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### ДОКЛАДЫ

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## **PRINCIPLES OF DEVELOPMENT OF OSMOTICALLY AND BIOLOGICALLY ACTIVE COMPOSITIONS FOR TECHNOLOGIES OF FERMENTED MILK DRINKS**

**Abstract.** Currently, yogurt is considered to be the most popular dairy product in the world. The high content of skim milk, Bulgarian sticks and thermophilic *Streptococcus*, the content of which in the finished product at the end of the term is not less than 107 CFU in 1g of the product, create a unique recognizable profile of the product. Taking into account the specifics of Kazakhstan, in particular, geographical, socio-cultural factors, as well as the centuries-old history of camel milk consumption, the problem of scientific justification and development of industrial technologies of yogurt on its basis is actualized. The research presents the results of the development of osmotically active sweetening composition with pronounced probiotic properties. With its use, the technology of the creation of yogurt from camel milk, including low-lactose one, has been developed. It was found that the optimum level of syrup is about 5% by weight of the product. The analysis of the produced yogurt and low-lactose yogurt showed their high organoleptic characteristics. The developed technology suggests the possibility of its implementation in the dairy industry, producing dairy products.

**Key words:** camel milk, fermented milk drink, ferment, probiotic, fructose, isomaltulose, lactulose.

Among the many problems associated with the development of society, the most global is the task of improving the structure of nutrition of the population, ensuring the availability of food products, as well as the creation of enriched foods with desired properties that contribute to the adaptation of the organism in a super-dynamic environment [1-5].

The practical achievement of the goals declared by the state policy in the field of production and consumption of food products is directly related to the technologies of milk processing, as an important component in human nutrition throughout his life [1,6,23].

One of the most popular dairy products today is yogurt, which is included in many diets, and is also used in cosmetology. Yogurt is a fermented milk product with a high content of skimmed milk solids, produced using a mixture of Bulgarian sticks and thermophilic *Streptococcus* [7].

*Lactobacillus bulgaricus* is a probiotic bacterium. The energy of exothermic process ( $\Delta H < 0$ ) is obtained by microorganisms as a result of homofermentative lactic fermentation. In this case, the Bulgarian stick synthesizes peptidoglycanhydrolase - specific enzyme responsible for the hydrolysis of peptidoglycan required for the microbiological process. It is known to be an important component of the cell wall of bacteria, and also produces extracellular polysaccharides that improve structure, increase stability and prevent yogurt syneresis. The second necessary microbiological component is thermophilic

Streptococcus, which is a plant probiotic. Under the action of enzymes secreted by Streptococcus, lactose fermentation occurs with the formation of lactic acid. Lactic acid destroys the putrid bacteria that cause food to rot in the colon [8].

Taking into account the specifics of Kazakhstan, in particular, geographical, socio-cultural factors, as well as the centuries-old history of camel milk consumption, the problem of scientific justification and development of industrial technologies of yogurt on its basis is actualized. At the same time, it is advisable to enrich the probiotic product with prebiotics, increasing the effectiveness of preventive action [9,10].

One of the aspects of this problem is the development of a prebiotic composition with pronounced sweetening properties. It should be borne in mind that an unbalanced high-calorie diet with high consumption of fast-digested simple sugars in daily diets can provoke the risk of obesity, type 2 diabetes, etc. [8].

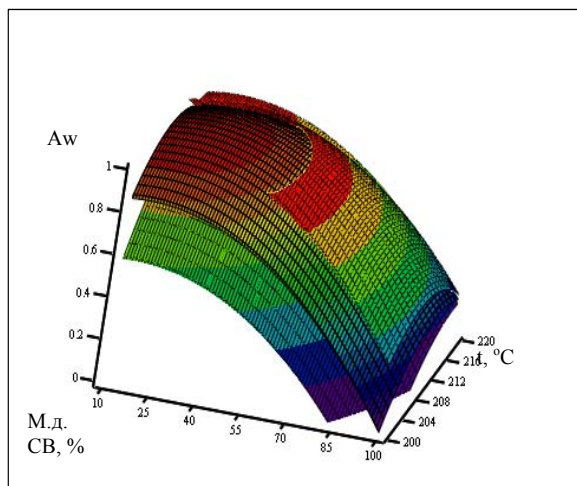
The aim of the work was to develop and study a sweetening osmotically active composition with prebiotic properties from the position of identifying the laws of formation of its thermodynamic characteristics depending on the concentration and species characteristics of solutions.

Using the criteria assessment for a number of factors: safety/availability/efficiency/manufacturability, etc. were originally selected osmotically active substances such as fructose, isomaltulose, inulin, lactulose, oligofructose.

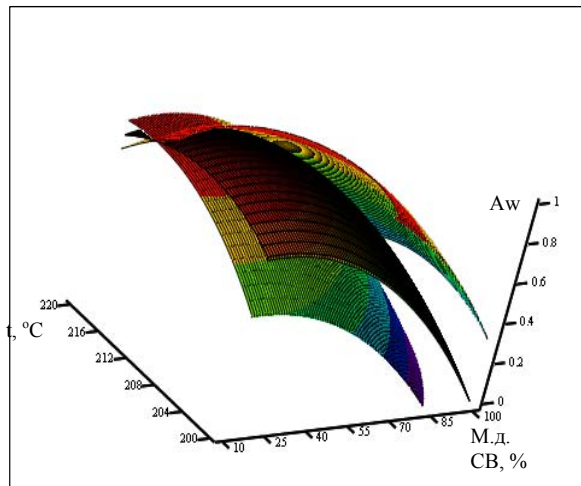
A complete factorial experiment for two factors - temperature and concentration for the above substances-was carried out. The response was the water activity index ( $A_w$ ) in the solution. Statistical processing and visualization of experimental data was carried out using the methods of matrix algebra with the help of the programs "Microsoft Exel", "CurveExpert" and "MatLab».

Regression equations were found for all solutions of carbohydrates, as well as graphical data on the interpretation of numerical data on the dependence of osmotic pressure and water activity on the concentration of solutions of carbohydrates.

