on creating value for the customer) and relationship marketing (interaction with supply chain partners), as well as other disciplines. In this regard, it is obvious that it is only possible to explain how to manage the system of relationships and to achieve a general reduction in costs in the supply chain for a given level of quality of service to end users on the basis of an interdisciplinary approach. For a deeper understanding of why it is precisely supply chain management that sets such a beautiful and ambitious, but difficult task, an analysis of the evolution of supply chain management is needed (for a detailed analysis, see, eg: [11; 12].

The practice (and after it the theory) of supply chain management appeared in response to the new economic challenges of the late 1970s - early 1980s, when the macroeconomic characteristics of the global economy, stagnating after the energy crisis, demanded significant efforts to develop new management decisions and concepts [13]. At that time, one of the conditions for the survival of companies was to reduce logistics costs. At the same time, it quickly became clear that the reason for the substantially increased logistics costs was not so much the rising transport component as the high costs of creating and maintaining insurance stocks, writing off obsolete stocks or, conversely, under-received profit due to the lack of the necessary inventory levels to meet the increased demand.

These problems are signs of the "whip effect" (bullwhip effect) in the supply chain, the essence of which is that the partners do not have reliable information about real demand and are forced to create an insurance supply of materials and (or) finished products. The paradigm of core competencies that dominated the strategic management of the 1990s. [14], only aggravated the problem of the "whip effect", since the focus of the company on key competencies means taking non-core business processes out of its limits.

As a result, in most cases there was an increase in the number of links in the supply chain while reducing control over the activities of suppliers. The natural and logical solution was to organize a simple coordination of the flow of materials and finished products through the exchange of reliable information between partners in the framework of trusting relationships [15]. That is what it received the name of supply chain management and later developed towards the creation of more complex systems of coordination and integration of key business processes [11].

The modern supply chain differs from the vertically integrated corporation of the beginning of the 20th century. That consists of separate, formally independent (in fact, closely interrelated in the business process and therefore interdependent), focused on their core competencies of organizations, aiming to minimize total costs in the supply chain and maximize value for the end customer.

In applied and theoretical research, the use of an interdisciplinary in nature concept of supply chain management, along with the benefits provided, also engenders additional difficulties. So, while there is no common understanding and definition of the term "supply chain management". Authors use various definitions, sometimes contradictory [16]. The definitions contained in scientific articles largely depend on the initial position — logistics, operations management, marketing, or another discipline — the author adheres to. Thus, experts in the field of logistics and operational management focus on optimizing business processes [18], and marketing specialists at the level of service and value for the client [10; 17].

The attempts that have been made so far to arrive at a single definition have not yet been crowned with success. For example, in [2], the authors attempted to synthesize their definition, based on the analysis of existing ones: related systems that facilitate the direct and reverse flow of materials, services, finance and information from the manufacturer to the end user with added value

advantages, increasing profitability due to the growth efficiency and customer satisfaction [2]. However, the "synthetic" definition has its drawbacks: it is not focused enough and is extremely cumbersome.

Thus, at present, supply chain management as a management concept and scientific discipline at the stage of formation is distinguished by the presence of a variety of research paradigms, the widest variety of objects studied, as well as a marked predominance of work focused on practical business needs. All this suggests that the "hard" core of scientific discipline, determined by the presence of the research paradigm generally recognized by the academic community, cannot be considered formed in supply chain management. The scientific controversy of eminent scientists that has developed on the pages of the journal serves as a direct confirmation of this [8; 9]. The lack of a clear basic definition further hinders both the theoretical and practical development of the concept of supply chain management. It is impossible to create a coherent theory without a consensus on basic definitions.

The second, no less important from our point of view problem of the modern concept of supply chain management is the problem of the field of research. In [6], six shortcomings of modern studies were noted, the most significant of which, in our opinion, are the single-level nature of the studies, the small size of the samples and limited methodological analysis. The remaining problems are derived from those listed above.

The root cause of poor quality research is also the interdisciplinary nature and comprehensive nature of supply chain management. Indeed, the study of the supply chain, consisting of "three or more organizations" [5], requires significant time and financial costs. For this reason, mainly single-level studies are conducted; at best, dual relationships are investigated [6]. However, it is impossible to consider them as full-fledged research of supply chains. Rather, they analyze individual fragments of the supply chain, and the findings are extrapolated to the whole chain, which, in our opinion, is not always certain.

Studies in the field of supply chain management are often cases that describe the experience of an individual company or companies in a particular industry, usually automotive [18]. At best, cases are longitudinal in nature, such as the study of the interaction between the Norwegian Railways and a food supplier [19], which, however, is quite rare. The analysis of extensive samples in the study is even rarer.

In this regard, the findings of researchers are often based on unreliable data: at best, the conclusions do not have evidence, at worst - they are incorrect. Even neglecting a large sample that validates the results is characteristic even of key articles on this topic. So, article [17] is based on the opinion of managers of eight independent companies. The article [5] does not mention empirical research at all.

A way out of this situation could be to conduct research on supply chains (at least three of its links), based on extensive samples that are sufficient to draw reliable conclusions. In addition, the analysis of large amounts of information will require additional work towards the development of new data analysis methods, which should lead to a more accurate modern understanding of the nature of supply chain management, its problems and prospects.

On the other hand, the quality of research is also influenced by their limited scope - researchers ignore a large number of solutions successfully implemented by business. In [6] a list of 13 subject categories is presented, which classify those performed in the field of supply chain management research. The choice of this list, the authors argue that it is this classification used by the Institute for Supply Management. However, there are good reasons to believe that this list, officially recognized by the professional community, is by no means complete and leaves, in particular, new, rapidly developing areas of research in the field of supply chain management, outside the classification. Therefore, recently there has appeared quite a large number of works analyzing various aspects of the effectiveness of supply chains. This is evidenced not only by the large number of original studies published on the issues of measuring, analyzing and managing the efficiency of supply chains, but also by the appearance of general reviews of this area of research. Moreover, the themes of the works of this direction does not allow to refer them to any of the 13 categories specified in [6].

Local research in the field of supply chain management

In the work of F.R. Galimova, scientific proposals and practical recommendations for optimizing transport and logistics processes in the agricultural supply chains [20] were developed. According to O.G. Dilmurodova, the improvement of the mechanism for the formation of a modern logistics system for fruits and vegetables will give more results in the conditions of economic liberalization [21]. N.H. Burieva, in her work, focused mainly on studying the methods and forms of organizing and managing supply chains based on economic mechanisms in order to ensure the efficiency of agricultural enterprises [22]. In the work of M.Sh. Mamatkulova, provided scientific advice on the organization and improvement of logistics costs in supply chains [23]. Unlike previous works, O.A. Kamalov considered the contractual relationship between specific actors in the supply chain [26].

Conclusion

The systematic nature of the authors' analysis of a ten-year period of publications on supply chain management with a carefully defined methodology for selecting articles for subsequent consideration can serve as a model that should be followed when performing this kind of research.

The concept of supply chain management is a broad concept and covers the entire process from the manufacturer to the final consumer. In the literature review above, various aspects of supply chains are considered, but in my opinion, one of the main tools for the comprehensive improvement and development of supply chains is the information support system. That is, the use of various digital technologies: Big Data, IoT (Internet of Things), cloud services, in a word, the digital transformation that is occupying a major position in the economy as a whole, raises the process of supply chain management also. Digital supply chain management is in line with current trends in business and information technology, which will allow companies to gain new competitive advantages and increase the level of cooperation and transparency in the supply chain.

This work not only eliminates the lack of detailed and high-quality review articles in Russian scientific journals on supply chain management, but also sets challenges for future research on outsourcing in the context of supply chain management.

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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

SECTION 31.Economic research, finance, innovation, risk management.

Madina Faridunovna Rajapova
PhD student "Information systems and technologies in Economy" department, Tashkent state university of economics, Tashkent, Republic of Uzbekistan

FOREIGN EXPERIENCE OF THE INTELLIGENT PRODUCTS AND SERVICES MARKET DEVELOPMENT

Abstract: *Innovative development of the country, the spread of knowledge in the economy are the main directions of the rapid development of the country's economy, which should be noted on the economies of the developing countries of Asia. The article analyzes the ranking of world countries in various areas that have a direct impact on the development of the market of intellectual products and services. And it also proposes to consider the stages of development of the market of intellectual products and services on the impact of Information and communication technologies.*

Key words: *Intellectual products, Asian economy, ICT, innovation, Uzbekistan.*

Language: *English*

Citation: Rajapova, M. F. (2018). Foreign experience of the intelligent products and services market development. *ISJ Theoretical & Applied Science, 11 (67),* 251-259.

Soi: http://s-o-i.org/1.1/TAS-11-67-41 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.41

INTRODUCTION

Humanity is facing a time of global reformation on the basis of modern information and communication technologies. During this period, new levels of quality and change have taken place in all sectors, particularly in economics and governance, science, security and other areas. In addition, changes in the social and economic spheres through digital technology have a long-term outlook. It should be noted that the transition to digital economy can not be undermined and the country which is unable to adapt to it is left out of development.

Today's high-tech macro-technology has been in all areas of our life and could not able to imagine any development trends without modern information technology and automated systems. In particular, the market of intellectual products and services includes macro technologies, artificial intelligent, automated databases, e-business and other automated systems: work with big data, cloud technologies, use of modern information technologies and systems such as block chain technologies, have developed their own patterns of development in the world's developed countries. Which will be base to developing countries in Central Asia.

LITERATURE REVIEW

Noticeable that our society has faced a new paradigm, and it has been concluded that the concept of transformation of countries into their national innovation system and digital economy should be promoted and modernized in the competitiveness of the national economy [3]. According to scientific sources, Austrian scientist Schumpeter, Joseph A. is one of the first scientists to investigate innovation issues and believes that the new markets can be improved by improving the production of new techniques and technological processes; development of new types of products; use of new raw materials; modernization of production and improvement of organizational issues and provision of new innovative products. This methodology suggests a study of the industry and has thus defined directions of the industry [4]. In particular, according to the scientist, the innovative approach to economic activity has determined the level of development of the economic system at any given time and, according to his doctrine, can achieve economic growth through the optimization of innovation activities and the use of small business and entrepreneurship.

Another group of economist scientists: Adam B. Jaffe, Josh Lerner, and Scott Stern [5], in contrast to the idea of Schumpeter, has demonstrated its internal factors as the cause of rapid economic

growth due to innovation in emerging economies through innovation activity. They point out that transnational companies - large companies - play a major role in ensuring economic growth.

The concept of intellectual products and services has been introduced since the late 1990s, based on the literature review, there is no conceptual conclusion about the term of intellectual product. T.I. Volkova [6], I.A. According to Ivanyuk's ideas, intellectual products are merely the product of creative work, including discoveries, patents, scientific works, reports, lectures, methodologies, concepts, projects, technology descriptions, various literature, musical developments and so on.

According to B.V.Drozdov [7], the intellectual product is a collective work product that believes that the product can not be a commodity, but rather as a personal heritage rather than a personal heritage. V.F. Popondopulo [8], on the contrary, looks at the intellectual products as a commodity, and claims that they must operate according to the laws of the market economy, like other commodities.

American scientist Thomas R. Demark believes that the intellectual product is a broad concept, a product or service, which is sometimes thought to be a product of human intellect, which has a material shape and a lifetime. It should also be considered that the intellectual product is not only a collection of consumer-to-consumer relationships but also a product that has a natural-historical category that combines information, science, and production experience.

V.A. Shvandar i V.Ya. Gorfinkel [9] considers that the product of intellectual product is inappropriate. The Russian scientist A.B.Ilin shares the distinction between intellectual products and goods into three main categories: first, the product is a form of commodity, but intellectual products are not always necessary. Secondly, after the consumption, the intellectual product does not lose its effect, in contrast with traditional commodities. Thirdly, on the basis of the value of the intellectual product, it is said that individual intellectual work, rather than general resources.

In this field there are some gap in distribution intellectual products and services, which could address by using modern Information communication technologies and automated systems.

ANALYSIS AND RESULTS

Experience of countries with a high degree of international stability and aspiration for stability in the world economy is crucial for developing countries. Table 1.1. shows the World Economic Outlook in 2018 and other sources, the top ten countries in the World Economic Outlook and neighboring Central Asian countries.

According to Table 1.1, the China, the United States and India have three strong economies in 2018, but the Global Innovation Index for 2017 has the highest levels of innovation in the US, Japan and Switzerland. It is noted that some of countries from Central Asia has potential to be in this Index, however it seems to low Index ranking in the World. To address this issues Government of Uzbekistan created Ministry of Innovation Development of Republic of Uzbekistan, which working on innovation in country and developed map of activity to improving this field.

One of the world's top analytical rating points is the Global Innovation Index (GII), which annually publishes the quality rating of innovation in the high and middle income economies. (Figure 1.1) The above-mentioned World Leading States have achieved remarkable results both in socio-economic, cultural and spiritual aspects, as well as in recent years. The Global Innovation Index is rapidly changing and it is difficult to see stable growth rates. For example, according to 2017, South Korea has taken the 7th place in the world rankings, and 2018 data is down 11 degrees, but can be seen from a steady growth in economic growth. This rating does not include the countries of Central Asia, Uzbekistan, Turkmenistan and Afghanistan.

1.1-table. The World Economic Outlook in 2018.

№	World Economic Ranking	Country	GDP Gross Domestic Product (US $ million)	Global Innovation Index (World Ranking)	Online sales volume (USD)	Online Trading Percentage (%)	Human Resources Index (World Ranking)
1	1	China	23,300,782	53.10 (17)	672	15.9%	0.752 (86)
2	2	USA	19,390,604	59.80 (5)	340	7.5%	0.924 (13)
3	3	India	9,448,659	35.10 (57)	20	2.2%	0.640 (130)

4	4	Japan	5,562,822	55.00 (13)	79	5.4%	0.909 (19)
5	5	Germany	4,193,922	58.00 (9)	73	8.4%	0.936 (5)
6	6	Russia	3,749,283	37.90 (46)	20	2%	0.816 (49)
7	7	Indonesia	3,242,768	29.80 (85)	7	3%	0.694 (116)
8	8	Brazil	3,240,524	33.40 (64)	19	2.8%	0.759 (79)
9	9	Great Britain	2,896,833	60.10 (4)	99	14.5%	0.922 (14)
10	10	France	2,871,264	54.40 (16)	43	5.1%	0.901 (24)
11	14	South Korea	1,969,106	56.60 (12)	37	9.8%	0.903 (22)
12	41	Kazakhstan	476,366	31.40 (74)	3.6*	5%*	0.800 (58)
13	61	Uzbekistan	222,338	-	-	-	0.710 (105)
14	81	Turkmenistan	103,604	-	-	-	0.706 (108)
15	97	Afghanistan	70,368	-	-	-	0.498 (168)
16	128	Tajikistan	28,373	26.50 (101)	-	-	0.650 (127)
17	136	Kyrgyzstan	23,104	27.60 (97)	-	-	0.672 (122)

*Source: * - PPRO Payments & E-commerce Report of Kazakhstan*
https://www.business.com/articles/10-of-the-largest-ecommerce-markets-in-the-world-b/ www.statista.com
author's development on the basis of information available

These rating indicators are identified by several factors, such as the quality of universities (the top three universities enter TOP three), the number of patents (registered at least 2 organizations), the index index "N" and other similar innovations. According to the Global Innovation Index, the United States, Japan, Switzerland are world-class leaders, and China, India and Russia are in the middle-income countries.

Based on the above mentioned information, automation of national innovation systems of the modern country, digital technologies development, innovation development and improvement of a particular industry are a new way of solving old problems. The intensification of scientific and technical results in various industries, the current scientific and technological results, the increase in students' access to intellectual products and services leads to increased worldwide interest in intellectual property, inventions, modernization methods and innovations. The introduction of macro-technologies and intellectual products and services in the economy serves to the development of new goods and services, high quality of goods and services, radical modernization of production, competitiveness and leadership in the world market.

The trend towards high technology production is related to developed countries, and the World Bank can identify world leaders by rating system (Figure 1.2).

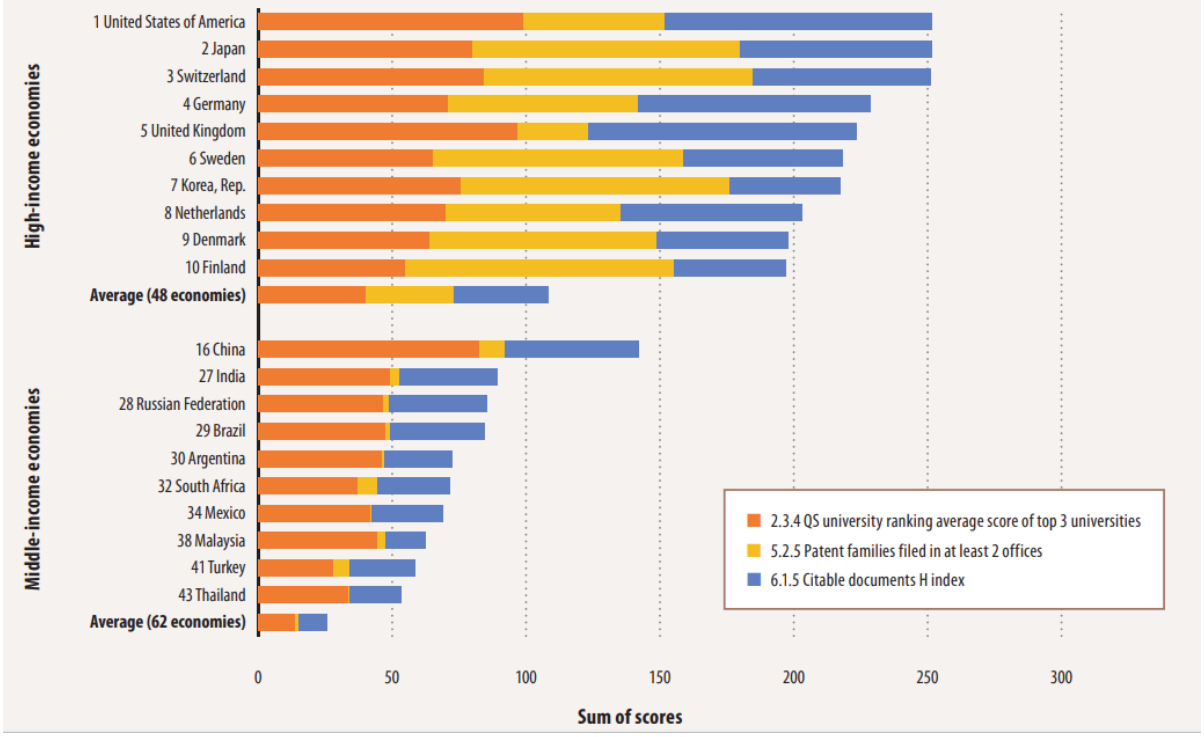


Fig. 1. Country of innovation quality in high and middle income economies.
Source: GII 2017 data. (https://www.globalinnovationindex.org/)

In countries of the world, there are many patents in the United States, China, Germany, Japan, Great Britain, France, and Sweden. According to Figure 1.5, the European Union has a worldwide leadership in terms of export of high technologies, and in the United States and the United Kingdom, sustainable growth can be seen. It is also seen that the People's Republic of China has grown stronger since 2000 and is leading the way. It should be noted that the level of export of high technologies in Central Asian countries, in particular, in Uzbekistan.

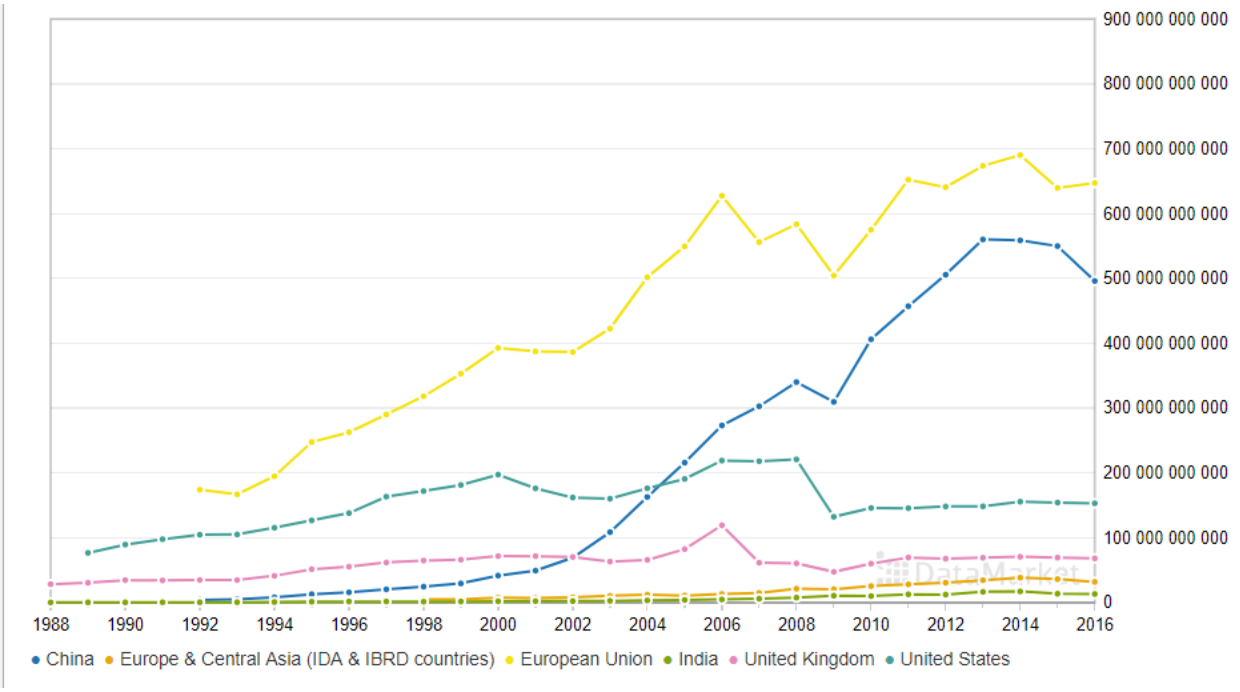


Fig. 2. Exports of high technologies in the world's mainstream countries and countries in 2016 (USD million)
Source: World Bank

To analyses innovation situation and address issues in Central Asia, was chosen main countries in Asia, because their economy, culture, some problems similar with Uzbekistan. For example, the reforms aimed at the acceleration of China's socio-economic development began in 1978 and created enormous opportunities for further development of the state. China, as well as Japan, has managed to establish a modern industrial network since its acquisition of patents, licenses from abroad, of its innovative development. Based on a step-by-step model of transition to an innovative economy in China, [14] the following steps have been taken in this process:

Phase 1 - 1978-1984, this phase was called a secret process and at that time the foundations of the territorial innovation system were created;

Phase 2 - Including 1985 to 1995, regional innovation system developed;

Phase 3 continues to be in the form of regional innovation systems since 1996.

In China, the market economy, its mechanisms are developing and improving, and the market competition and cooperation environment is intensifying. Businesses are increasingly paying close attention to issues of cooperation and labor dispersion. The cooperation, based on the chain of "production - university activities - scientific research" has been expanding and expanding more widely. Independent innovative activity of enterprises allows rapid development and creation of regional innovation systems.[15]

The specific principle of China's innovative development is evident in the fact that it attracts investments from abroad and acquires ready-made technology, introduces its own innovations and produces high-tech brands. The Strategic "2006-2020 Plan" was the government's attempt to build a Chinese model of growth and turn innovations into the foundation of future economic development.[16]

India has been focused on reducing the risk of innovation by building infrastructure, providing technical, informational and methodological assistance as well as attracting public funding for innovative development of the economy. In the process of expanding its operations to the Companies, the Technology Development Council, established by the Government of India in 1996, helps.

One of the key elements of Indian innovation is technology parks and incubators. Supporting these organizations is one of the most important tasks of the state.

The Indian government has a dedicated agency that promotes science and technology parks, science, and technology. India pays great attention to the creation of a common legal framework for innovation, and in 2008, the Indian government adopted the "National Innovation Act" in the field of innovations. About 80% of the country's exported and exported 45 technology parks belong to the IT sector. The world's leading 300 transnational corporations are implementing and implementing computer programs

Based on the analysis of some aspects of national innovation development systems, developed countries can be divided into general and specialized groups of existing mechanisms. Mechanisms that affect the institutional environment of the common mechanisms and the specific mechanisms address specific sectors of the economy. These include education, labor market, international trade policies, and so on.

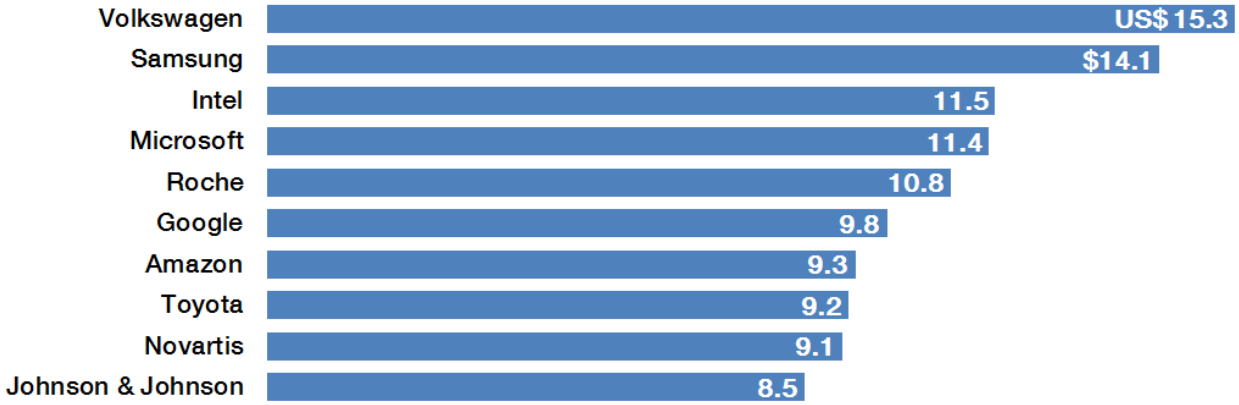


Fig. 3. The volume of scientific research by large companies of the world is 2015. (USD million)
Source: PwC

It should be noted that, in the world experience, the tendency of the large companies to invest in scientific research and experimental constricting development is growing. As illustrated in Figure 1.4, the Volkswagen car manufacturer has invested $ 15.3 million and South Korean Samsung, $ 14.4 million, for the company's research.

The formation of the intellectual products and services market is based on the past, but as outlined in Figure 1.5, as the modern free-style interpretation, the following key stages of the market of intellectual products and services are offered:

Stage 1. Real Estate Stage. (1960-1980) to establish its formation stage with the establishment of the World Intellectual Property Organization (WIPO), based on a set of documents, intellectual property and services have been legally protected, that is, to look at them as products and to establish trade relations. This organization was established in 1967 and is now considered as one of the key United Nations organizations in the field. The WIPO contributes to new agreements, modernization of national legislation, international cooperation on interstate administrative cooperation, inventions, symbols and industry. The main objective of this phase is to develop scientific and technological progress in the post-World War II military-technical recovery.

Stage 2. Must be included as an independent research object. (1980-1990) The study of science and the exact area corresponds to the 90's of the 20th century. Sectoral literature, research, and period of development recognized by world scholars as prospective directions of development are the basis of this stage of economic growth, global competitiveness. The complex socio-economic situation also has a positive impact on the development of the industry, as it is best to rely on scientific research to overcome the economic crisis.

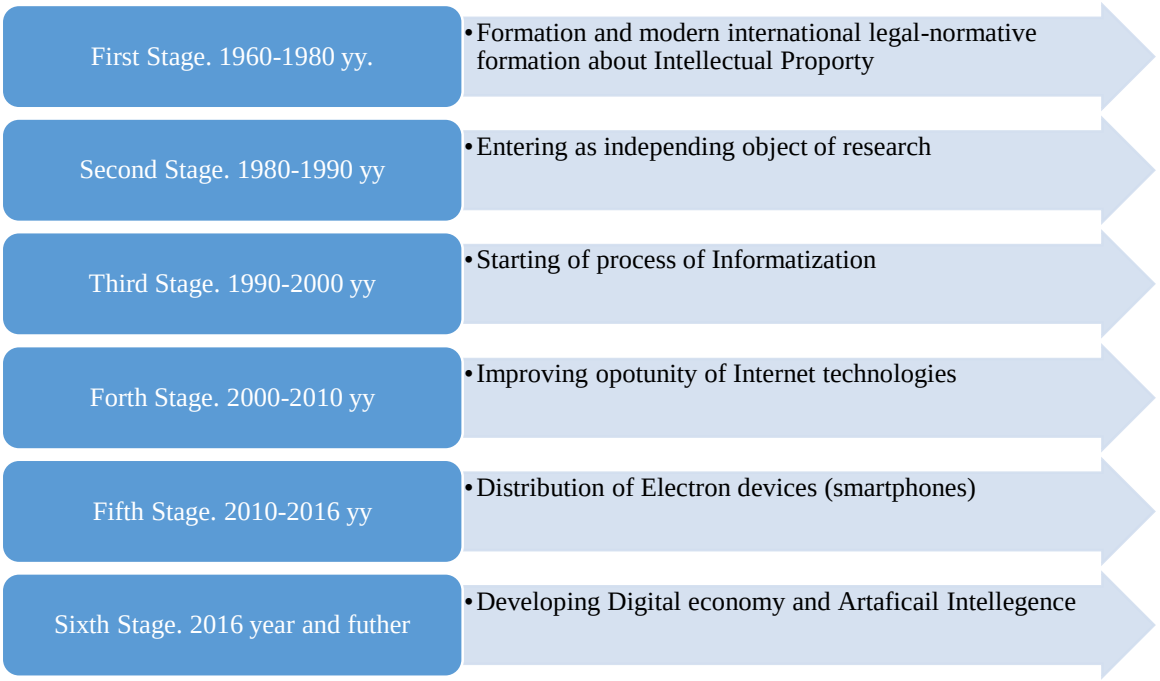


Fig. 4. Stages of formation and development of the market of intellectual products and services
Source: author's description based on the literature studied

Stage 3. Starting the Informatization Process (1990-2000) With the start of commercialization of PCs and the discovery of the Internet for a wide audience, this stage is characterized by a new, momentous stage in the development of intellectual products and services market. In other words, the processes of electronic information processing, the electronic analogue functioning, the transformation of paper documents into electronic documents appear in the socio-economic life of the society. As a result, new methods of electronic storage and transfer of step-by-step intellectual products appeared.

Stage 4. Improvement of Internet technology capability (2000-2010). It should be noted that during this period ICTs and widespread use of the Internet have positively affected the development of this market, ie the possibility of diffusion of intellectual products and services. This period is characterized by the marketing and popularization of intellectual products and services, and the

development of intellectual databases such as SCOPUS, WEB of SCIENCE, and ect.

Stage 5. Spreading of electronic devices (smartphones) (2010-2018). The main goals of this phase are to provide scientific and technical information that will help address socio-economic issues in information services, medicine, ecology and other relevant topics, as a result of widespread use of smartphones, social networks and messengers (FACEBOOK, MENDILEV, TELEGRAM, ODNOKLASSNIKI, etc.) the product or product was first searched on the Internet and then purchased by other means. There is also an increase in the market of intellectual products and services, but there are problems such as information security and reliability.

Stage 6. The stage of digital economy and artificial intelligence development. (2018 and the near future) Humanity is facing a time of global reformation on the basis of modern information and communication technologies. During this period, the industry will have new quality steps and changes, particularly in economics and governance, science and security, and so on. It should be noted that the transition to digital economy can not be undermined, and whoever is unable to adapt to it is left out of development. One of the main problems of digitization is rapid unemployment, because automation of workplaces, robotics and artificial intelligence, which require a lot of secondary special skills. At the same time, new areas are created and the demand for modern professionals is growing.

Regulatory information, the efficiency and reliability of the business, has been achieved through the use of modern ICTs, as well as real-time sales of smart products and online services.

Through the stages of development of the above mentioned intellectual products and services market, we can see the sharp impact of the technical and technological revolution on the market, and there are positive and negative aspects. On the positive side, it can be seen that information security issues have a negative impact on the expansion of marketing methods.

CONCLUSION

The above-mentioned states have found themselves in the solution of problems: in which one state is focused on providing state support to scientific research, and in another one is given tax breaks to innovators, and there are different approaches to the support of inventors - innovative product developers. The experience of overseas states can be understood by the direct and indirect involvement of the states in their innovation activities, as well as through the creation of an indirect assistance and innovative infrastructure.

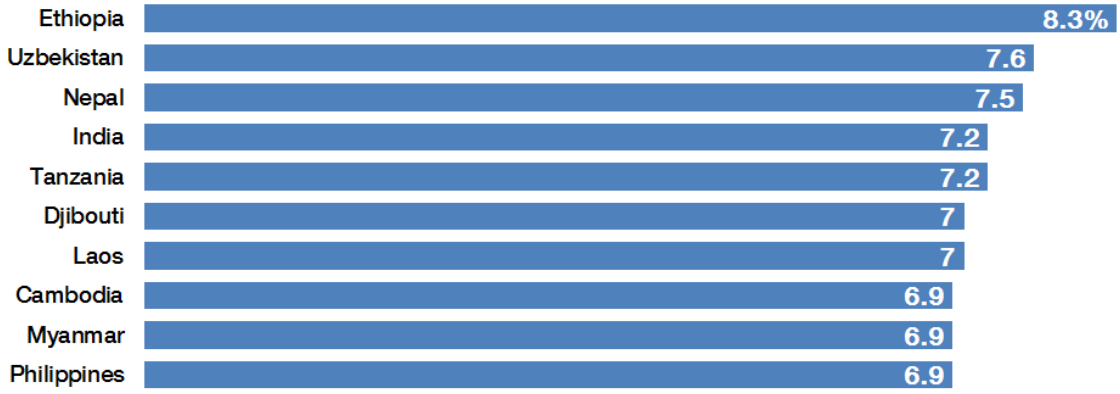
The following factors can have a positive impact on the establishment and development of the national innovation system to ensure economic growth on the basis of innovative development:

- Innovative and consistent implementation of innovative policy, which is embodied in the concrete goals and objectives of the state;
- systematic collaboration between private, research and education sectors;
- development of programs aimed at commercialization of innovations;
- technoparks, venture financing, innovation centers

construction;

- Learn and implement best international best practices and so on.