On pictures 1 and 2 respectively, a graphical interpretation of the dependence of water activity and osmotic pressure on the concentration of aqueous solutions of fructose is presented.



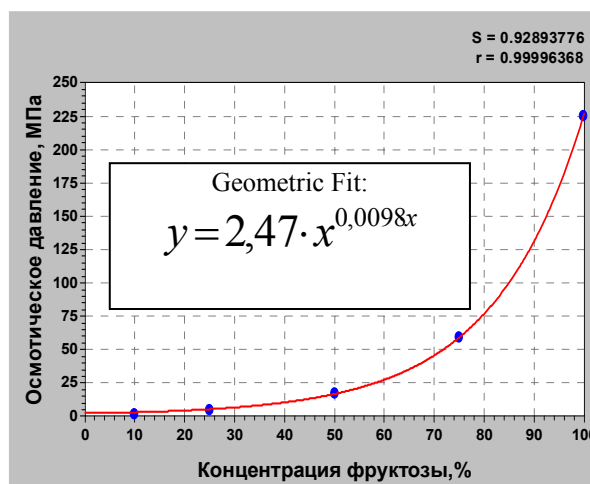
M,K,L



M,K,L

Picture 1 - The response surface of the regression equation, the lower and upper confidence intervals

Picture 1 shows that the surfaces of the upper and lower confidence limits have specific breaks. In fact, in these areas, the values of  $A_w$  should be taken as one or zero, respectively.



Picture 2 - Dependence of osmotic pressure on the concentration of fructose solutions

By analogy with the scheme of fructose research, the results were experimentally obtained, but the regression equations for solutions of inulin, lactulose, oligofructose and isomaltulose were obtained - table 1.

Table 1 - decoded  $A_w$  regression equations for inulin, lactulose, oligofructose and palatinose solutions

The name of carbohydrate	Regression equations
Inulin	$f(x, y) := 0.89 - 0.4 \frac{x-55}{45} + 0.05 \frac{y-20.5}{1.5} + 0.01 \frac{x-55}{45} \cdot \frac{y-20.5}{1.5} - 0.24 \left( \frac{x-55}{45} \cdot \frac{x-55}{45} \right) - 0.08 \left( \frac{y-20.5}{1.5} \cdot \frac{y-20.5}{1.5} \right)$ (1)
Lactulose	$f(x, y) := 0.8994 - 0.35 \frac{x-55}{45} - 0.016 \frac{y-20}{1} + 0.012 \left( \frac{x-55}{45} \cdot \frac{y-20}{1} \right) - 0.2803 \left( \frac{x-55}{45} \cdot \frac{x-55}{45} \right) + 0.025 \frac{y-20}{1} \cdot \frac{y-20}{1}$ (2)
Oligofructose	$f(x, y) := 0.91 - 0.45 \frac{x-55}{45} - 0.36 \frac{x-55}{45} \cdot \frac{x-55}{45} - 0.01 \left( \frac{y-21}{1} \cdot \frac{y-21}{1} \right)$ (3)
Isomaltulose	$f(x, y) := 0.83 - 0.251 \frac{x-55}{45} + 0.24 \frac{y-20.5}{1.5} + 0.231 \frac{x-55}{45} \cdot \frac{y-20.5}{1.5} - 0.25 \left( \frac{x-55}{45} \cdot \frac{x-55}{45} \right)$ (4)

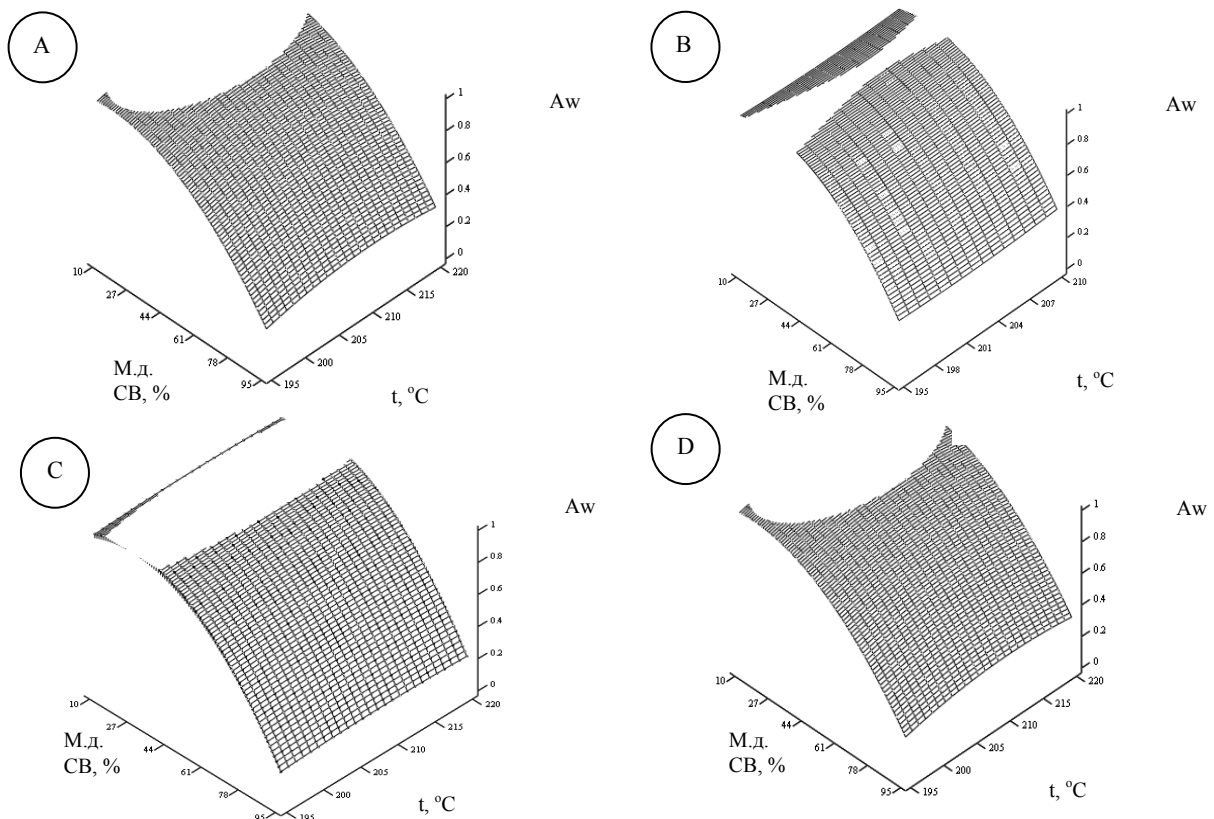
The analysis of all the above data shows that the results are similar to fructose studies: the regression equations describe the dependence under study with a certain error, which is determined by the temperature setting error ( $(\pm 0,5)^{\circ}\text{C}$ ). In other words, the attempt to process the results as the data of a complete factorial experiment for two factors was somewhat incorrect.