Thus, based on the analysis of the innovative development system of developed countries, it is possible to conclude that the national innovation system should be constantly upgraded and sustained to ensure sustainable economic growth and competitiveness of the country. For many models, we can see that some innovation systems have a partial and some state role. In general, we can say that transition to innovative development of countries is of paramount importance, such as free education (Germany), higher science expenditure (Germany, Finland). It is possible to achieve high rates of economic growth through effective use of the experience gained from the dynamic development of the developed countries (China, South Korea) for a certain period of time. It is also possible to realize that the economic policy, which has been implemented gradually, is appropriate for the domestic and external capacities of the country.



Fugure 1.6. The list of the fastest growing economies in the world by 2017
Source: World Bank

Based on world experience, we can say that with the support of small innovative enterprises and large companies, they can also achieve positive results. It is desirable to work together in a complementary fashion. From the experience of the world, we can see that there is no single model of innovation economy in the world. Each country has chosen its own model of transition to a knowledge-based economy. In the most developed countries of the world, which has been experiencing commodity-money relations for several centuries, the issue of transition to an innovative economy has not been spontaneously implemented.

To support and improve research and development, innovation and the knowledge economy as a whole, we offer the following forms:

first, it is necessary to improve legislation, in accordance with the international standard, to develop preferential systems for small businesses and private enterprises engaged in research and development;

secondly, the development of methods and mechanisms of organizational and structural support, this mainly concerns the regions of the Republic of Uzbekistan, and the infrastructure is more developed in the capital;

thirdly, sustainable financial and economic support, attracting investment in the field and active participation in international grants;

fourthly, information and communication support, infrastructure development and database improvement;

Fifth, the involvement of gifted personnel in R & D. Do not give the possibility of "brain drain" from leading scientific industries.

In conclusion, we can say that the knowledge economy in Uzbekistan is developing evolutionarily, achieving the majority of positive results in recent years after the formation of the Action Strategy on the five priority directions of development of Uzbekistan in 2017-2021, as well as negative factors that need to be improved in the near future.

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Impact Factor:					
	ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 0.829	РИНЦ (Russia) = 0.156	PIF (India) = 1.940
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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

SECTION 31.Economic research, finance, innovation, risk management.

Gulyora Bahtiyarovna Shanazarova
PhD, assistant of "Management" department,
Tashkent state university of economics,
Tashkent, Republic of Uzbekistan

ANALYSIS OF THE ORGANIZATION AND MANAGEMENT OF INNOVATION ACTIVITIES IN UZBEKISTAN

Abstract: *In the paper analyzed trends in the development of innovative activities in Uzbekistan. In particular, statistical material was collected for 2010-20216 for the production of an innovative product in the country. In addition, the costs of organizational, technological and marketing innovations by source of funding were thoroughly analyzed. At the end of the article, the author developed a conclusion and recommendations.*

Key words: *innovation, industry, technological innovation, marketing innovation.*

Language: *English*

Citation: Shanazarova, G. B. (2018). Analysis of the organization and management of innovation activities in Uzbekistan. *ISJ Theoretical & Applied Science, 11 (67),* 260-265.

Soi: http://s-o-i.org/1.1/TAS-11-67-42 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.42

INTRODUCTION

In today's world of globalization and sharp competition, more than 65 percent of all furniture industry worldwide accounts for more than 50 percent of all industrialized countries, of which more than 50 percent of manufactured furniture products are from the seven countries - USA, Italy, Germany, Japan, Canada and France, and the remaining 35% share in developing countries. In the current period, due to the active participation of Latin American, South East Asian and Eastern European countries, the future growth of furniture production by developing countries is expected, in particular, in recent years, furniture production has grown rapidly in China and Poland. About 86% of the total furniture is household, of which 20% are soft furniture, and 14% are enterprises, offices, hospitals and restaurants. [1]

Based on the positive experience accumulated in world practice, scientifically-based recommendations and recommendations on improving the scientific basis for increasing the efficiency of innovation capacity management mechanisms at the enterprises of the Republic of Uzbekistan on the basis of the experience of foreign countries on the basis of experience of foreign countries in the local furniture manufacturing industry development is one of the most pressing issues of today.

A number of positive steps have been undertaken in Uzbekistan to improve the national furniture industry, develop the markets for furniture production and sales, actively attract foreign investments and innovations, deepen the processes of modernization and diversification of production. Today, furniture and woodworking industries are one of the fastest growing industries in the country. If 5-8 years ago 65-70% of the domestic market was formed by foreign manufacturers, today almost 90% of the market is satisfied by our high quality local products [2]. One of the most important priorities of the Strategy for socio-economic development of the country for 2017-2021 is the increase in the share of the national economy, accelerated development, modernization and diversification of high-tech industrial sectors, complex and Effective access to information [3]. Effective implementation of these tasks requires the improvement of innovative management capacities in the furniture industry of our country.

LITERATURE REVIEW

The assessment and management of innovation capacities of industrial enterprises, socio-economic aspects of innovation potential and theoretical-methodological aspects, and management mechanisms have been explored in the work of many economists and politicians.

M.Dodgson from foreign scientists [4], G.Grossi, J. Genri, D.Uolker, P.Druker, M. Porter, X. Mintsberg, T. Burns [5], G. Stalker, B.Taker [6], Y. Schumpeter [7], F.Vestley [8],

A. Afuax [9], A. Gomeringer [10], L. Libutti et al. Has widely covered the issues of modern theory of innovation management, strategies, use of innovative management technologies in ensuring competitiveness of small businesses.

I.Afonin from the CIS scholars [11], E. Theoretical and methodological problems of innovation management in the work of Balatsky [12], G.Gamidov, P.Zavlin [13], S.Ilenkova [14], A.Trifilova and other scientists have been studied, theoretical and practical analysis of innovative potential, innovative capabilities and their types, classification, structure and structure, concept of authorship and other problems of V. Barangheeva, V.Gunina, G. Jitsa, D.Kokurina, O.Korobeynikova, V. Moseyko, R.Fatkhutdinova, I.Shlyaxto scientific studies of scientists.

The work of scientists such as A. Trifilova, T.Gileva, V.Anshin, A.Bovin, R.Fatkhutdinov, V.Barancheev, I.Shylaakhto, V.Abramov to evaluate the problems of innovative potential development directly at industrial enterprises, as well as influence of various factors in its development .

Taking into account the national peculiarities, the scientific and theoretical bases of the development of innovative potential in the economy of Uzbekistan, in particular, direct industrial enterprises, have been accumulated by B.Khodiev, S.Gulomov, N.Yuldoshev, A.Bekmuradov, M.Ikramov, Sh.Zaynutdinov, M .Makhbova, R.Nurimbetov, Sh.Mirsaidova, Y. Goldman's works are widely covered.

Also, Sh.Mustafakulov [15], a researcher from one of the republic's researchers, analyzed the existing methods of evaluating the socio-economic and innovative potential of the regions, Kh.Mukhitdinov's institutional approach to the analysis of innovation potential development and development, U.Gofurov's contribution to the introduction of innovative ideas , I.Umarov, S.Saidkarimova, Sh.Oblakulova, analysis of innovation potential of industrial enterprises, A.Kakhhorov - innovation in automobile transport enterprises and its assessment, B.Ro'ziev studied some theoretical-methodological issues of innovative development in the system of higher education.

However, in the above-mentioned authors' scientific works, theoretical aspects of the evaluation and management of innovation capacities are presented, but the inadequacy of this situation prevents the application of the theory in practice. Also, despite the studies in many areas of the theory of innovation, insufficient attention has been paid to the analysis of criteria for innovative capacities and methods of evaluation, factors that determine innovative capacities, and the effectiveness of innovative enterprise management mechanisms.

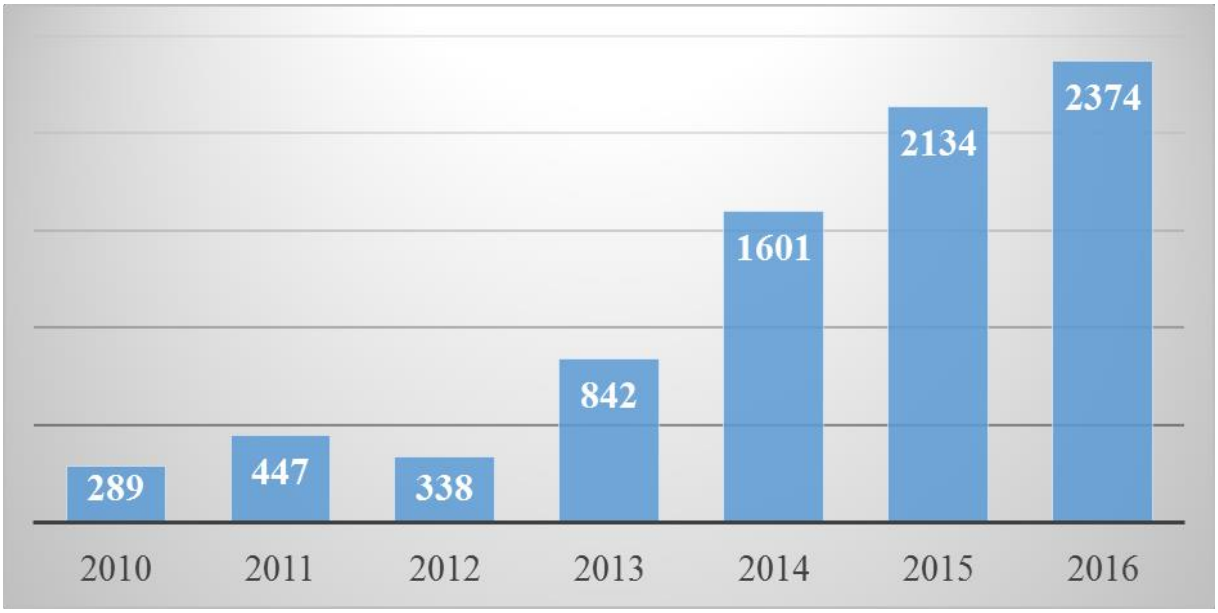
In addition, there are no fully-fledged and well-defined methods for assessing innovation capacities in industrial enterprises directly in the country, and there is a need to explore the innovative potential of the furniture industry and to explore the socio-economic essence of the industry, and develop innovative methods of assessment in the industry, The innovative capacities of the enterprise's enterprises have been studied as independent research objects unsold.

ANALYSIS AND RESULTS

One of the important directions in the country is the modernization of economy, technical and technological re-equipment of production, development of entrepreneurship on the basis of localization, filling the domestic market with import-substituting and export-oriented goods, increasing the incomes and employment of the population.

In turn, this contributes to the development of innovative activities and capacity building in our country. As a result, the number of enterprises and organizations producing innovative products and services is increasing every year. However, the modernization of production requires not only modernization of existing technologies, but also an innovative approach to management.

Taking into account the above, we will analyze the development of innovation activity in the country on the basis of statistical data. The dynamics of the enterprises producing goods, works and services for the overall assessment of the process in 2010-2016 (Fig. 1).



Picture 1. Total innovative products, jobs, services manufacturing enterprises.

The number of enterprises producing innovative products, works and services has increased 8.2 times over the last 7 years. That is, in 2010, there were 289, and by 2016 we could see 2374. The first stage of innovation development, that is not very high in 2010-2012, can be observed, however, in 2013-2016.

In the recent years, innovation in our country has a quantitative growth trend, but for a more in-depth analysis of this process, we will analyze the change in the number of first-time enterprises in the reporting year and their ratio to total number of innovative products, works and services (Figure 2).

The number of first-time enterprises in the reporting year

In 2012 and 2016, there was a steady upward trend, with an increase from 229 to 925. However, it reached the highest level in 2015 and reached 1207. These indicators testify to the development of innovation in our country. However, if we make comparisons with our analysis, we face a different situation.

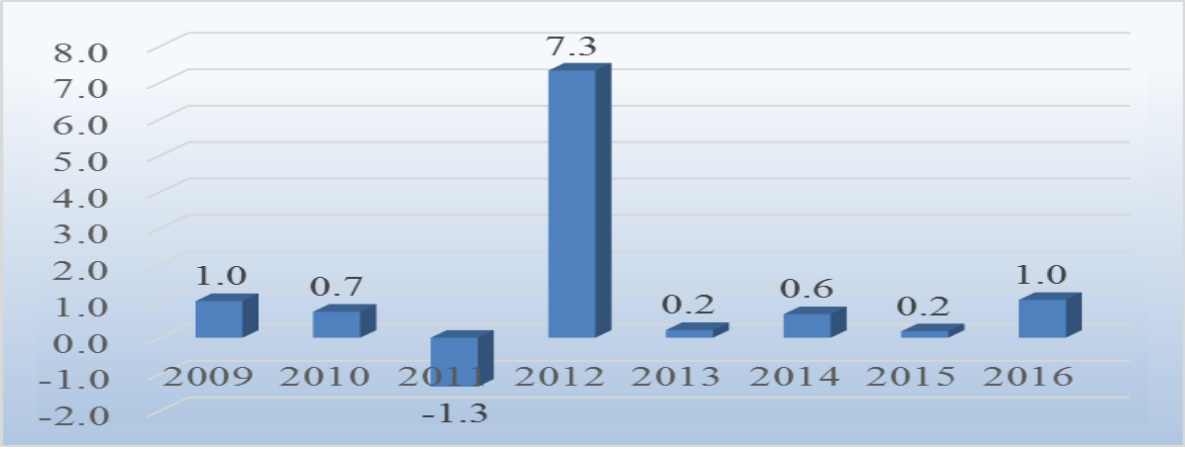
For this purpose, we have identified the share of first introduced enterprises in the reporting year and their total number of innovative products, jobs and services. If we look at the dynamics of this indicator, it is 79.2% in 2010 and 39% by 2016. The major downturn here has been in the past three years, and we can observe a sharp decline in 2016.

This can be natural, since the increase in the total amount has led to a relative decline despite the quantitative increase in the number of first-ever-assembled enterprises in the reporting year. However, the decline in comparison with the previous year in 2016 can not be explained, as the decrease is also relative.

We will consider the dynamics of innovative products, jobs, services and costs for 2010-2016 to further explore this situation. Using these two figures, we estimate the relative indicators. In order to evaluate the effectiveness of innovative spending, we look at the amount of innovative products, jobs, services, and the amount of products produced for each unit.

This computed figure is shown in Figure 2.1.3, indicating the higher the efficiency. Our calculations show that despite the steady growth trend in innovative products, jobs, and services, the amount of expenses has changed. As a result, the costs were minimal over the years when the amount of products produced at each cost was high. In particular, in 2012 this figure was 11.7 thousand soums, which provided a sharp increase in production and a reduction in the cost of the unit.

In spite of the fact that in 2012 the volume of expenses decreased by 16% compared with the previous year, the growth in the volume of innovative products, works and services was 2.7 times higher than in the previous year. By 2013, there is a sharp change in the amount of expenses, which is 14.9 times more than the previous year. As a result, the amount of innovative products per unit cost was equal to 1 soum.



Picture 2. Additional innovative products, jobs, service cost ratio.

This indicator allows for a thorough analysis of the efficiency of innovative activity. The indicator reached its peak in 2012 and resulted from the sharp increase in the number of innovative products, works and services compared to the previous year. Except for 2009 and 2016, it can be seen that this indicator is smaller than 1 in all years, and it is equal to -1.3 in 2013.

Another problem in our country's innovation activities is the uneven distribution of innovative products, jobs and services across the region. The main factors contributing to this are the costs of innovative activity and regional development differences. However, we are currently implementing a number of practical work and programs aimed at reducing the level of development in the regions.

Particularly, it is based on a comprehensive and balanced socio-economic development of regions, districts and cities, their optimal utilization, and excellent estimates of this problem in the five priority directions of the development of the Republic of Uzbekistan in 2017-2021 targeted and concrete measures, programs and projects are a reflection of the government's challenge to the problem.

Based on the above, we will analyze the existing problem based on the information from 2016. Statistical data show that there is a disproportion in the distribution of innovative products, jobs, services in the regions (Figure 2.1.5).

In the country, in 2016, 48% of innovative products, works and services account for Tashkent city - 18.3%, the Republic of Karakalpakstan - 9.3% and Tashkent region.

As it is seen, the share of provinces is 24.4%. The share of innovative products and services produced in Surkhandarya, Jizzakh, Navoi, Bukhara, Khorezm and Syrdarya provinces does not exceed even one percent.

However, Andijan and Samarkand regions are quite high. In sum, the volume of production of innovative products and services is directly related to the development of the industry in the region. As our analysis shows, this indicator is high in the industrial regions.

Given the fact that innovative products and services are directly related to production, we want to pay special attention to the analysis of the structure of funding sources (Table 1).

Table-1. Costs of technological, marketing and organizational innovation by sources of financing, billion UZS (2010-2016)

	2010 y.	2011y.	2012 y.	2013 y.	2014 y.	2015 y.	2016 y.
Technological, marketing and organizational innovation costs	**264,4**	**372,6**	**311,9**	**4634,2**	**3757,4**	**5528,3**	**2571,4**
Including sources of funding:							
the organization's own resources	184,3	263,2	213,4	2501,5	1381,5	1251,8	1180,0
foreign capital	48,3	24,9	39,9	1228,7	32,3	156,6	314,9
commercial banks	30,0	63,7	26,8	533,5	262,5	280,1	157,3

loans							
other funds	1,8	20,9	31,7	370,6	2081,0	3839,7	919,1

In 2010, 264.4 billion soums were spent on technological, marketing and organizational innovation, while in 2016 it reached 2571.4 billion and resulted in an increase of 9.7 times in the next 7 years. From the point of view of the source, the sources of funding have been formed by means of the organization's own funds, foreign capital, commercial banks loans, and other means. Their share in 2010 was 69.7, 18.3, 11.3 and 0.7 percent respectively, and by 2016 it was 45.9, 12.2, 6.1 and 35.7 percent respectively. As a result, the share of own funds of the organization, loans of foreign capital, commercial banks decreased in the financing of innovative products and services, and the share of other funds increased.