The results of further calculations showed that the coefficients in the regression equation of inulin and lactulose are significant. В уравнении регрессии олигофруктозы не значимы коэффициенты при  $y$  и  $x \cdot y$ , изомальтулозы - при  $y^2$ .

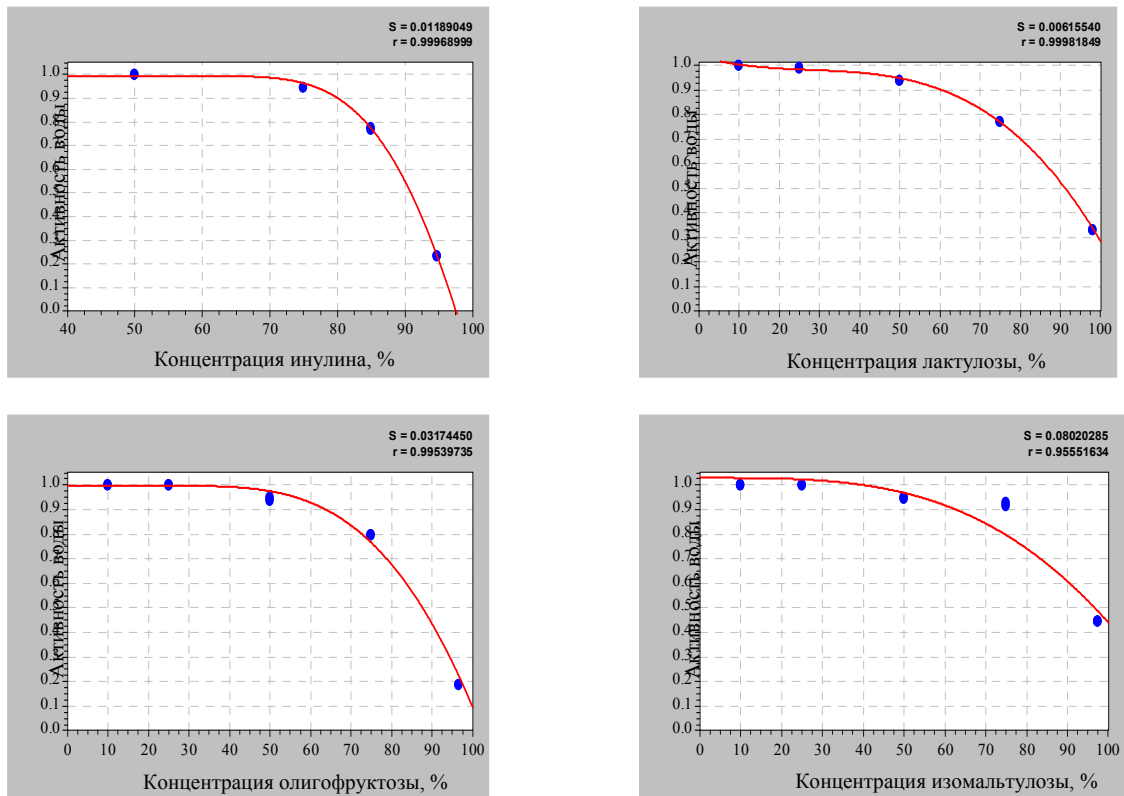
The type of  $a_w$  response surfaces described by adjusted regression equations is shown in pic. 3.

In this regard, the results of the experiment were processed as experimental data for one factor – the concentration of carbohydrates. Processing was carried out using the program "CurveExpert". The data are presented in figure 4.





Picture 3 - Surface response regression equations of carbohydrates (A - inulin, B - lactulose, C - oligofructose, D - isomaltulose)



Picture 4 - Graphical interpretation of the dependence of  $A_w$  on the concentration of carbohydrates



Table 2 presents the corresponding regression equations for each of the described carbohydrates, taking into account the error values.

In accordance with the results of the experiment to identify Aw depending on the concentration of osmotically active agents, as well as taking into account the biological properties of carbohydrates, in particular, prebiotic, low glycemic index, etc., the research framework was narrowed to a specific model - fructose:isomaltulose:lactulose.