Table-2. Type and review of innovations implemented number of issues is 2016

	Overall	**Included have been studied**:				
		By his own power	Cooperated with other organizations	Улардан:		Other organizations
				In collaboration with research institutes	Cooperated with higher education institutions	
Technological innovations	**1816**	**1523**	**117**	**41**	**5**	**176**
Including:						
by product	1118	973	73	15	4	72
processes	698	550	44	26	1	104
marketing	51	39	-	-	-	12
organizational	39	29	-	-	-	10

Most of the innovations introduced in Uzbekistan are made by enterprises themselves, including 1816 innovations in 2016, of which 1523 (84%) are made by enterprises themselves. Innovations introduced in collaboration with other organizations are 117, with a share of 6.4%. The number of innovations implemented jointly with research institutes and higher education institutions is only 46 (Table 2).

The cooperation between production and service enterprises, research institutes and higher education institutions is not sufficiently shaped.

Of the technological innovations, 61.6% had the innovation in the process, with the remaining 38.4% of the product. The number of enterprises and organizations involved in introducing the above mentioned technological innovations is equal to 893. The role of small businesses and micro-firms in this process is also high enough, with 44% of total technological innovation, or 799 in total. By 2016, every innovation-based organization has introduced an average of 2 innovations. In terms of regions, the highest value was in Andijan region - 3.4. Next place is Tashkent city and Ferghana region. Their indicators are 2.7 and 2.5 respectively.

The lowest indicator is in Jizzakh Province, where 41 organizations have implemented 44 innovations and have an average of 1.1 per organization. Based on the results of our analysis, we can conclude that the elimination of disproportional economic development at the regional level will contribute to the further development of innovation activities in the country. We believe that the development of innovative products and the development of cooperation with research institutes and higher education institutions will contribute to the further development of innovative capacities.

Conclusions

Our analysis shows that in spite of the fact that in recent years, the country has made significant progress in the production of innovative products, jobs and services, a number of problems have been identified. Particularly, the share of newly introduced enterprises in the number of enterprises producing innovative products, works and services has a tendency to decline, and there is disproportionate economic development at the regional level. In our view, overcoming these problems will serve to further advancement of innovation in our country. In

addition, developing cooperation with research institutes and higher education institutions in the development and implementation of innovative products will contribute to the further advancement of innovative capacities.

The proposed structural analysis methodology includes indicators and calculations for personnel, financial, scientific and technical, production, technological, organizational and management capacities and innovation capability and readiness of the enterprise. This will allow not only to evaluate factors affecting the innovative potential, but also to identify the more important factors that have a strong impact on the system. It also simplifies calculations, covering a small number of indicators, and at the same time, provides sufficient coverage of the enterprise's innovative capabilities.

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Impact Factor:					
	ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

A.M. Kokoeva
Dean of the faculty of law and customs of the Kyrgyz-Uzbek University,
Candidate of legal science, Associate Professor

A.M. Djorobekova
Deputy head of the Academy of the Ministry of internal Affairs of the Kyrgyz Republic,
Doctor of legal science, Professor

D.Sh. Nuriyev
Associate Professor of the Department of criminal procedure and forensic examination of the Kyrgyz national University after D. Balasagyn,
Candidate of legal science, Associate Professor

SECTION 32. Jurisprudence.
UDC 343.98

FORENSIC FEATURES OF PRIMARY INFORMATION AT THE INITIAL STAGE OF INVESTIGATION OF ECONOMIC CRIMES

Abstract: *The article deals with the features of primary information at the initial stage of investigation of economic crimes. The authors provide forensic recommendations for the collection and analysis of primary information at the initial stage of the investigation of economic crimes. The authors emphasize that assessing the primary materials at the stage of initiation of criminal proceedings on economic crime, the investigator primarily assesses: the source of information, the content of information, the presence and absence of contradictions between information obtained from different sources), as well as methods of obtaining such information.*

Key words: *Economic crimes, economic crime, crime investigation, primary information, initiation of criminal proceedings, methods of investigation of economic crimes.*

Language: *Russian*

Citation: Kokoeva, A. M., Djorobekova, A. M., & Nuriyev, D. S. (2018). Forensic features of primary information at the initial stage of investigation of economic crimes. *ISJ Theoretical & Applied Science, 11 (67),* 266-270.

Soi: http://s-o-i.org/1.1/TAS-11-67-43 ***Doi***: https://dx.doi.org/10.15863/TAS.2018.11.67.43

КРИМИНАЛИСТИЧЕСКИЕ ОСОБЕННОСТИ ПЕРВИЧНОЙ ИНФОРМАЦИИ НА НАЧАЛЬНОМ ЭТАПЕ РАССЛЕДОВАНИЯ ЭКОНОМИЧЕСКИХ ПРЕСТУПЛЕНИЙ

Аннотация: *В статье рассматриваются особенности первичной информации на начальном этапе расследования экономических преступлений. Авторами приводятся криминалистические рекомендации относительно сбора и анализа первичной информации на первоначальном этапе расследования экономических преступлений. Авторы подчеркивают, что оценивая первичные материалы на стадии возбуждения уголовного дела об экономическом преступлении, следователь прежде всего оценивает: источник информации, содержание информации, наличие и отсутствие противоречий между информацией, полученной из разных источников), а также методы получения такой информации.*

Ключевые слова: *Экономические преступления, экономическая преступность, расследование преступлений, первичная информация, возбуждение уголовного дела, методика расследования экономических преступлений.*

Введение

Уголовно-процессуальный закон обязывает суд, прокурора, следователя и орган дознания в каждом случае обнаружения признаков преступления возбудить уголовное дело и принять все предусмотренные законом меры для установления события преступления, лиц, виновных в совершении преступления, и для их наказания.

Однако лишь обоснованное возбуждение уголовного дела может обеспечить выполнение этих задач. А обоснованность решения о возбуждении уголовного дела зависит, прежде всего, от наличия достаточной совокупности фактических данных, строгого соблюдения требований закона при их собирании, проверке и оценке.

Поэтому принятию такого решения предшествует важная и тщательная деятельность, направленная на сбор первичного материала и его проверку с целью установления достаточности для обоснованного возбуждения уголовного дела.

Основная часть

Как показывает практика, уголовные дела об экономических преступлениях характеризуются особой сложностью. Это проявляется уже на стадии возбуждения уголовного дела. Поскольку от полноты и качественности первичного материала зависит дальнейшее развитие расследования такого уголовного дела и ее судебная перспектива, то их оценка занимает ключевую позицию. Практика показывает, что достаточно часто уголовные дела об экономических преступлениях в дальнейшем прекращаются в суде или возвращаются на дополнительное расследование.

Уголовно-процессуальное законодательство устанавливает, что уголовное дело может быть возбуждено лишь при наличии предусмотренных законом поводов и оснований.

В общем, повод для возбуждения уголовного дела определяется как предусмотренный законом источник, из которого орган дознания, следователь и прокурор получают сведения (информацию) о совершенном или готовящемся преступлении и которые обязывают их приступить к решению вопроса о необходимости возбуждения производства.

Так, ч. 1. ст. 150 УПК Кыргызской Республики устанавливает, что поводами для возбуждения уголовного дела являются: 1) заявления граждан; 2) заявление о повинной; 3) сообщение должностного лица организации; 4) сообщение в средствах массовой информации; 5) непосредственное обнаружение органом дознания, следователем, прокурором признаков преступления [1].

Информация, которая является основанием для возбуждения уголовного дела содержится в поводах для возбуждения такого дела. Однако в зависимости от вида преступления данной информации может быть достаточно для принятия решения или не достаточно. Обычно данных, содержащихся в поводе, не достаточно для обоснованного возбуждения уголовного дела об экономических преступлениях. Поэтому для того, чтобы установить такую совокупность данных, которая была бы достаточной для возбуждения уголовного дела, правоохранительными органами проводится колоссальная проверочная работа.

Ю.Н. Белозеров указывает, что для принятия законного и обоснованного решения по материалам проверки нужно правильно определить круг обстоятельств, подлежащих выявлению на стадии возбуждения уголовного дела. Недопустимо сужение пределов исследования в этой стадии может повлечь за собой необоснованное решение вопроса о возбуждении или об отказе в возбуждении уголовного дела. С другой стороны, неоправданное расширение границ исследования может привести к затягиванию принятия решения и фактически проведения расследования до возбуждения уголовного дела [2, с. 9-10].

Так, при получении первичной информации о деяниях, как правило, невозможно сразу определить, содержатся ли в нем признаки преступления. У должностного лица, изучающего эту информацию, есть только вероятные знания о деянии в целом. Поэтому для того, чтобы определить, принадлежит ли оно к числу преступных, должностное лицо соотносит каждый из установленных элементов исследуемого деяния с элементами составов преступлений, отраженных в уголовном законе. При этом, чтобы определить наличие в деянии признаков преступления, необходимо установить совокупность данных, достаточных для выявления этих признаков.

Достаточность данных, устанавливаемых на стадии возбуждения уголовного дела, определяют как совокупность фактических данных, полученных в ходе процессуального познания, которая дает возможность сделать вероятный вывод о наличии признаков преступления и открыть путь для дальнейшего достоверного установления всех элементов предмета доказывания.

Такие данные получаются в ходе проверки первичной информации о преступлении. В зависимости от характера такой информации, проверка может свестись к изучению начальником органа дознания объема и качества сведений, соблюдение правил документирования.

Если же данные указывают на совершение преступления, но их еще не достаточно, то проверка может доручатись оперативным подразделениям. Так, проверка первичных данных об экономических преступлениях, несмотря на сложность их выявления и расследования, проводится оперативными подразделениями Государственной службы по борьбе с экономическими преступлениями при правительстве КР.

В тех случаях, если признаки преступления обнаружены непосредственно органом дознания в ходе проведения оперативно-розыскной деятельности, то встает вопрос, когда же надо реализовывать полученные оперативные данные. Оперативный работник, обнаруживший признаки преступления, считая, что собранные данные достаточны для возбуждения уголовного дела, докладывает своему непосредственному начальнику. Получив согласие последнего, подбирает материалы, которые содержат поводы и основания для возбуждения уголовного дела, для передачи их по подследственности и составляет рапорт.

В рапорте, как правильно указывает В.Н. Григорьев, должна содержаться следующая информация: каким путем получены сведения о преступлении; обстоятельства его совершения и правовая квалификация; информация об установленных потерпевших и подозреваемых; сумма материального ущерба; возможные источники доказательств и обоснованный вывод о необходимости передачи материалов к следственному аппарату [3, с. 58]. Рапорт и приобщенные к нему материалы после рассмотрения их начальником органа дознанияи регистрируются и передаются в следственное подразделение, где решается вопрос о возбуждении уголовного дела. В случае, если проверка была проведена по заявлению или сообщению о преступлении, то вместо рапорта на практике составляется сопроводительное письмо, которое содержит ту же информацию, что и первый.

Материалы предварительной проверки оцениваются с точки зрения наличия в них признаков экономических преступлений и их достаточности для возбуждения уголовного дела.

Представляется правильной позиция А.Ф. Волобуева, оценка первичного материала об экономическом преступлении, принятие решения о возбуждении уголовного дела и организация расследования является тактической задачей, правильное решение которой зачастую определяет судебную перспективу дела. По своей сути это сложное умственное (аналитическое) задачи, которое во многих случаях требует проведения определенных проверочных и организационных мероприятий, как правило, с использованием специальных знаний для обеспечения ее дальнейшей перспективы [4, с. 44].

При оценке материалов предварительной проверки у следователя происходит формирование знаний относительно фактических обстоятельств события. Содержание этих знаний получает свое выражение в выводах и решениях, которые формируются у следователя посредством глубокого и всестороннего изучения собранных материалов. Кроме того, следует иметь в виду, что одни и те же сведения могут оцениваться разными следователями по-разному.

То есть оценка осуществляется по внутреннему убеждению следователя, основанное на всестороннем, полном и объективном рассмотрении всех обстоятельств в их совокупности [5, с. 89].

Таким образом, критериями оценки полноты материалов проверки считается наличие в них достаточных данных, указывающих на признаки преступления, в том числе: время, место и способ совершения, конкретные обстоятельства совершенного преступления, сведения о лицах, которые причастны к его совершению, определения размера причиненных убытков и предпринятые органом дознания меры для установления имущества и ценностей, добытых преступным путем и подлежат конфискации с целью возмещения убытков.

При определении достаточности данных, как правильно отмечает Д.А. Коваленко, следует учитывать следующие положения: 1) вывод о наличие признаков преступления должен основываться не на предположениях, а на фактах, то есть информация должна быть конкретной, последовательно возникает из обстоятельств содеянного; 2) источник такой информации должно заслуживать доверие, причем следует осуществить меры, обеспечивающие достоверность такой информации; 3) анализ собранной информации должен убедительно свидетельствовать о наличии достаточных сведений, позволяющих сделать вывод о том, что исследуемое деяние содержит признаки преступления, и отсутствуют основания, исключающие возбуждение уголовного дела [6, с. 73-74].

Учитывая специфику экономических преступлений (многоэпизодность, совокупность преступлений, высокий профессионализм исполнителей, сложность в доказывании), под данными, достаточными для возбуждения уголовного дела необходимо понимать такую информацию, которая бы достоверно (то есть с высокой вероятностью) свидетельствовала о наличии всех элементов состава преступления. Эта информация должна также указывать на лицо, причастное к совершению этого

преступления, и устанавливать причиненный ущерб [7, с. 58]. Но следует иметь в виду, что предмет доказывания (то есть совокупность данных, должны быть установлены) на стадии возбуждения уголовного дела значительно уже чем на стадии расследования. Ведь главной целью стадии возбуждения уголовного дела, как отмечают большинство ученых, является лишь выявление данных, подтверждающих наличие события преступления, а не сбор материалов, которые достоверно разоблачают конкретное лицо в совершении преступления.

По мнению В.Н. Григорьева и Ю.В. Прушинского, в качестве первичных материалов могут быть: заявления (сообщения) о преступлении, предметы и документы со следами преступления, акты инвентаризаций, проверок, обследований, контрольных закупок, предварительных исследований, документальных ревизий, аудиторских проверок, объяснений лиц, различного рода переписка, «черная касса», записи и расчеты, которые свидетельствуют о фактах вывоза, сбыта и скупки краденого, а также другие материалы, содержащие данные о совершенном преступлении [8, с. 84]. Состав первичных материалов зависит в общем от вида преступления и от каждого совершенного преступления отдельно.

Анализ судебно-следственной практики и научных источников по вопросам определения содержания первичного материала [9, с. 754; 10, с. 83; 11, с. 75 позволяет привести типичный перечень документов, которые должны содержаться в первичном материале, для принятия обоснованного решения о возбуждении уголовного дела и дальнейшей ее перспективы на досудебном следствии и в суде. Итак, первичный материал об экономических преступлениях должны составлять следующие документы: 1) документы, содержащие повод к возбуждению уголовного дела; 2) объяснения, полученные в ходе проведенной проверки; 3) документы, в которых отражаются обстоятельства совершения преступления; 4) материалы специальных проверок; 5) другие документы, в которых может содержаться информация об обстоятельствах совершенного преступления: нормативные акты, положения которых были нарушены; запросы надзорных или статистических органов, обращения, письма, черновые записи и т.п.

Следует отметить, что содержание первичных документов по экономическим преступлениям зависит от вида совершенного преступления, сферы деятельности, в которой оно совершено, и информации, которая стала поводом для возбуждения уголовного дела. Поэтому указанный перечень документов не является исчерпывающим, но он отражает общую структуру первичных материалов предварительной проверки информации об экономических преступлениях.

Оценивая первичные материалы на стадии возбуждения уголовного дела об экономическом преступлении, следователь прежде всего оценивает: источник информации (законность его происхождения, принадлежность к событию вероятного преступления); содержание информации (полноту и достоверность, точность отражения обстоятельств исследуемого события; наличие и отсутствие противоречий между информацией, полученной из разных источников); методы получения такой информации (правомерность и надежность этих методов).

Заключение

По результатам оценки первичных материалов об экономических преступлениях следователем принимается соответствующее решение. Так, если следователь, оценив материалы, удостоверится в их полноте, достоверности, а следовательно и достаточности для обоснованного возбуждения уголовного дела, то он выражает свое убеждение в постановлении о возбуждении уголовного дела. Если же состав представленных материалов не достаточен для принятия обоснованного решения, то материалы могут быть возвращены в оперативное подразделения для проведения дополнительной проверки.

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Impact Factor:					
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	JIF = 1.500	SJIF (Morocco) = 5.667	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

SECTION 32. Jurisprudence.
UDC 343.98

A.M. Kokoeva
Dean of the faculty of law and customs of the Kyrgyz-Uzbek University,
Candidate of legal science, Associate Professor

A.M. Djorobekova
Deputy head of the Academy of the Ministry of internal Affairs of the Kyrgyz Republic,
Doctor of legal science, Professor

D.Sh. Nuriyev
Associate Professor of the Department of criminal procedure and forensic examination of the Kyrgyz national University after D. Balasagyn,
Candidate of legal science, Associate Professor

INTERACTION OF THE INVESTIGATOR AND THE OPERATIVE WORKER AT INVESTIGATION OF THE CRIMES COMMITTED IN THE SPHERE OF ECONOMIC ACTIVITY

Abstract: *This article discusses the concept and the main forms of interaction between the investigator and the operative worker in the investigation of crimes committed in the sphere of economic activity. The article notes that the interaction of the investigator with the operational units is one of the most common and important types of interaction in the investigation of economic crimes. The authors note that the interaction of the investigator with the body of inquiry can occur both at the stage of initiation of criminal proceedings, during the preliminary verification of information about the crime, and at the stage of preliminary investigation.*

Key words: *Economic crimes, economic crime, crime investigation, interaction of the investigator and the body of inquiry,initiation of criminal proceedings, preliminary investigation, methods of investigation of economic crimes.*

Language: *Russian*

Citation: Kokoeva, A. M., Djorobekova, A. M., & Nuriyev, D. S. (2018). Interaction of the investigator and the operative worker at investigation of the crimes committed in the sphere of economic activity. *ISJ Theoretical & Applied Science, 11 (67),* 271-275.

Soi: http://s-o-i.org/1.1/TAS-11-67-44 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.44

ВЗАИМОДЕЙСТВИЕ СЛЕДОВАТЕЛЯ И ОПЕРАТИВНОГО РАБОТНИКА ПРИ РАССЛЕДОВАНИИ ПРЕСТУПЛЕНИЙ, СОВЕРШАЕМЫХ В СФЕРЕ ЭКОНОМИЧЕСКОЙ ДЕЯТЕЛЬНОСТИ

Аннотация: *В настоящей статье рассматриваются понятие и основные формы взаимодействия следователя и оперативного работника при расследовании преступлений, совершаемых в сфере экономической деятельности. В статье отмечается, что взаимодействие следователя с оперативными подразделениями является одним из наиболее распространенных и важных видов взаимодействия при расследовании экономических преступлений. Авторами отмечается, что взаимодействие следователя с органом дознания может происходить, как на стадии возбуждения уголовного дела, во время осуществления предварительной проверки информации о преступлении, так и на стадии предварительного расследования.*

Ключевые слова: *Экономические преступления, экономическая преступность, расследование преступлений, взаимодействие следователя и органа дознания, возбуждение уголовного дела,предварительное расследования, методика расследования экономических преступлений.*

Введение

Законность и обоснованность возбуждения уголовных дел об экономических преступлениях и полнота, объективность и всесторонность их расследования во многом обусловлены организацией четкого взаимодействия следователей с оперативными работниками. Правильно организованное взаимодействие позволяет объединить и эффективно использовать процессуальные и оперативно-розыскные возможности для решения задач уголовного судопроизводства.

Основная часть

Понятие «взаимодействие» имеет междисциплинарное значение и трактуется различными областями науки и сферами жизни почти однозначно. Как считают ряд авторов, при анализе сущности взаимодействия следует исходить от общего к частному, то есть от философского понятия взаимодействия к его интерпретации в сфере деятельности правоохранительных органов. Как правило, ученые сходятся во мнении, что понятие взаимодействия при расследовании преступлений является лишь конкретизацией понятия взаимодействия, используемое в науке социального управления, которое, в свою очередь, можно рассматривать как конкретизацию философского понятия взаимодействия [1].

Так, в философском понимании, взаимодействие означает категорию, отражающую процессы воздействия различных объектов друг на друга, их взаимную обусловленность, изменение состояния, взаимопереход, а также порождение одним объектом другого [2, с. 57]. В теории управления взаимодействие понимают, как согласованную по месту и времени совместную деятельность, направленную на достижение общей цели [3, с. 12-15]. Под взаимодействием в ходе правоохранительной деятельности, как правило, понимают, основанную на законах и подзаконных актах, согласованную по цели, месту и времени деятельность различных звеньев системы правоохранительных органов по противодействию преступности [4, с. 4].

То есть взаимодействие в правоохранительной сфере происходит между различными структурными подразделениями и службами. В криминалистической литературе существуют различные определения понятия «взаимодействие».

Так, В.Ф. Статкус под взаимодействием понимает согласованную деятельность следователя с органами дознания, основанную на законе и ведомственных нормативных актах и направленную на раскрытие, расследование, пресечение и предотвращение преступлений путем наиболее эффективного сочетания методов и средств, присущих этим органам, при сохранении тайны предварительного следствия и источников получения негласной информации [5, с. 37].

Другую позицию занимает Г.А. Матусовский, определяя взаимодействие как согласованную деятельность правоохранительных и других государственных органов и должностных лиц в процессе раскрытия и расследования преступлений направленную на достижение общей цели с наименьшими затратами сил, средств и времени [6, с. 157-158].

По мнению Р.С. Белкина, взаимодействие является одной из форм расследования преступлений, которое заключается в основанном на законе, согласованном по целям, месту и времени сотрудничестве следователя с органом дознания [7, с. 31].

Из приведенных определений видно, что ученые неоднозначно трактуют понятие взаимодействия с точки зрения круга его субъектов.

Мы разделяем позицию тех авторов, которые считают, что взаимодействие существует в широком и узком понимании, в зависимости от круга субъектов, участвующих в нем. В криминалистическом аспекте взаимодействие должно рассматриваться именно с учетом узкого или широкого его содержания.

В юридическрй науке выделяют следующие виды взаимодействия:

1) взаимодействие следователя с контролирующими органами при расследовании преступлений;

2) взаимодействие следователя и органа дознания при расследовании преступлений;

3) взаимодействие следователя при расследовании преступлений с лицами, обладающими специальными познаниями;

4) взаимодействие следователя с общественными организациями и другими негосударственными структурами при расследовании преступлений.

Одним из наиболее распространенных и важных видов взаимодействия при расследовании экономических преступлений является взаимодействие следователя с оперативными подразделениями. Ведь при расследовании данного вида преступлений, зачастую, приходится сталкиваться с целым комплексом трудностей, связанных с потребностью в проведении проверок ряда финансово-хозяйственных операций (и часто

не одного предприятия, а нескольких), проработка ряда документов и проверки должностных лиц. Поэтому без должного взаимодействия следственных и оперативных подразделений невозможно выполнение задач, требующих своего решения в процессе расследования.

По мнению Г.А. Матусовского, в целом, формы взаимодействия следственных органов и органов дознания можно условно разделить на две группы: нормативно-правовые и организационно-тактические. К нормативно-правовым автор относит такие как:

а) передачу следователю материалов об обнаружении с помощью оперативно-розыскных мероприятий признаков преступления для решения вопроса о возбуждении уголовного дела;

б) проведение следователем процессуальных действий одновременно с проведением органом дознания согласованных оперативных мер;

в) проведение оперативно-розыскных мероприятий по уголовному делу, по которому не установлено лицо, совершившее преступление, после передачи дела следователю;

г) выполнение поручений следователя, прокурора, определений суда о проведении розыскных действий;

д) согласованное применение процессуальных и непроцессуальных мероприятий по установлению лица, подлежащего привлечению в качестве обвиняемого, после приостановления предварительного следствия;

е) получение информации и документов об операциях, счетах, вкладах, внутренних и внешних экономических сделках физических и юридических лиц [6, с. 160].

Организационно-тактические формы взаимодействия выбираются в зависимости от характера преступления и уровня сложности расследования, они непосредственно не определены УПК Кыргызской Республики [8], но предусмотрены ведомственными нормативными актами и призваны способствовать более рациональному и эффективному использованию процессуальных форм взаимодействия.

К таким формам следует отнести:

а) совместное выдвижение версий и согласованное планирование следственных действий и оперативно-розыскных мероприятий;

б) организацию следственно-оперативных групп, в состав которых входят, как следователи, так, и оперативные работники;

в) совместное изучение и анализ оперативно-розыскной информации о готовящихся или совершенных преступлениях;

г) обмен информацией;

д) координацию следственных и оперативно-розыскных действий.

Взаимодействие следователя с органом дознания может происходить: во-первых, на стадии возбуждения уголовного дела, во время осуществления предварительной проверки информации о преступлении; во-вторых, на стадии предварительного расследования.

Взаимодействие на стадии возбуждения уголовного дела имеет особое значение для принятия обоснованного процессуального решения и обеспечения дальнейшей перспективы расследования. При этом, несмотря на большой объем первичных материалов и их специфику, безусловно, данная форма взаимодействия должна эффективно влиять на разрешение вопросов, связанных с реализацией первичных оперативных материалов и возбуждением уголовного дела.

Д.И. Бедняковым ранее указывалось на необходимость ознакомления следователя со всеми материалами оперативно-розыскного дела о крупных замаскированных хищениях и других преступления в сфере экономики, что, в свою очередь, на стадии возбуждения уголовного дела, является особенно необходимым для оценки их готовности к реализации, а также для определения тактических приемов и момента реализации [9, с. 95, 98].

Как показывает практика, на начальном этапе расследования экономических преступлений следователям приходится сталкиваться с такими трудностями, как: низкое качество доследственной проверки первичных материалов о преступлении; ненадлежащее взаимодействие следователей с оперативно-розыскными подразделениями; вмешательство в процесс расследования уголовного дела коррумпированных сотрудников правоохранительных органов или представителей органов государственной власти и управления; нежелание потерпевшей стороны сотрудничать с правоохранительными органами. Таким образом, надо отметить, что для того, чтобы обезопасить процесс расследования от упомянутых проблем, об этом следует позаботиться еще на этапе сбора первичной информации.

Если первичные материалы были собраны оперативным подразделением без методической помощи следователя, то анализ таких материалов должен проводиться следователем совместно с оперативным работником, так как при изучении таких материалов следователю может понадобиться дополнительная информация. Следовательно, в случае установления неполноты представленных материалов должны составляться письменные рекомендации по их дополнению, которые в обязательном порядке должны быть приобщены к оперативно-розыскному делу или материалам доследственной проверки. При этом, следует признать, что в рамках этой формы взаимодействия возможен не только официальный возврат материалов для проведения

дополнительной проверки, но и неофициальное устранение недостатков.

Взаимодействие на стадии досудебного расследования экономических преступлений реализуется в форме следственно-оперативных групп. Необходимость в расследовании экономических преступлений следственно-оперативными группами вызвана тем, что по данной категории уголовных дел требуется исследование широкого круга объектов и источников информации, а следовательно – проведение значительного количества как следственных действий, так и оперативно-розыскных мероприятий. Кроме того, достаточно важным является то, что на стадии предварительного расследования происходит выявление иных преступлений, которые имеют тесную взаимосвязь с расследуемыми экономическими преступлениями.

Как отмечает С.В. Бажанов, следственно-оперативную группу можно определить как организационно-процессуальное формирование следователей и оперативных работников, которые под руководством следователя, в производстве которого находится уголовное дело, обеспечивают совместное по целям, месту и времени раскрытие и расследование тяжких и особо тяжких преступлений. Процессуальность этого формирования заключается в процессуальном оформлении деятельности группы в виде постановлений, вынесенных компетентными лицами [10, с. 14].

Характерными признаками следственно-оперативной группы являются следующие:

1) она составляет организационную форму взаимодействия следователя с оперативными подразделениями;

2) с организационной стороны, СОГ является временной организацией, объединяющей усилия следователей и сотрудников органа дознания для решения общих задач – раскрытие преступления с использованием как процессуальных, так и оперативно-розыскных средств;

3) с процессуальной стороны указанная группа представляет собой два согласованно работающих формирования, одно из которых (следователь) при расследовании уголовного дела использует присущие ему процессуальные функции, а другое (орган дознания) способствует в проведении процессуальных действий и выполняет поручения и указания о проведении следственных и оперативно-розыскных действий;

4) следственно-оперативная группа может быть создана как на определенный срок (для решения конкретно поставленной задачи), так и на весь период расследования уголовного дела;

5) взаимодействие между членами группы носит не случайный, эпизодический характер, а является стабильным, творческим сотрудничеством, которое основывается на наиболее целесообразном сочетании различных средств и методов, присущих взаимодействующим сторонам, а также на постоянном и полноценном обмене информацией;

6) руководство следственно-оперативной группой и контроль за деятельностью ее членов осуществляет следователь, в производстве которого находится уголовное дело.

Успешная деятельность следственно-оперативной группы в раскрытии и расследовании экономических преступлений обеспечивается согласованным планированием следственных действий и оперативно-розыскных мероприятий, эффективным обменом информацией и своевременной корректировкой плана расследования.

Заключение

Таким образом, можно сделать вывод, что взаимодействие следователя с оперативными работниками при выявлении и расследовании экономических преступлений должно начинаться на стадии проверки первичного материала и возбуждения уголовного дела, так как именно полнота и содержание первичного материала во многом определяют характер следственной ситуации, в которой будет проводиться расследование уголовного дела, и продолжаться на протяжении всего производства по уголовному делу, что, в свою очередь, будет являться залогом успешного расследования и определения дальнейших перспектив данного уголовного дела.

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Impact Factor:					
	ISRA (India) = 3.117	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 0.829	РИНЦ (Russia) = 0.156	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 5.015	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 5.667	

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

SECTION 31.Economic research, finance, innovation, risk management.

Allayor Rashidovich Ismailov
assistant of "Corporate governance" department,
Tashkent state university of economics,
Tashkent, Republic of Uzbekistan

WAYS TO DEVELOPMENT CORPORATE GOVERNANCE INSTITUTIONS IN UZBEKISTAN

Abstract: *In the given article considered ways of improving institutional basis of corporate governance, problems related with shareholders rights and benefits, efficiency issues governance bodies activities, transparency and accuracy of corporate information of stock companies in Uzbekistan.*

Key words: *governing bodies, general meeting of shareholders, supervisory board, audit commission, corporate secretary, profitability ratio.*

Language: *English*

Citation: Ismailov, A. R. (2018). Ways to development corporate governance institutions in Uzbekistan. *ISJ Theoretical & Applied Science, 11 (67),* 276-279.

Soi: http://s-o-i.org/1.1/TAS-11-67-45 ***Doi***: https://dx.doi.org/10.15863/TAS.2018.11.67.45

Introduction

Decree of the President of the Republic of Uzbekistan "On Measures to Increase the Role and Value of Private Sector in the Economy of Uzbekistan" of January 24, 2003, and Decree of the Cabinet of Ministers of April 19, 2003 "On Measures to Improve Corporate Governance of Denialized Entities" implementation and improvement. [13]

The introduction of corporate methods and principles in the companies of Uzbekistan is one of the pressing issues of increasing the effectiveness of organizational and organizational-organizational mechanism of corporate governance, development of the company's development strategy, based on the interests of the business.

Literature review

Berkinov B.B. [1], Hodiev B.Yu. [2], Kaplan R.S., Norton D.P. [3], Meskon M. [4], Zainutdinov Sh.N., Ashurov Z.A. [5], Mansurov O.B. [6], Mazur I.I., Shapiro V.D., Olderojje N.G. [7], Qosimova N. [8], Khoshimov AA, Suyunov D.X., Hamidullin MB, Zaynutdinov Sh.N., Rakhimova DN, Nurimbetov R.I. and other scientific works of the formation of corporate management in our country, the effectiveness of the organizational-economic mechanism has been studied [1].

Foreign scientists Bobobekova D. [9], Brendan D. Bannister and Richard B. Higgins [10], Brown, L.D. [11], Higgins Richard [12] and many other corporate managements.

The Corporate Governance Mechanism is described by national researchers as follows: "The Corporate Governance Mechanism is a set of elements that promote the company's (or corporation's) social, economic, legal, and organizational relationships that are needed to achieve its goals."

Analysis and results

The Movement Strategy for five key priorities for further development of the country in 2017-2021 is that it is important to step up the management activity of joint-stock companies in the conditions of liberalization of the economy. Consequently, according to world practice, stock companies are separated from the ownership of the joint stock companies. Owners have transferred their property rights to rational managers. Management of managers is entrusted with institutions that are part of the corporate governance body. General meeting of shareholders is a supervisory (or board of directors) board, auditing commission, corporate secretary, corporate governance institutions. The improvement of corporate governance institutions in these business entities is recognized as one of the ways of sustainable development of our economy. Another important aspect of institutional governance is the commitment to transparency and

accountability, accountability and accountability. [13]

Taking into account the above, improving the corporate governance institutions in the business sector of the country is crucial to ensuring the sustainability of the national economy. The introduction of corporate governance institutions has the potential to address the top priorities, such as the protection of shareholders' rights and interests, the formation of clearly defined powers of public administration bodies, enhancing investment attractiveness, and ensuring timeliness and validity of information.

With the introduction of such management institutions, the increase in production volumes, quality improvements, rational use of funds, labor productivity, raising the level of profitability of the society by attracting the necessary funds for investment and innovation projects. This is because the results of effective corporate governance institutions implemented on business entities are reflected both nationally and globally.

For example, in the context of business entities, effective corporate governance will provide a high return on business entities for the benefit of shareholders and all stakeholders. Country-wide effective corporate governance institutions allow the private sector to develop the stock market and the entire economy. Effective global corporate governance can minimize the risk of emergence and development of the financial and economic crisis.

Attraction of corporate governance institutions to business entities as well as investments in the national economy will help to strengthen the basis of long-term economic development and competitiveness in various fields.

This can be further explained by the following:

Practical introduction of transparency and transparency in business activities, full use of accounting and audit principles, good corporate management in the process of placing contracts and other types of business activities eliminates corruption in business entities.