Table 2 - Aw regression Equations for solutions of inulin, lactulose, oligofructose and isomaltulose

The name of carbohydrate	Regression equations
Fructose	$Y = 9,960 \cdot 10^{-1} \pm 1,160 \cdot 10^{-1} - (1,140 \cdot 10^{-3} \pm 3,100 \cdot 10^{-4}) \cdot x + (2,0357 \cdot 10^{-5} \pm 6,620 \cdot 10^{-6}) \cdot x^2 - (9,0024 \cdot 10^{-7} \pm 3,950 \cdot 10^{-7}) \cdot x^3 \quad (5)$
Inulin	$y = (0,994 \pm 5,02 \cdot 10^{-3}) - (23,267 \pm 9,73 \cdot 10^{-6}) e^{(1,295 \cdot 10^6 \pm 2,48 \cdot 10^{-7}) \cdot x - (2,822 \pm 6,45 \cdot 10^{-4})} \quad (6)$
Lactulose	$y = 1,036 \pm 7,04 \cdot 10^{-3} - (4,64 \cdot 10^{-3} \cdot x \pm 8,44 \cdot 10^{-5}) + (1,43 \cdot 10^{-4} \cdot x^2 \pm 1,22 \cdot 10^{-5}) - (1,724 \cdot 10^{-6} \cdot x^3 \pm 2,46 \cdot 10^{-7}) \quad (7)$
Oligofructose	$y = 1,0929 \pm 4,01 \cdot 10^{-2} - (1,14 \cdot 10^{-2} \cdot x \pm 3,46 \cdot 10^{-3}) + (3,513 \cdot 10^{-4} \cdot x^2 \pm 7,61 \cdot 10^{-5}) - (3,4 \cdot 10^{-6} \cdot x^3 \pm 4,776 \cdot 10^{-7}) \quad (8)$
Isomaltulose	$y = \frac{(1,029 \pm 9,72 \cdot 10^{-2}) \cdot (8,1879972 \cdot 10^7 \pm 8,28 \cdot 10^{-3}) - (9,368 \cdot x^{3,346} \pm 1,788 \cdot 10^{-4})}{(8,19 \cdot 10^7 + x^{3,346} \pm 1,091 \cdot 10^{-6})} \quad (9)$

Based on these studies of organoleptic characteristics of model samples of syrup, taking into account the available data on the coefficients of sweetness, consumption rates, the following model of fructose syrup is proposed: isomaltulose: lactulose = 49,75/49,75/0,5.

Monosaccharide fructose, which is part of the developed osmotically active composition, is not absorbed by insulin-dependent tissues, this process takes a relatively long time, which causes particularly useful properties of fructose [11-13]. Metabolism is fast and occurs mainly in the liver, but also in the intestinal walls and kidneys.

Isomaltulose during the digestion process is metabolized in the intestinal mucosa by the enzyme complex saharase - isomaltase [14]. The main difference between the metabolism of sucrose and isomaltulose is that the hydrolysis of isomaltulose is much slower than the hydrolysis of sucrose, which indicates the possibility of reducing the glycemic and insulin response in healthy people and patients with type II diabetes (insulin-dependent) in the use of this carbohydrate [11,13,15]. Glycemic index (GI) of isomaltulose - 37 (in comparison, fructose - 19). The glycemic index is used to assess the effects of food after consumption on blood sugar by comparing the body's response to the product with the body's response to pure glucose (glucose GI is 100). Isomaltulose, as well as fructose, has a hypoacidogenic effect in relation to dental plaque, i.e. it is non-cariogenic [11,14,16].

Lactulose is now recognized as a classical bifidus factor [17]. This prebiotic is not split in the upper part of the gastrointestinal tract and passes through the large intestine, where bifidobacteria are used as a source of energy and carbohydrate.

Taking lactulose does not cause an increase in blood glucose, so it can be used in the diet for diabetics [11,17].

It is very important that lactulose, unlike many other prebiotics, is not an alien element for dairy products, and embodies the therapeutic and preventive value of the nature of dairy products. For lactulose is not difficult to overcome all the natural protective barriers of the body and as part of any product to reach the habitat of normoflora. It stimulates quantitative growth of own microflora, therefore, there is no problem of survival [18].

The most important property of lactulose is its functional stability, that is, its ability to maintain all its healing properties in the widest range of media and technological regimes. And it opens almost unlimited

possibilities of lactulose use in the food industry in the production of functional foods [17]. The use of lactulose in the food industry is expanding, including in the production of confectionery, beverages, food for dietary and diabetic nutrition, dietary SUPPLEMENTS as a low-calorie sweetener with functional properties. However, the main application of lactulose as a food prebiotic component is the production of functional dairy products [19-22].

For further use of the obtained results in the development of the technology, the studies of the formation of the Aw index in full-scale models-analogues of yogurt from camel milk with a different mass fraction of the developed composition.

Dry whole camel milk was used for preparation of fermented milk beverage. The production process involved the restoration of milk powder, fat normalization, homogenization at (12±2) MPa, pasteurization at (85±2)°C for 5-10 minutes, cooling to the fermentation temperature (40±2)°C and the introduction of a production symbiotic ferment VNIMI STBP (*Streptococcus salivarius* subsp. *termophilus* and *Lactobacillus delbrueckii* subsp. *Bulgaricus*) in an amount of 10% by weight of milk. The end of the fermentation process was determined by the formation of a clot characteristic consistency, as well as by the acidity, the value of which should be pH 4.7±0.05. Then the finished product was poured and cooled in the refrigerator to (4±2)°C, where for 4-6 hours it was further maturation. The experimental data are presented in table 3.

Table 3 - Formation of a Aw in the models-analogues of the product

Indicator Variant	M. D. FR milk, %	M. D. fat, %	M. D. syrup, %	Aw
1	14,4	3,9	3,0	0,994
2			5,0	0,991
3			7,5	0,987
4			10,0	0,985
5			12,5	0,980

The organoleptic assessment of models-analogs of the product is carried out – Table 4.

Table 4 - Organoleptic evaluation of analog models of concentrated product

The name of the indicator	A variant of the formulation				
	1	2	3	4	5
Taste and smell	Weakly sweet, without foreign tastes and smells	Weakly sweet, without foreign tastes and smells	Sweet, without foreign tastes and smells	Too sweet, without foreign tastes and smells	Too sweet, without foreign tastes and smells
Consistency	Homogeneous, viscous	Homogeneous, viscous	Homogeneous, viscous	Homogeneous, too viscous	Homogeneous, too viscous
Color	White with a faint cream tint	White with a faint cream tint	White with a faint cream tint	White with a cream tint	White with a strong cream tint
Points according to the method of VNIMI	8	9	10	8	7

In parallel, a similar scheme developed a technology of low-lactose beverage, which was characterized in that the pasteurized and chilled milk was introduced 0,02-0,03% β-galactosidase (activity 5200 u/g) to its mass, after which the mixture was kept for 2.5-3.0 hours for lactose hydrolysis. Other processes are similar to the basic technology. As studies have shown, the low-lactose drink was characterized by a relatively large decrease in Aw, slightly more pronounced sweetness and intensity of the cream shade.

Thus, the osmotically active composition with pronounced probiotics properties. With its use, the technology of yogurt from camel milk, including low-lactose, has been developed. It was found that the

optimal level of syrup is about 5-7.5% by weight of the product. The analysis of the produced yogurt and low-lactose yogurt showed their high organoleptic characteristics. The developed technology suggests the possibility of its implementation in the dairy industry, producing dairy products.

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### СҮТҚЫШҚЫЛДЫ СУСЫНДАРДАР ТЕХНОЛОГИЯСЫ ҮШІН БИОЛОГИЯЛЫҚ БЕЛСЕНДІ КОМПОЗИЦИЯНЫҢ ОСМОСТЫҚ ҚЫЗМЕТІН ЕНГІЗУ ҚАҒИДАТТАРЫ

**Аннотация.** Қазіргі уақытта йогурт әлемдегі ең танымал сүтқышқылды өнім болып саналады. Сүттегі майсыздандырылған заттардың жоғары құрамы, болгар таяқшасы мен термофилді стрептококк дақылдары, дайын өнімде сақтау уақытының соңында дейін болатын сүтқышқылды бактериялардың 1 г өнімде  $10^7$  кем емес КТБ құрауы өнімді бірегей танымал жасайды. Қазақстанның географиялық, әлеуметтік-мәдени факторларын, сондай-ақ түйе сүтін тұтынудың ғасырлық тарихын ескере отырып, түйе сүті негізінде алынатын йогурттың өнеркәсіптік технологияларын ғылыми дәлелдеу және дамыту мәселесі өзекті болып табылады. Жұмыста пребиотикалық қасиеттері бар тәттілендіргіш заттардың осмостық белсенді композицияның дамуының нәтижелері келтірілген. Оны қолдана отырып түйе сүтінен йогурт технологиясы, соның ішінде төменгі лактозалы йогурт әзірленді. Шырынның оңтайлы қосылатын мөлшері өнімнің салмағы бойынша шамамен 5% құрайтыны анықталды. Өндірілген йогуртке және төменгі лактозалы йогурттарға жүргізілген талдаулар олардың жоғары органолептикалық сипаттамаларын көрсетті. Жасалған технология оны сүтқышқылды өнімдер өндіретін сүт кәсіпорындарында іске асыру мүмкіндігін ұсынады.

**Түйін сөздер:** түйе сүті, сүтқышқылды сусын, ашытқы, пребиотик, фруктоза, изомальтулоза, лактулоза.

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### ПРИНЦИПЫ РАЗРАБОТКИ ОСМОТИЧЕСКИ ДЕЯТЕЛЬНЫХ БИОЛОГИЧЕСКИ АКТИВНЫХ КОМПОЗИЦИЙ ДЛЯ ТЕХНОЛОГИЙ КИСЛОМОЛОЧНЫХ НАПИТКОВ

**Аннотация.** В настоящее время йогурт по праву считается самым популярным кисломолочным продуктом в мире. Высокое содержание обезжиренных веществ молока, культуры - болгарской палочки и термофильного стрептококка, содержание которых в готовом продукте на конец срока составляет не менее  $10^7$  КОЕ в 1 г продукта, создают уникальный узнаваемый профиль продукта. Учитывая специфику Казахстана, в частности, географические, социально-культурные факторы, а также многовековую историю потребления верблюжьего молока, актуализируется проблема научного обоснования и разработки промышленных технологий йогурта на его основе. В работе представлены результаты разработки подслащивающей осмотически деятельной композиции с выраженными пребиотическими свойствами. С ее применением разработана технология йогурта из верблюжьего молока, в том числе низколактозного. Установлено, что оптимальный уровень внесения сиропа составляет порядка 5% к массе продукта. Анализ произведенного йогурта и низколактозного йогурта показал их высокие органолептические показатели. Разработанная технология предполагает возможность ее внедрения на предприятиях молочной отрасли, производящих кисломолочную продукцию.

**Ключевые слова:** верблюжье молоко, кисломолочный напиток, закваска, пребиотик, фруктоза, изомальтулоза, лактулоза.

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## **MODEL OF LIQUID BOILING IN THE ACTUAL POROUS STRUCTURE AT THE NEAR-CRITICAL AREA WITH FURTHER TRANSFER TO THE LIMIT STATE OF COATING**

**Abstract:** modelling of capillary porous coatings and analogy of their processes could help reveal a mechanism of heat transfer during evaporation of liquids, and determine zones for occurrence and development of fatigue fractures in the activation centers of vapour nucleus, research the natural deposits (saline deposits, scales) and artificial porous coatings on metal barriers (bases) up to the limit state of materials. Coatings were made of the poor conductive mineral medium (quartz, granite, teschenite) with low porosity (3÷30%). Heat was supplied from flame of the rocket burner and electric current. Stability of heat transfer is ensured by excessive cooler at the joint action of capillary and mass forces. Solution of the thermoelastic problem has led to connection between the heat flows that destroy heat stress and fracture energy and time of the heat supply, as well as size of the pulled coating particles. The areas for relaxation, micro and macro destructive processes were determined, which point out the causes for occurrence and development of fatigue fractures of the heat-and-power equipment at stress concentrator along with erosion processes and relation between the limit state of compression and tension and unit. The conducted research refers to the transition operational modes of boiler turbine equipment, as well as formation of the capillary porous cooling system.