Corruption worsens resources of economic entities, loses its competitiveness and returns investors to invest in economic entities.

Implementation of corporate governance institutions will increase the quality of management of business entities. It will allow managers of economic entities and supervisory boards to develop a well-thought-out strategy for business entities, and reward business managers with associated business results.

Implementation of this practice on corporate governance will help to attract investments to business entities on mutually advantageous terms and to increase the overall effectiveness of the business entities.

- The transparent attitude towards investors and lenders, the corporate governance institutions, even shares of joint-stock entrepreneurship, will help prevent financial crises even in countries where stock markets are inactive. Implementing the principles of bankruptcy regulation will also allow for quick response to failures in business entities.

Otherwise, certain bankruptcy propagation, especially the lack of enforcement mechanisms, can lead the beneficiaries to the rest of the assets of poor economic entities. This practice is widespread in the implementation of privatization programs in many transitional economies.

This has led to extremely negative results as interests of minority shareholders with corporate governance institutions.

In countries with weak protection mechanisms, many business entities are controlled by dominant investors, and these countries do not have large holdings.

In countries where the aim is to attract local or foreign investors, the presence of corporate governance institutions can play a major role in attracting potential investors. In general, such investors can serve as an important source of long-term investments in the national economy.

It strengthens the current trust of corporate governance institutions and ensures high returns from investments made to the country, which, in turn, stimulates employment and economic growth in the national economy. Taking into account the interests of business entities within the framework of effective corporate governance institutions, social work relations in the business entities are set. Corporate Governance Institutes are guided by the principles of relationships with managers of business entities (including labor legislation, compliance with occupational health and hygienic standards, hiring, remuneration, staff upgrading, availability of specific procedures, participation in trade union activities respect for workers' rights, and so on. Taking into account the social-labor relations of corporate governance institutions helps businesses solve employment problems in the national economy.

Today, there are more than 600 joint-stock companies operating in Uzbekistan. In our country there are legislative acts governing corporate governance in these corporate structures. They have been developed taking into account common corporate governance principles and practical experience accumulated in foreign countries.

According to international experts, corporate governance institutions in Uzbekistan comply with international standards. The ever-growing world economy shows the need for a new approach to corporate governance practices, due to the increasing demand for competitiveness of business entities. In this context, the Organization for Economic Co-operation and Development is pleased to announce

the main principles of corporate governance institutions of the European Bank for Reconstruction and Development (EBRD), recommendations on corporate governance issues of the Group of Companies, corporate governance principles of the Basel Committee on Banking Supervision, and publication of corporate governance information from the UN Conference on Trade and Development Good Practice Recommendations and Conclusions and Requests of the Financial Sustainability Council Joint Stock Companies Monitoring (with the Director) The formation of the new members of the Council, their rights and obligations, the powers of the company to ensure fairness, transparency, accountability, responsibility, and the responsibility should be improved. It is recommended that special assignment committees be established for award assignment and risk management. The goals and objectives of the organization of these committees are explained in detail in their scientific works by foreign and domestic researchers.

At present, corporate governance institutions are widely practicing the principles of the Global Corporate Governance Principles recommended by global governance principles. International Corporate Governance Network The International Network of Corporate Governance was established in Washington in 1995 by institutional investors, their representatives, companies, financial intermediaries and other stakeholders who are interested in developing world practice. The organization recognizes and acknowledges the principles of IHTT, recognizing them as the minimum standards of corporate governance institutions for companies and investors in the world.

The main objective of the international corporate governance network is to promote effective corporate governance and effective governance standards for the development of world-class markets and sustainable economies. The Role and Responsibilities of the International Council on Corporate Governance The Board should take responsibility for the best and long-term interests of the company, with careful and careful consideration for its shareholders, with consideration of interested parties, including creditors. [13]

In the modern corporations, joint-stock companies, the Director (in Latin words, Direktor-Directorate) is the head of the managing company, the director of the company, when describing the board of directors. The director is a senior executive in the organization, and he has the authority to choose an organization's development strategy, work with manpower, and track down the financial flows of business entities.

Conclusion and suggestions

The recommendations of the corporate governance code adopted in our country should be compulsory for corporate executives and all stakeholders, and that such corporate code should enhance the company's positive standing before the public and foreign investors. The Corporate Governance Code establishes criteria for independence for members of the Supervisory Board.

1). Individuals, who have not worked in the affiliated joint stock companies and affiliated enterprises for the last five years;

2). Individuals, not affiliated with JSC, its subsidiary and affiliated undertakings;

3). Individuals without a contractual right to service the joint-stock company, its affiliated and affiliated business entities;

4). Persons who are not controlling entities of the joint-stock company;

5). Persons who are not connected with the civil law agreement with the Sole Shareholder and are not employees of a parent company or a large shareholder of the joint-stock company;

In our opinion, the criteria to be taken into account when selecting members and members of the Supervisory Board are to be clarified as to the diversity of the members of the Council and the Executive Directors (gender, nationality, and social origin). Membership of non-executive directors should be reviewed periodically. The Board of Directors shall determine the procedure for nominating and electing members of the Board of Directors, the Board of Directors shall provide candidates for membership in the Board of Directors, shall have the exclusive right to vote for each Director, and shall regularly evaluate the effectiveness of their activities by the Corporate Secretary, Board Committees and the performance of individual Directors .

Members of the Supervisory Board should adopt a high standard of business ethics so that their views, mission, and objectives are justified, and that they reflect its values, strategies and business processes of the company, including the risk management system and the structure of the award structure.

In general, it is necessary to focus on the following aspects of corporate governance and institutional development.

1. To upgrade the legislative framework in line with international standards for corporate governance

2. Ensuring the quality of internal audit and supervision.

3. Implementing criteria for determining the openness and transparency of information.

4. Determine the role of the Board of Directors (Directors) and ensure its independence.

Here are the expected economic benefits from the introduction of corporate governance principles:

- Increase of effectiveness of joint-stock companies activity.

- Reduced transaction costs and time spent on attraction of foreign investments.

- Long-term value of corporate assets and their increase.

The introduction of the above mentioned ideas into the practice of corporate governance will serve as a key factor in increasing the investment activity of business entities, as well as reducing the risk of financial and economic crises in the global arena in achieving the stability of economic growth within the national economy.

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Impact Factor:					
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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

QR – Issue QR – Article

SECTION 31.Economic research, finance, innovation, risk management

Bakhtigul Farxodovna Tolipova
PhD student "Industry economy" department,
Tashkent state university of economics,
Tashkent, Republic of Uzbekistan

FOREIGN EXPERIENCE OF ATTRACTING INVESTMENTS IN THE FOOD INDUSTRY

Abstract: *The article discusses aspects of attracting investment in the food industry in foreign countries. Also, studied foreign methods of assessing the effectiveness of investments. Also, an analysis of attracting direct investment in the food industry of the Asia-Pacific region is given.*

Key words: *investments, analysis, international experience, assessment methodology, investment efficiency.*

Language: *English*

Citation: Tolipova, B. F. (2018). Foreign experience of attracting investments in the food industry. *ISJ Theoretical & Applied Science, 11 (67),* 280-285.

Soi: http://s-o-i.org/1.1/TAS-11-67-46 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.46

Introduction

It is not a secret that an enterprise engaged in investment activity has various advantages: the possibility of development and expansion, as well as economic effects as a result of investment. However, the main motive for investing is undoubtedly the profitability of investments or the ability of the spent funds to generate income. Each firm that pays special attention to this, draws up and develops its own investment policy, prescribing the expediency of conducting such activities, as well as the sequence of the company's actions regarding the implementation of investments. An integral concept, reflecting the essence of the drafting of this document, is an investment project, and its important part, in turn, is a business plan. Since it is at the business planning stage that the preliminary results of the project implementation are determined, the accuracy and thoroughness of the development of such estimates become matters of paramount importance. Obviously, the order of writing a business plan is diverse and is purely individual in nature: each company has the right to choose the most convenient way for it to analyze, calculate these or other indicators and coefficients. Although at the moment world practice has many methods for the economic evaluation of investment efficiency, not all of them are perfect and do not contain flaws. Often, the recommendations do not sanctify aspects of interest to the investor, or only touch on some points of actual problems.

Literature review

The problems of increasing the efficiency of capital investments and investment activity in the CIS countries were examined in the works of D.S. Lvov, I.V. Lipsits, V.V. Kossova, V.V. Kovalev, V.E., K.I. Voronova, Shakhnazarov A.G., Smolyak S.A., Stepuna A.O., Shamkhalova F.I., Vilensky P.L., Abramova S.I. . and etc.

Studying the problem of evaluating the effectiveness of investments in the works of foreign and domestic authors led us to the unequivocal conclusion that, first, the recommended and widely used methods for evaluating investments in the market economies of many countries at the present stage of development of our country without a significant reconstruction of the systems contained in them estimates of investment are not applicable; secondly, the mentioned systems of estimated indicators are not focused on the post-investment economic activity of an enterprise, Nost which in the end may even decrease.

The latter circumstance necessitated addressing the problem of evaluating production efficiency and considering the problem of investment efficiency (and its evaluation) as subordinate to the problem of production efficiency (and its evaluation). Well-known economists were involved in the measurement of production efficiency: Bunich PG, Lvov DS, Medvedev V.A., Notkin A.I., Plyshevsky B.I., Sorokin G.M., Fedorenko N.P., Khachaturov T.S. and etc.

Studying the problem of evaluating the effectiveness of investments in the works of foreign and domestic authors led us to the unequivocal conclusion that, first, the recommended and widely used methods for evaluating investments in the market economies of many countries at the present stage of development of our country without a significant reconstruction of the systems contained in them estimates of investment are not applicable; secondly, the mentioned systems of estimated indicators are not focused on the post-investment economic activity of an enterprise, Nost which in the end may even decrease. The latter circumstance necessitated addressing the problem of evaluating production efficiency and considering the problem of investment efficiency (and its evaluation) as subordinate to the problem of production efficiency (and its evaluation). In this regard, it should be noted that economists were involved in the measurement of production efficiency: Bunich PG, Gesheva MV, Nagoev AB [4], Mourao P. R. [5], Le Corre P., Sepulcher A. [6], Ito K. [7], Bykova A., Jardon C. M. [8], Tarasov DV [9], Tumanov S.A. [10], Kuzina L.A. [11], Balatenysheva M.E. [12] and others.

Foreign methods for evaluating the effectiveness of investments

The content of a particular technique is determined by the nature of its origin, so it would be advisable to consider the prerequisites for the development of foreign and domestic experience in business planning. The first and most significant difference is the economic situation of countries in the period of investment development. [one]

Along with the growing popularity of Western literature, highlighting the experience of foreign investors in the field of project analysis, Russian practice used more and more new criteria for evaluating the effectiveness of investments. The marketing component of the project evaluation in the new version of the document is still not consecrated. As mentioned above, these guidelines are based on a thorough rethinking of foreign publications, so it is worth considering them. The approach to evaluating the effectiveness of UNIDO investment projects, created within the framework of the international organization of the United Nations in 1978, became one of the most widespread in the world, which explains its importance in the preparation of domestic documents of a similar nature. In 1991, the publication of this methodology was prepared in Russian, which sounded like the “Guide for the preparation of industrial technical and economic research”. This approach to writing a business plan allowed the specialist developing this document not to miss important points in describing the current and planned activities of the organization and to present the results in the most convenient for perception and understandable to a foreign investor. The United Nations Industrial Development Organization today itself resolves issues not only regarding the improvement and global use of its methodology, but also pays attention to its implementation in the form of computer programs. The methods differ by conducting a financial assessment, where various factors and indicators appear, as well as by the fact that the importance of writing a particular section of a business plan is different in each approach. In addition to UNIDO, the methods of such foreign organizations as the European Bank for Reconstruction and Development (EBRD), the World Bank for Reconstruction and Development (IBRD) and the International Finance Corporation (IFC) have become widespread. The last two of them belong to the World Bank Group, whose goal is to promote long-term economic development through the provision of loans and loans for investment. In this regard, these approaches are based on a deep analysis using a variety of flexible tools, as well as on a clear identification of the advantages and disadvantages of the project. If we compare these techniques with respect to the priority directions in the preparation of a business plan, the approaches of UNIDO, EBRD and IFC put the financial component of the project at the forefront, attach importance to justifying its economic efficiency, while the IBRD focuses on market analysis and economic conditions, which operates the company. Since the main part of these recommendations for developing a business plan is of the same nature, it is worthwhile to dwell on the main aspects of financial analysis. The internal rate of return, which shows the profitability of the project, is an important indicator in its development, but is not taken into account by all of the presented methods. Thus, the IBRD in its approach does not refer to this ratio, but requires a full presentation of the balance sheet and calculation of cash flows, which are not considered by the EBRD and which are not given sufficient attention from the IFC. As for the UNIDO methodology, all of the above elements of the analysis, including the sensitivity analysis of the project, are spelled out in it.

The internal rate of return, which shows the profitability of the project, is an important indicator in its development, but is not taken into account by all of the presented methods. Thus, the IBRD in its approach does not refer to this ratio, but requires a full presentation of the balance sheet and calculation of cash flows, which are not considered by the EBRD and which are not given sufficient attention from the IFC. As for the UNIDO methodology, all of the above elements of the analysis, including the sensitivity analysis of the project, are spelled out in it. [2] Probably, the popularity of the latter is due precisely to the requirements for the content and comprehensive development of the business plan. Thus, the conducted analysis allows us to say that the

development of Russian methods for assessing the economic efficiency of an investment project is fully based on drawing on the experience of Western countries. The similarity or uniformity of concepts in this case is expressed in:

- using the principle of alternativeness;
- taking into account the uncertainties and risks associated with the project;
- the use of global performance indicators; - presentation of the flow of products and resources in cash;
- project evaluation by commercial, institutional, financial, macroeconomic and technical criteria and parameters.

The organic food market has grown nearly 14% (for 2013 ear) per year since 2000, significantly faster than the total food market which grew approximately 3% per year over the same period.

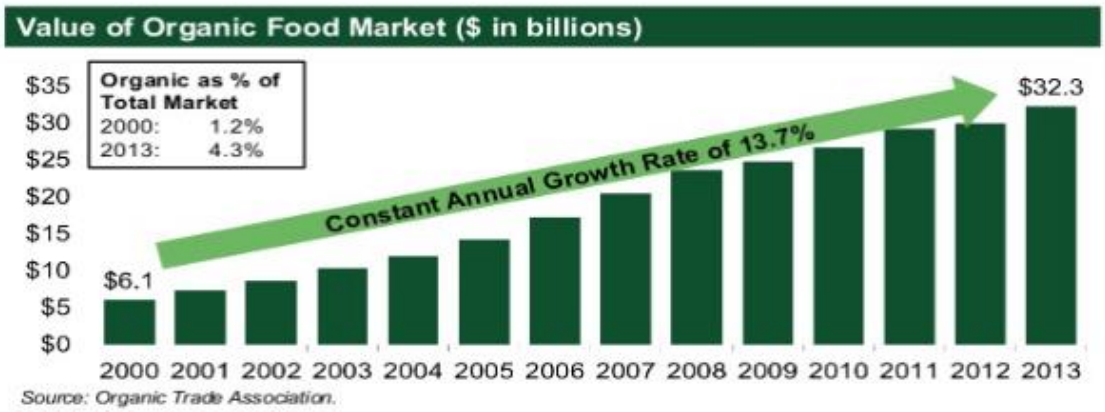


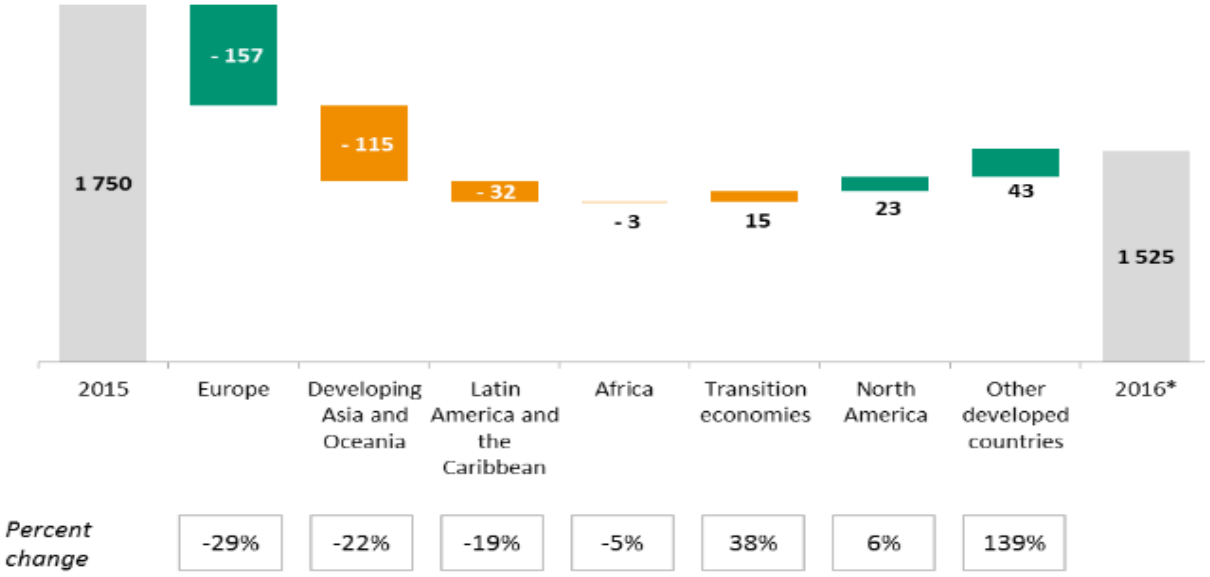
Fig.1. High organic market's dynamic. (www.iroquisvalleyfarms.com)

Analysis of attracting direct investment in the food industry in the Asia-Pacific region

The total global volume of foreign direct investment in 2016 was $ 1.75 trillion, which is 2% lower than the same indicator in 2015, 1 mainly due to weak growth in the global economy and increased geopolitical and economic risks. More than half of all FDI falls on industrialized countries ($ 962 billion, or 55% of world total in 2015, and over $ 1 trillion, or 59% of world total in 2016). The volume of FDI attracted by developing countries in 2016 amounted to $ 646 billion and decreased over the year by 14% 2; at the same time, FDI remains the main external source of financing for the economies of developing countries in comparison with portfolio investments, transfers of individuals from third countries and interstate assistance.