**Key words:** porous coatings, cooling system, heat exchange.

The burners development [1-3] refers to research of the porous cooling system for the rocket burners [4-9]. At heat influence upon the mineral poor heat conductive porous coating by burner, after a certain time a part of coating gets heated at some certain temperature, and the initial temperature remains at the other parts. Therefore, inside the porous coating a temperature gradient arises, which results in uneven extension. The surrounding non-heated layers do resist such extension. As a result, heat stresses occur both in the heated part, and in the surrounding non-heated part including base. These stresses could reach destructive values. In works [2,3] there are solutions for heat stress for idealized processes. The normal compressive stress played the dominant role in destructive process. Destruction of the porous coating takes place as a result of loss of stability in thin layer adjacent to free surface. Thus the stressed condition of upper layer was reviewed, its thickness depends on the heat emission factor and coating structure and base (metal steam generating surface).

In the irradiated coating a density of vacancies rises vigorously that quickly joint in cavities since the intensity of the vacancy joining process is proportional to quadrat of their density. If cavities of vacancies could transmit into dislocations, then the irradiated coating have plastic properties and is not destructed under influence of burner. All metals are like that. Some mineral rocks such as tuff, marble and limestone have this property.

If dislocations are missing in coating, then the growing cavities of vacancies have stresses focused on their edges and lead to destruction. Meanwhile, yet heat stresses in coating do not reach a limit of plastic flow. The brittle heat destruction occurs.

For cooling of heat exchange surfaces of power units up to the critical heat flows (~106 W/m<sup>2</sup>) as based on reference there are apparent imaginary contradictions in forming a process of heat exchange in porous structures when it is discussed which medium was beside the wall such as liquid, steam or steam-water mixture. In our works it is specified that all models do not contradict each other, and describe different modes of boiling [4-9].

Based on the experimental and theoretic research, the dynamic models of heat exchange enhancement are formed at boiling on porous surface. The developed surfaces contain the interrelated internal cavities in form of rectangular channels and small pores that join channels with volume of liquid.

Relation of latent heat flow ( $\frac{\pi}{6} \bar{D}^3 \rho_{\text{ж}} \bar{n} \bar{f}$ ) towards heat flow for the developed surface could have been (2...5) times more than for a single surface at specific heat flow up to  $1 \times 10^4$  W/m<sup>2</sup>. At large heat flows this relation is reduced. Deviation of some data from the designed data reached 300%. The following symbols are specified in formula as:  $\bar{D}$  – average departure diameter of bubbles in porous structure;  $r$  – specific heat of steam generation;  $\rho_{\text{ж}}$  – steam density;  $\bar{n}$  – average density of nucleation core;  $\bar{f}$  – average frequency of vapour bubble generation.

We develop a physical model of transfer of specific heat flow  $q$  through the steam generating surface (wall or base), which is covered by capillary porous structure (Fig.1).

Heat-and-mass transfer processes in porous coating are carried out with excessive liquid  $\tilde{m} = m_{\text{ж}}/m_{\text{п}}$  because of the pressure potential action that is created by capillary and mass forces  $\Delta P_{\text{кап+г}}$ .

The studied heat and hydraulic (internal) properties of boiling [5,6] help reveal a mechanism, describe a physical picture of the heat-and-mass transfer process in the researched mesh porous structures [4,7], working in field of gravity forces, and obtain calculation equations in order to determine the discharged heat flow [3,7,9].

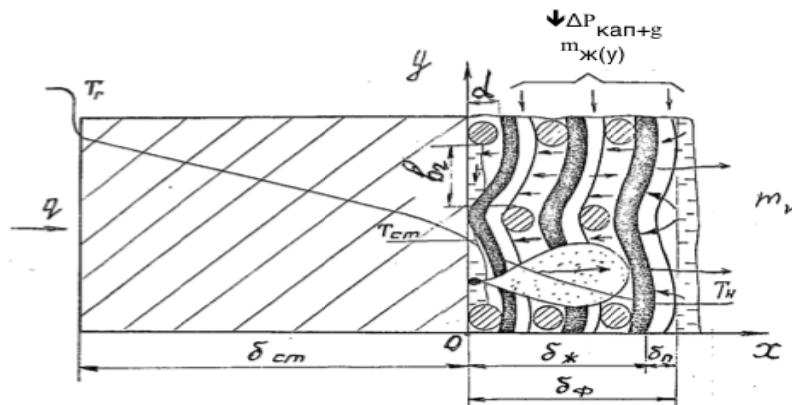


Fig.1 - Physical model of process for the heat and mass transfer in the actual porous structure of coatings that work with excessive liquid: straight lines – movement of liquid; wave lines – movement of steam:  $q$  – specific heat flow, W/m<sup>2</sup>;  $T_r, T_{ср}, T_{ж}$  – temperature of gas, wall (base) and saturation, 0C;  $\delta_{ср}, \delta_{ж}, \delta_{п}, \delta_{ф}$  – thickness of wall, liquid, steam, wick, m;  $m_{ж}(y), m_{п}$  – rate of liquid and steam, kg/f;  $\Delta P_{\text{кап+г}}$  – acting capillary and mass pressure, H/m<sup>2</sup>;  $d$  – size of grain, m;  $BF$  – width of the porous material cell, m

In the researched cooling system at minor heat flows the heat transfer is carried out due to the conductive heat exchange. The higher its value the larger is efficiency of heat conductivity of structure soaked in liquid, and heat conductivity of body. The liquid flows in a smooth manner, and there are no vapor bubbles on the liquid surface and related disturbance processes. Liquid is intensively evaporated from capillarity at minor excess of heat agent and the more excessive liquid grows the more evaporation begins from surface of falling films [7].

At some heat flow the lower parameter  $\tilde{m} = m_{\text{ж}}/m_{\text{п}}$ , leads to disturbance of the smooth wave flow of the liquid film, and occurrence of separate vapor bubbles. The permanently acting generation centres are considered some active structure cells. The beginning of liquid boiling  $\Delta T_{\text{н.з}}$  depends on many mode and constructive parameters and is determined by proper equation for this process  $\Delta T_{\text{н.з}}$ , which corresponds to heat flow  $q_{\text{н.з}}$ . The reduced rate of cooling liquid  $m_{\text{ж}}(y)$  or either increase of heat flow  $q$  lead to a vigorous growth of steam generation centres  $\bar{n}$ .

Intensity of each centre operation at the initial mode of boiling is different, some areas of the heated surface are slightly touched by rising centres. In case of increased rate of the circulated heat agent  $m_{\text{ж}}(y)$  time of ‘life’ of some vapor bubbles gets extended, and part of active pores stop their operations, the extensive breaks between birth of bubbles take place, up to exclusion of such centre from the actively generating centre. The increased excess of liquid  $\tilde{m}$  leads the other active generation centres to slowness and unviability.

Zone of the transition section is not so large towards the developed bubble boiling due to the high rate of growth of active steam generation centres  $\bar{n}$ . Further growth of heat load  $q$  leads to a stable operation of great number of active centres of bubble generation, their even distribution on all steam generating surface. However, on some critical condition a boiling crisis and surface overburning occur. Therefore, carrying out analogy in processes of deliberate destruction of fragile materials and boiling crisis would allow to make modelling and reveal a mechanism of such processes.

Some tests were performed in order to reveal a mechanism of destruction using methods of photoelasticity and holography [1].

Assessment of the stressed condition of models in similar time periods was performed with the help of photographic recording of isochromes and calculation of line sequence  $n$  at different points of the assessed directions.

Solution of the thermoelastic problem could help determine the limit state of medium for porous coating and metal steam generating surface [2,3,9].

Under heat destruction of poorly heat conductive low porous coatings and metal wall (base) it is required to detect the impact of specific heat flow value  $q$  and time of its impact  $\tau$  for forming destructive stresses  $\sigma$ , grain size composition of husks (size of pulled particles), and for metal is a depth of permeability of temperature perturbation  $\delta$ .

At rising value  $q$  during a very short time  $\tau$  the dynamic effects become quite significant, compression stress  $\sigma$  reach big values, often they exceed the limit of material strength to compression a few times. Thus it is required to take into account these stresses in mechanism of the material heat destruction. It is required to determine which type of stress  $\sigma_i$  reach earlier its limit values.

Let's review a plate  $2h$  thick. The permanent specific heat flow  $q$  is being supplied to surface  $z=+h$  starting from time  $\tau = 0$ . The lower surface  $z=-h$  and side edges of plate are heat insulated.

Heat conduction equation with boundary and initial conditions is written in form of:

$$d_{ct} \frac{\partial^2 T}{\partial z^2} = \frac{\partial T}{\partial \tau}, T = 0 \tau < 0;$$

$$\lambda_{ct} \frac{\partial T}{\partial z} = q, \quad z = +h; \lambda_{ct} \frac{\partial T}{\partial z} = 0, z = -h,$$

Where  $d_{ct}, \lambda_{ct}$ —rates of temperature conductivity and heat conductivity of wall (base) [10].

Temperature distribution as per thickness depends on heat physical properties of material, value of heat flow and time of supply [2,3].

Having known the temperature distribution in plate it is possible to calculate heat stresses of compression and extension, arising at certain time  $\tau$  at a different depth from surface  $\delta_i(h=zi)$  at value of heat flow  $q$ , since plate with variable temperature as per thickness is located in flat stressful condition [2].

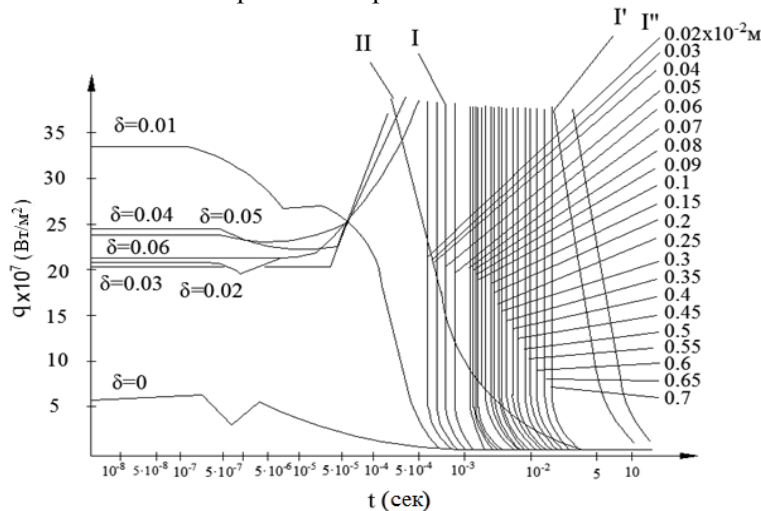


Fig.2 - Dependency of heat flows  $q_i$ , that cause compression stress III of the quartz coating due to the action time  $\tau$  for different thickness  $\delta$  of pulled particles: I – tension stress sufficient for destruction; II, II1 – copper and stainless steel,  $h = 0,1 \times 10^{-3}$  m; II – surface burning-off. Curves III, II1 for copper and steel almost match curve I in area  $\tau = (0,01 \dots 0,1)$  s



Setting the limit values of compression stress  $\sigma_{np.c\kappa}$  and tension  $\sigma_{np.pact}$  for coating and metal, we obtain a functional dependency of heat flow  $q$  required for destruction, from time of supply  $\tau$  and depth of permeability  $\delta$ . Besides, equaling temperature on the plate surface to the melting temperature  $T_{пл}$  of coating and metal, we find values of specific heat flows required for melting the coating layer for various time of its action  $q_1$ , i.e. in each case we have functional dependencies of heat flow upon its rock and metal surface [3].

In case of quartz plate (coating) heat flows  $q_i$  are calculated for extensive time interval -  $10^{-8} \dots 10^3$  s. The low limit of this interval ( $10^{-8}$  s.) is a time of relaxation. As shown at Fig.2, for time intervals  $10^{-8} \dots 10^3$  correlation for value  $q_1$  and  $q_2$  lose a physical sense. Since heat destruction is a macroprocess, we accept it for time  $5 \times 10^{-3} \dots 10^3$  s.