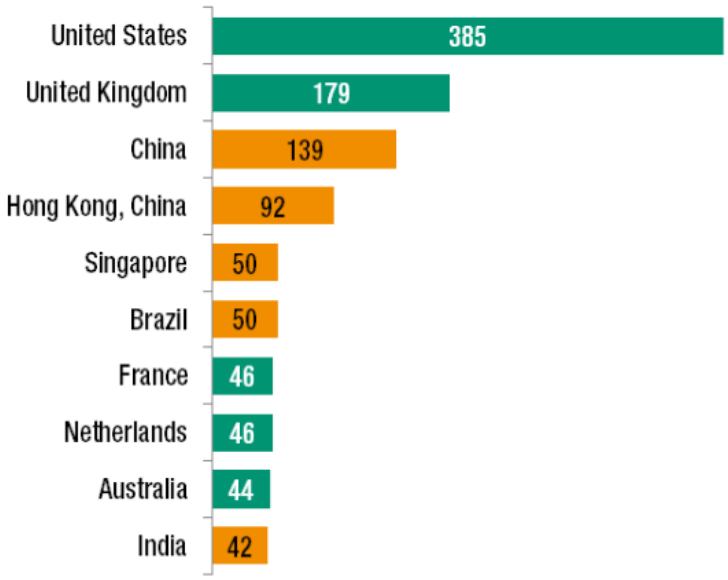
In 2015, the volume of foreign direct investment in the mining industry increased, while in the manufacturing sector, on the contrary, it declined, which was influenced by the decrease in capital investments due to a fall in market prices.

For example, FDI in developing countries of Asia (except for countries in the South Asian subregion) declined by 15% to $ 443 billion in 2016, which happened for the first time in five years. prices for commodity resources, as well as a decrease in the amount of retained earnings due to the narrowing of the positive margin between the revenues and expenditures of companies. World dynamics of FDI is shown in Table. 1, the structure of foreign direct investment in the context of a number of economic associations - in Fig. 2



Source: UNCTAD.

Fig.2. Regional contribution to global FDI flows, 2015-2015 (billion of US dollars)



Source: UNCTAD.

Fig.3. Estimated FDI inflows: top 10 host economies, 2016. (billion of US dollars)

As expected, the dynamics of foreign direct investment will continue to be under pressure from the uncertainty of the key indicators of the macroenvironment, weak demand, sluggish economic growth in countries that are large exporters, policies aimed at limiting tax optimization and a sharp decline in the profitability of transnational corporations (TNCs). It is assumed that the main factor for the revitalization of global foreign direct investment will be the steady growth of the global economy.

A distinctive feature of the modern international investment process is the liberalization of foreign direct investment, the reversal of their regulation towards investors and the creation of favorable conditions for attracting investment. The most active participants in the process of investment liberalization were countries in the Asia-Pacific region (APR), which in 2015 affected a number of sectors of national economies. Thus, China allowed foreign companies to create credit card processing units, lifted restrictions on foreign ownership of e-commerce companies, and also lifted a number of

restrictions on foreign investment in real estate. Liberalization in the field of foreign investment in India affected the scope of insurance and pension funds (increased the upper limit of foreign investment from 26 to 49%), antitrust laws, and 15 sectors of the economy (agriculture, civil aviation, construction, defense, a number of sectors of the extractive and manufacturing industry), in which restrictions on attracting investment from abroad were substantially lifted. [3]

Source: IBEF.

Fig.2. Major destination of processes food and aggricultural related product exports in FY 2016-2017 (billion of US dollars)

Modern foreign direct investment policies are shaped against the backdrop of challenges of economic uncertainty and instability. The paradigm of sustainable economic development introduces elements of multifactorism and additional challenges to the investment policy, which, taking into account the influence of economic globalization processes, forces governments in the field of investment to resort to multidirectional actions. This circumstance, along with the growth of state intervention in international investment processes, reduces the predictability.

Conclusion

Special attention is paid to the systemic risks of international investment processes, as well as the elimination of the shortcomings of pre-reform agreements. At the same time, the agenda of global investment development after 2015 implies activating new investment "thinking" at the national level: the priorities of investment processes should be shifted from merely promoting investments (identifying investment objects and providing investment incentives) to promoting investments, including facilitating investment conditions. [3]

Other measures developed by UNCTAD are aimed at increasing the transparency of investment activities of economic agents, ensuring the availability and timely receipt of information for investors, the formation and implementation of effective administrative procedures within the framework of investment liberalization policies, as well as increasing the predictability of investment policies pursued by national macroeconomic management bodies. In the framework of the reform, it is assumed that, in addition to the modernization of the infrastructure of investments at the national levels, states should stimulate international cooperation in the field of investment, including by changing the conditions of international investment agreements.

The first intermediate results of the movement and the dynamics of foreign direct investment in 2017 show that the priorities of modern investment policy are gradually shifting towards investments related to the development of the digital economy, which is becoming a noticeable factor in economic development and growth. The main advantages of the digital economy are increased competitiveness in almost all sectors of the economy, new opportunities for business development and private entrepreneurship, as well as additional opportunities for access to new markets and participation in global virtual value chains.

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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2018 **Issue:** 11 **Volume:** 67

Published: 30.11.2018 **http://T-Science.org**

SECTION 11. Biology. Ecology. Veterinary.

QR – Issue QR – Article

Madinakhon A. Kholmirzayeva
Researcher
Ministry of Higher and Secondary Special Education of Republic of Uzbekistan,
Andijan State University named after Z.M. Bobur,
Anidam1981@mail.ru

Anvar E. Zaynabiddinov
Doctor of Biological sciences
Ministry of Higher and Secondary Special Education of Republic of Uzbekistan,
Andijan State University named after Z.M. Bobur,
Azaynabiddinov@bk.ru

Shunkor S. Khushmatov
Doctor of Biological sciences
The Laboratory of Cell Biophysics of Institute of Biophysics and Biochemistry of National University of Uzbekistan
Khushmatov_Sh.S@bk.ru

Ergash Hh. Khalilov
Candidat of Biological sciences
Ministry of Higher and Secondary Special Education of Republic of Uzbekistan,
Andijan State University named after Z.M. Bobur

COMPARATIVE CHARACTERISTICS OF THE FUNCTIONAL ACTIVITY OF THE CARDIORESPIRATORY SYSTEM IN PRIMARY SCHOOLCHILDREN (ON THE EXAMPLE OF SOME DISTRICTS OF ANDIJAN REGION)

Abstract: *The purpose of this research is a comparative study of the functional activity of the cardiorespiratory system in primary schoolchildren (7–11 years old) located in different climatic and geographical zones of Andijan region of the Republic of Uzbekistan. The studies revealed that the vital capacity of lungs (l) in primary schoolchildren (7–11 years old) increases linearly in school sequences of desert, pre hilly, hilly and foothill climatic–geographical regions. The obvious difference in the values of this indicator was registered between schools #17 and #5, which are located in the desert and foothill zones, respectively, while in these schools, boys and girls have minimum–maximum values of lungs capacity (l) increased by 1.15–1.28 (1.26) va 1.2–1.39 (1.36). In studies at schools #17–, #26–, #30–, #4 and #5 for primary schoolchildren, the range of heart rate (times/min) for boys was 95–79; 93–79; 94–78; 93–80 and 94–82, respectively, and for girls – 93–82; 95–85; 94–86; 93–85 and 87–85, respectively, while in both sexes in the range of 7–11 years, the heart rate decreases in a linear fashion. Also, for primary schoolchildren (7–11 years old) of secondary schools #17 and #5, in the desert and foothill climatic–geographical zones, the values of blood pressure indicators (systolic/diastolic), respectively, have a high value of 1.03/1.12 and 1.02/1.08.*

Key words: *climatic–geographical zones, primary schoolchildren (7–11 years old), lung capacity, heart rate, blood pressure.*

Language: *English*

Citation: Kholmirzayeva, M. A., Zaynabiddinov, A. E., Khushmatov, S. S., & Khalilov, E. H. (2018). Comparative characteristics of the functional activity of the cardiorespiratory system in primary schoolchildren (on the example of some districts of Andijan region). *ISJ Theoretical & Applied Science, 11 (67),* 286-292.

Soi: http://s-o-i.org/1.1/TAS-11-67-47 ***Doi***: https://dx.doi.org/10.15863/TAS.2018.11.67.47

1. INTRODUCTION

Assessment of the functional state of the cardiovascular/respiratory systems is of current importance in terms of clarifying the health and growth trends of the younger generation and the influence of environmental factors on them [1, 3–18].

Morphological and functional regulatory mechanisms expressing the state of the process of adaptation to the influence of various factors are not sufficiently developed and in turn this state leads to the appearance of a kind of response of the cardiorespiratory system in relation to the influence of the "stress" factor characteristic of the school educational process. In particular, some researchers registered the appearance of changes in the rhythm of heart contraction under the influence of tension in the learning process of primary schoolchildren aged 8–10 years [2, 5].

In the studies carried out by A.A. Safronov and I.T. Aryslanov (2013) on the study of physical development and training of schoolchildren (grades 5–6) in urban conditions (Tashkent) using anthropometric research methods revealed a noticeable decline in the physical development of schoolchildren in general terms and the relevance of scientific/practical research was proved direction [4, 455–458].

Environmental anthropology is a branch of science that studies the influence of environmental factors on the human body [5, 818–825] And one of the main areas of science, more precisely in the study of the influence of environmental factors on the human population, is the analysis of indicators of the physical development of children [6, 65].

The response of the morphophysiological systems of the human body to various endogenous/exogenous factors is directly determined by the somatic–typological characteristics of the organism. At the same time, the indicators of the physical development of the body of children are important as a reliable marker of the successful implementation of adaptive capacities under the influence of various factors. [2, 3]. Especially, the period of schooling is of fundamental importance in the physical/spiritual improvement in the personal development and future life of the human ontogenesis [3, 3–20].

Similarly, a high level of health, physical development and training as part of a system of universal values is essential in the full realization of the individual's potential [3, 3–20].

Based on the above data, the purpose of this research is a comparative study of the functional activity of the cardiorespiratory system in primary school children (7–11 years old) located in different climatic and geographical zones of Andijan region of the Republic of Uzbekistan.

2. MATERIAL AND METHODS

2.1. Object and study conditions

Studies were conducted during 2013–2018 at secondary school #17 of the Ulugnor district (desert zone), secondary school #26 of Pakhtabod district (before the hilly zone), secondary school #4 of the Markhamat district (pre–hilly zone), secondary school #30 of the city of Andijan (pre–hilly zone), secondary school #5 cities of Khanabad (foothill zone) of Andijan region.

Experiments in our studies were carried out in full compliance with principles of the Declaration of the Helsinki International Medical Association (World Medical Association, WMA) for determining the functional parameters of primary school pupils. The experiments were conducted with the written consent of the parents of schoolchildren and school administrations and the oral agreement of the schoolchildren themselves.

2.2. Research methods

In the studies, standard anthropometric research methods were used [7, 76–79].

Measurement of the vital capacity of the lungs (ml). In experiments, the vital capacity of the lungs was measured by the standard method [4, 455–458; 8, 10–336; 9, 30] using an air spirometer. In this case, the subject after a deep breath carries out the movement of the maximum expiration into the spirometer hose. The measurement is performed in triplicate and the highest indicator is recorded (Fig. 1A).

Measurement of arterial blood pressure (mm Hg) is carried out by a tonometer using Korotkov method.

The blood pressure of schoolchildren was measured using a standardized medical tonometer, in a sitting position on a chair, in the wrist area, based on the measurement of systolic blood pressure and diastolic blood pressure (mm mercury column) [10, 7–14; 11, 3–24].

Measurements of heart rate are based on measurements of the number of pulses using the tonometric method [10, 7–14; 12, 3–42].

2.4. Data analysis

The results were statistically processed by a special software package OriginPro v. 8.5 SR1 (EULA, USA). The results of experiments processed mathematically–statistically using standard biometric methods [4, 455–458; 13, 5–312; 14, 7–127]. The results are given in the *M*±*m* form of the values of the experiments carried out in n replicates, *M* is the arithmetic average value and *m* is the standard error value. In addition, the results of the experiments, a statistically significant level of values between the groups were calculated using the Student's *t*–test and were evaluated as statistically reliable at *p* values <0.05, *p*<0.01 [15, 675–678].

3. RESULT AND DISCUSSION

In the study, vital capacity of the lungs (1) for primary schoolchildren (7–11 years old) is shown in the following table (Table 1).

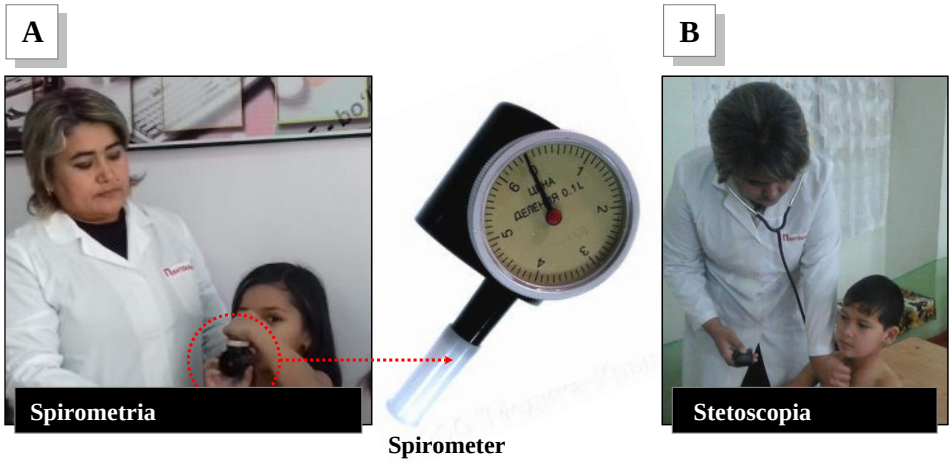

Figure 1. Methods for measuring the vital capacity of the lungs (*l*) (spirometry) and heart rate (times/min) used in the studies (stetoscopia) (Andijan region, 21/04/2017).

Table 1. The values of the vital capacity of the lungs (*l*) in primary school students in some schools of the Andijan region of the Republic of Uzbekistan (*M*±*m*)

Secondary school number 17 in Ulugnor district										
Vital capacity of the lungs (l)	**Boys** (*n*=85)					**Girls** (*n*=79)				
	7 years old (*n*=19)	8 years old (*n*=21)	9 years old (*n*=16)	10 years old (*n*=17)	11 years old (*n*=12)	7 years old (*n*=16)	8 years old (*n*=12)	9 years old (*n*=19)	10 years old (*n*=18)	11 years old (*n*=14)
	1.15±0.03	1.18±0.04	1.22±0.04*	1.51±0.06**	1.60±0.07**	1.10±0.06	1.14±0.05*	1.19±0.08**	1.23±0.09**	1.32±0.06**
	Secondary school number 26 in Pakhtaobod district									
	Boys (*n*=90)					**Girls** (*n*=82)				
	7 years old (*n*=16)	8 years old (*n*=19)	9 years old (*n*=11)	10 years old (*n*=21)	11 years old (*n*=23)	7 years old (*n*=17)	8 years old (*n*=16)	9 years old (*n*=12)	10 years old (*n*=24)	11 years old (*n*=13)
	1.24±0.04	1.41±0.03	1.46±0.06*	1.54±0.04**	1.63±0.05**	1.18±0.05	1.20±0.07*	1.28±0.04**	1.39±0.07**	1.41±0.06**
	Secondary school number 30 in Markhamat district									
	Boys (*n*=76)					**Girls** (*n*=88)				
	7 years old (*n*=14)	8 years old (*n*=18)	9 years old (*n*=12)	10 years old (*n*=13)	11 years old (*n*=19)	7 years old (*n*=11)	8 years old (*n*=22)	9 years old (*n*=17)	10 years old (*n*=23)	11 years old (*n*=15)
	1.25±0.05	1.34±0.05	1.36±0.05*	1.44±0.07**	1.65±0.06**	1.12±0.04	1.18±0.03*	1.21±0.03**	1.32±0.04**	1.38±0.05**
	Secondary school number 4 in Andijan city									
	Boys (*n*=82)					**Girls** (*n*=78)				
	7 years old (*n*=14)	8 years old (*n*=12)	9 years old (*n*=18)	10 years old (*n*=20)	11 years old (*n*=18)	7 years old (*n*=16)	8 years old (*n*=11)	9 years old (*n*=17)	10 years old (*n*=22)	11 years old (*n*=12)
	1.37±0.05	1.55±0.04	1.68±0.08*	1.70±0.08**	1.73±0.07**	1.23±0.06	1.45±0.08*	1.64±0.04**	1.68±0.05**	1.71±0.08**
	Secondary school number 5 in Khonodod city									

	Boys (*n*=87)					**Girls** (*n*=84)				
	7 years old (*n*=19)	8 years old (*n*=14)	9 years old (*n*=24)	10 years old (*n*=13)	11 years old (*n*=17)	7 years old (*n*=14)	8 years old (*n*=17)	9 years old (*n*=18)	10 years old (*n*=16)	11 years old (*n*=19)
	1.37±0.04	1.44±0.04	1.76±0.07*	1.84±0.08**	1.87±0.04**	1.26±0.06	1.34±0.04*	1.58±0.05**	1.70±0.06**	1.76±0.08**

Note: *, ** – express the statistical significance of the difference between the experimental groups (II, III, IV and V) compared with other groups (7 years) (* – $p<0.05$; ** – $p<0, 01$).

Based on the results of the experiments, primary schoolchildren in the surveyed secondary schools found that the vital capacity of the lungs (*l*) increased in accordance with the age range of 7–11 (Figure 2A, B).

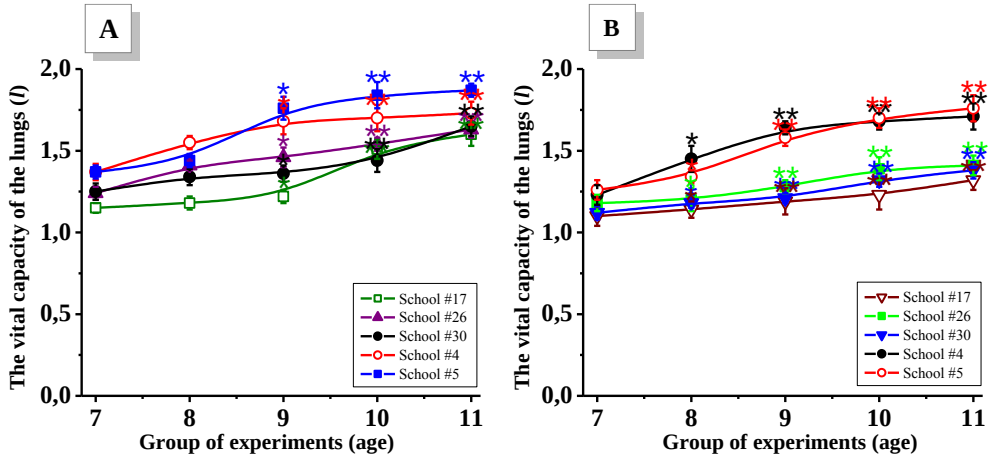

Figure 2. The dynamics of changes in the values of the indicators in the vital capacity of the lungs (*l*) of schoolchildren in the range of 7–11 years of primary classes of secondary schools where the studies were conducted. A. Boys. B. Girls. * – $p<0.05$, ** – $p<0.01$ relative to the control.

In particular, the vital capacity of the lungs (l) among primary school students (7–11 years old) at schools #17, #26, #30, #4 and #5 in the minimum–maximum values for boys is 1, 15–1.07 (average 1.28); 1.18–1.55 (average 1.38); 1.22–1.76 (mean 1.49); 1.51–1.84 (average 1.61) and 1.60–1.87 (average 1.69), respectively, and 1.1–1.26 for girls, respectively (average 1.19); 1.14–1.45 (average value 1.26); 1.19–1.64 (mean 1.38); 1.23–1.68 (mean 1.46); It was found that fluctuations of 1.32–1.76 were observed (mean 1.62).

It was found that the vital capacity of the lungs (1) for primary school students (7–11 years old) increases in the sequence of schools in deserts, steppes, foothills and mountainous climatic geographical regions. Obvious differentiation of these values was noted among schools #17 in the desert area and #5 located in the foothills, where the minimum–maximum values are the vital capacity of the lungs (l) for boys, and also for girls, respectively – 1.15–1.28 (1.26) and 1.2–1.39 (1.36) respectively.

The study showed that the rate of increase in vital capacity of the lungs (1) among primary schoolchildren (7–11 years old) was 39.2% among boys aged 7–11 years, 6.1% at 7–9 years, at 9 – 11 years 31.2%. It was found that the value of this indicator is 20%, 8.2% and 10.9% respectively for girls.

The study also found that the growth rate of the vital capacity of the lungs (*l*) among primary schoolchildren at school #26 was 31.5% among boys aged 7–11 years, between 7–9 years old 17.7% and 11 years, 11.6% respectively. It was found that the value of this indicator is 19.5%, 8.5% and 19.5% respectively for girls.

At the next school #30, the growth rate of the lung vital capacity of pupils in primary classes was 32% in boys in the age range of 7–11 years old, 8.8% in the age of 7–9 years, 21.3% in the age range of 9–11 years. It was found that the value of this indicator is 23.2%, 8% and 14% respectively for girls.

The study showed that the rate of increase in lung capacity (*l*) among primary schoolchildren at school #4 was 26.3% for boys aged 7–11 years, 22.6% for children aged 7–9 years, 9% for children aged 9–11 years. The value of this indicator was found in girls – 39%, 33.4% and 4.3% respectively.

At school #5, where studies were carried out, the rate of increase in vital capacity of the lungs (*l*) at primary schoolchildren was 36.5% in boys aged 7–11 years, 28.5% in the age group 7–9–11 years and 6 , 3% in the age group of 9–11, respectively. It was

found that the value of this indicator is 39.7%, 25.4% and 11.4% respectively for girls.

In general, the dynamics of the growth rate of lung capacity (*l*) among primary schoolchildren (7–11 years old) of secondary schools #17, #26, #30, #4 and #5 (7–11 years old) is shown in the following figure (Figure 3A, B).

At the next stage of the study, the values of the functional activity of the cardiovascular system were analyzed in primary schoolchildren. Heart rate (times/min), systolic/diastolic blood pressure (mm.s.s.) were studied comparatively (Table 2).

From the results it can be seen that the heart rate of pupils (times/min) of primary classes (7–11 years old) at schools #17, #26, #30, #4– and #5 was 95–79; 93–79; 94–78; 93–80 and 94–82 respectively. The value of this indicator for girls was 93–82; 95–85; 94–86; 93–85 and 87–85 respectively. At the same time, it was found that the heart rate in the age group of 7–11 years decreases in linearity in both sexes.

It is known that the functional state and reserve capacity of the cardio–respiratory system in the human body determine the degree of adaptation of the organism to physical activity, the formation of appropriate responses in changing environmental conditions [16, 3–22].

Anthropometric indicators also show a significant change in children in the context of various diseases, including respiratory diseases [10, 7–14]. For example, some researchers analyzed using spirometry in primary schoolchildren, the characteristics of the respiratory tract and the ecological state of posture formation, based on measuring the vital capacity of the lungs (*l*) [17, 4–18].

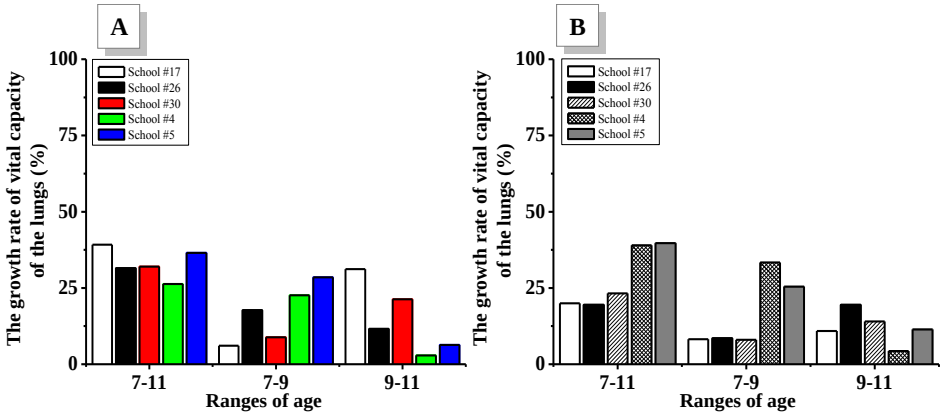

Figure 3. The value of indicators of an increase in the growth rate of primary school students in the age range of 7–11 years. A. In boys. B. In girls.

Table 2. Functional indicators of the cardiovascular system of primary schoolchildren (7–11 years old) at some schools of Andijan region of the Republic of Uzbekistan (*M*±*m*)

Secondary school number 17 in Ulugnor district										
Readings	**Boys** (*n*=85)					**Girls** (*n*=79)				
	7 y.o. (*n*=19)	8 y.o. (*n*=21)	9 y.o. (*n*=16)	10 y.o. (*n*=17)	11 y.o. (*n*=12)	7 y.o. (*n*=16)	8 y.o. (*n*=12)	9 y.o. (*n*=19)	10 y.o. (*n*=18)	11 y.o. (*n*=14)
Heart rate (times/min)	95±4	92±4	89±3	84±5	79±4	93±4	93±2	85±5	83±3	82±5
Arterial pressure (mercury column): systolic; diastolic	101.4±5.8	101.8±4	104±6.6	102±3.8	100.5±4.7	103.3±4.4	102±5.6	101.5±5.4	104.4±4.8	104.8±5.2
	55.2±2.2	59.6±4.6	60±4.4	62.2±4.3	63.7±5.6	58.4±3.5	60.7±4.3	61.4±4.5	64.2±6.7	64.8±5.5
Secondary school number 26 in Pakhtaobod district										
Readings	**Boys** (*n*=90)					**Girls** (*n*=82)				
	7 y.o. (*n*=16)	8 y.o. (*n*=19)	9 y.o. (*n*=11)	10 y.o. (*n*=21)	11 y.o. (*n*=23)	7 y.o. (*n*=17)	8 y.o. (*n*=16)	9 y.o. (*n*=12)	10 y.o. (*n*=24)	11 y.o. (*n*=13)
Heart rate (times/min)	93±3	94±3	92±3	86±3	79±2	95±3	94±3	92±4	88±3	85±5
Arterial pressure (mercury column): systolic; diastolic	103.4±5.2	100±5.4	102.6±4.4	104.6±4.7	102.8±5.6	101.6±3.5	105±5.8	98.7±5.8	104.2±4.7	104.7±4.6
	60.4±3.6	64.4±5.3	65.3±5.2	65.7±4.4	64.1±3.8	61.2±4.6	63.5±4.4	65.5±4.8	63.7±5.7	65.3±5.2
Secondary school number 30 in Markhamat district										
Readings	**Boys** (*n*=76)					**Girls** (*n*=88)				
	7 y.o.	8 y.o.	9 y.o.	10 y.o.	11 y.o.	7 y.o.	8 y.o.	9 y.o.	10 y.o.	11 y.o.

	(*n*=14)	(*n*=18)	(*n*=12)	(*n*=13)	(*n*=19)	(*n*=11)	(*n*=22)	(*n*=17)	(*n*=23)	(*n*=15)
Heart rate (times/min)	94±2	93±3	90±2	84±2	78±3	94±3	94±4	87±4	85±2	86±4
Arterial pressure mercury column): systolic; diastolic	102.7±4.6	98.7±4.8	101.8±5.7	102.4±3.5	103.5±5.7	103.6±3.8	104.5±5.2	103.5±4.6	105.4±4.5	105.7±5.8
	58.6±2.7	65.2±4.5	63.9±3.7	64.8±2.4	65.8±3.6	60.7±3.9	62.7±5.5	64.3±4.7	65.2±5.8	67.4±4.6
Secondary school number 4 in Andijan city										
Readings	**Boys** (*n*=82)					**Girls** (*n*=78)				
	7 y.o. (*n*=14)	8 y.o. (*n*=12)	9 y.o. (*n*=18)	10 y.o. (*n*=20)	11 y.o. (*n*=18)	7 y.o. (*n*=16)	8 y.o. (*n*=11)	9 y.o. (*n*=17)	10 y.o. (*n*=22)	11 y.o. (*n*=12)
Heart rate (times/min)	93±4	94±5	90±3	84±3	80±4	93±5	90±3	88±5	86±3	85±5
Arterial pressure (mercury column): systolic;diastolic	102±3	102.7±5.6	103.8±4.7	102±4.5	101±6.8	102.6±4.6	105.5±5.5	104.5±3.8	104±5.9	104±4.7
	59±3.6	63±4.8	64±3.3	65.8±5.5	65.9±4.6	61±4.4	63.7±4.5	64.8±4.8	66.3±5.2	67.4±6.8
Secondary school number 5 in Khonodod city										
Readings	**Boys** (*n*=87)					**Girls** (*n*=84)				
	7 y.o. (*n*=19)	8 y.o. (*n*=14)	9 y.o. (*n*=24)	10 y.o. (*n*=13)	11 y.o. (*n*=17)	7 y.o. (*n*=14)	8 y.o. (*n*=17)	9 y.o. (*n*=18)	10 y.o. (*n*=16)	11 y.o. (*n*=19)
Heart rate (times/min)	94±3	90±4	95±5	85±4	82±4	87±5	90±5	84±4	84±3	85±5
Arterial pressure (mercury column): systolic;diastolic	105.2±4.4	104.7±5.4	105.8±5.2	103.6±2.8	105.6±6.4	104.6±6	104.8±5.7	105.4±3	105±7.2	104.4±6.2
	61.5±3.2	68.2±5.6	68.9±6.7	66.8±4.4	67.7±4.6	63.9±5.7	65.7±3.5	65.5±4.9	66.3±4.6	69±4.5

Note: *. ** – express the statistical significance of the difference between the other experimental groups compared with the first (7 years) groups (* – $p<0.05$; ** – $p<0.01$).

In the study. it was found that in the control group. the vital capacity of the pupils in primary classes is 2.12–2.35 *l* and a significant decrease in the condition of scoliosis [17, 4–18].

In the conducted studies it was revealed that the value of blood pressure (systolic/diastolic) in primary school pupils (7–11 years old) at schools #17–, #26–, #30–, #4– and #5 was – 101.4/55.2–100.5/63.7; 103.4/60.4–102.8/64.1; 102.7/58.6–103.5/65.8; 102/59–101/65.9 and 105.2/61.5–105.6/67.7 respectively. The value of this indicator for girls in the sequence of schools is 103.3/58.4–104.8/64.8; 101.6/61.2–104.2/65.3; 103.6/60.7–105.7/67.4; 102.6/61–104/67.4 and 104.6/63.9–104.4/69, respectively.

Theart rate (times/min), and the spectrum value of the blood pressure indicator (systolic/diastolic) (mm) in general terms corresponds to the values of the normal standard. In particular. in the existing literature, the heart rate from 6 to 12 years is 78–100 times/min, and the systolic/diastolic blood pressure is 100–126/60–82 mm Hg.

At the same time, in the circle of individual schools there is no difference in the dynamics of growth rates of blood pressure indicators (systolic/diastolic), but at a school located in the desert zone blood pressure (systolic/diastolic) decreases in comparison with the school in the foothill zone. In particular. the blood pressure value (systolic/diastolic) in primary school pupils (7–11 years old) at schools #17 and #5 of boys and girls, respectively, is 1.03/1.12 and 1.02/1.08 times higher.

These results are consistent with available literature data. In particular, a study in the Kyrgyz Republic showed that high rates of functioning of the cardiorespiratory system in children (7–12 years old) in an average mountain region (altitude 1050 meters above sea level) were high [18, 4–18; 19, 4–21].

In addition. the researchers found that in some climatic and geographical regions. the value of heart rate in girls of primary school is much higher than that of boys [1; 3–18]. In particular. it was found that boys aged 9 children and girls aged 11 years high blood pressure. lung capacity is high in boys aged 11–12 years and girls 12 years old [1; 3–18].

Conclusion

In studies. the data obtained indicate that the vital capacity of the lungs (*l*) among primary schoolchildren (aged 7–11 years) in the desert. Steppe, foothills and mountain climatic zones increases linearly. Obvious differentiation of these values was registered among schools #17 in the desert area and in schools #5 in the foothills. where in the data of the indicated schools the vital capacity of the lungs (*l*) with the minimum – the maximum indicators for boys, as well as for girls – 1.15–1.28 (1.26) and 1.2–1.39 (1.36), respectively. For pupils of schools #17, #26–, #30–, #4– and #5 of junior schoolchildren (7–11 years old). the heart rate (times/min) for boys is 95–79; 93–79; 94–78; 93–80 and 94–82; for girls, 93–82; 95–85; 94–86; 93–85 and 87–85 respectively. It was found that in both sexes in the age group 7–11, heart rate decreases in a

linear fashion. The value of blood pressure (systolic/diastolic) in primary school pupils (7–11 years old) in schools #17 and #5 in desert and mountain climatic geographical zones (mm Hg c.) For boys and girls is 1.03/1.12 and 1.02/1.08 times respectively.

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Contents

Scientific publication

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ORCID

THOMSON REUTERS, ORCID (USA)
http://orcid.org/0000-0002-7689-4157

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3. The list of articles published in the scientific journal ISJ Theoretical & Applied Science
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Presidium of the Academy

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Presidium of the Academy

Signed in print: 30.11.2018. Size 60x84 1/8

«Theoretical & Applied Science» (USA, Sweden, KZ)
Scientific publication, p.sh. 24.125. Edition of 90 copies.
http://T-Science.org E-mail: **T-Science@mail.ru**

Printed «Theoretical & Applied Science»