On condition of coating destruction by compression only we obtain a series of curves, each of them correspond to a certain thickness of pulled particles that for teschenite is  $0,25 \dots 0,3 \times 10^{-2}$  m, which is confirmed by trial obtained as a result of high-speed filming and photography by camcorder CKC-IM.

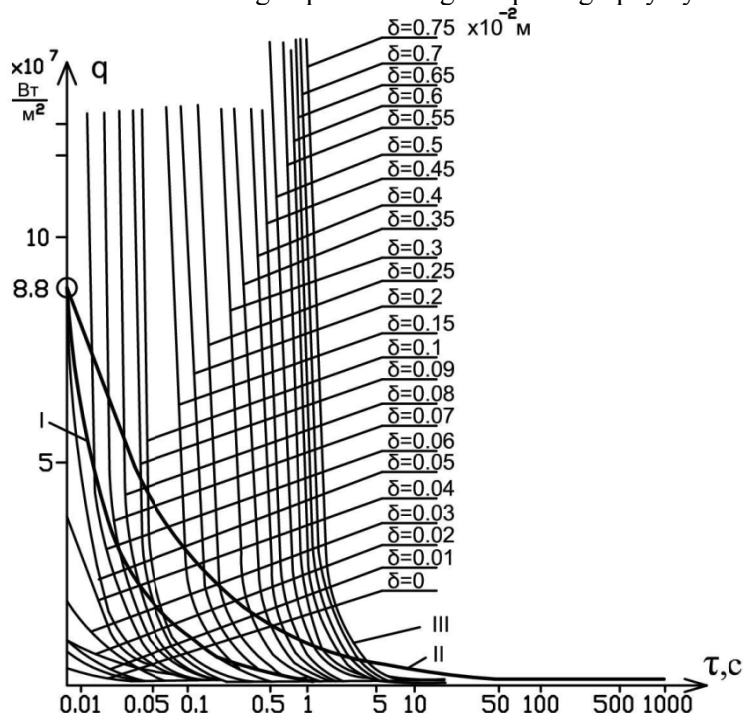


Fig.3 - Dependency of heat flows  $q_i$ , that cause compression stress III of the quartz coating due to the action time  $\tau$  for different thickness  $\delta$  of pulled particles: I – tension stress sufficient for destruction; II – surface burning-off; curves III – copper,  $\delta = 0,1 \times 10^{-3}$  and III1 – stainless steel,  $\delta = 0,1 \times 10^{-3}$  m, almost match curve I in area  $(0,01 \dots 0,1)$  s

Sections of compression curves that determine pulling of particles with thickness  $\delta > 0,3 \times 10^{-2}$  m for big values  $q$  and small values  $\tau$ , are screened by melting curve II, and in case of small heat flows and significant time intervals by tension curve I. The melting curve of the quartz coating is much higher than the teschenite coating that substantiates its stable fragile destruction (see Fig.2,3).

Causes of destruction of the boiler turbine parts depend on prehistory of the fracture origin in the stress concentrator (relaxation zone) (see Fig.2). Countdown should be from time of the rise of bubble nucleation (time interval from  $10^{-8}$  s to  $10^{-3}$  s). Energy of spontaneous appearance of the bubble nucleation is considered a value close to the permanent value (invariant) as per the its growing time. It is allocated for maintaining nucleation with radius  $R_{kp}$  and prevents its collapse ( $q$  could reach up to  $10^8$  W/m<sup>2</sup>). Within this time interval a thermodynamic equilibrium is set for further transition from microprocess (micro particles and clusters with radius  $(10^{-7} \div 10^{-8})$  m (nanoparticles) of separate (single) individual bubbles to processes described by behavior of great number of bubbles, i.e with integral characteristics  $(\bar{q}, \bar{\alpha}, \bar{\Delta T}, \bar{\Delta P}, \bar{w})$ , where  $\bar{\alpha}$ ,  $\bar{\Delta T}$ ,  $\bar{\Delta P}$ ,  $\bar{w}$  - average value of the heat transfer rate, temperature and hydro-gas-dynamic pressure and flow speed).

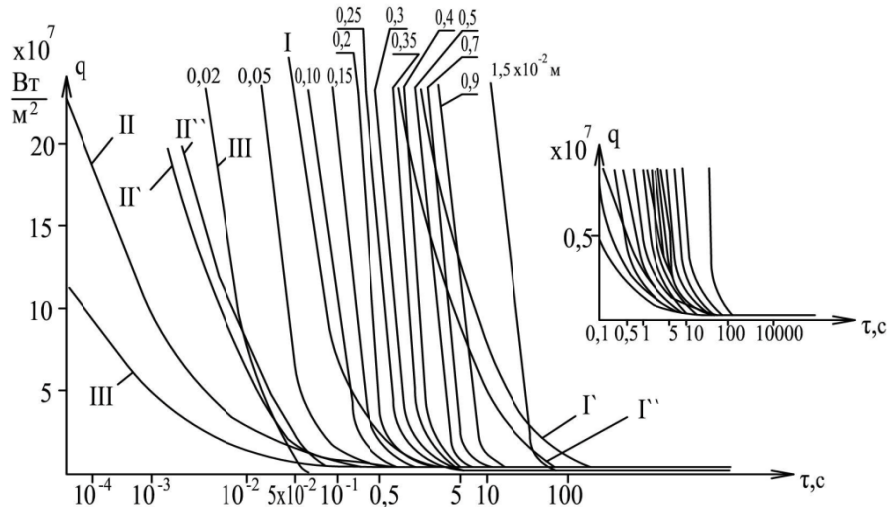


Fig.4 - Dependency of heat flows  $q_i$  that cause compression stress III of the granite coating due to the action time  $\tau$  for different thickness  $\delta$  of pulled particles: I – tension stress sufficient for destruction ( $\Gamma, \Gamma'$  - copper and stainless steel,  $h = 0,1 \times 10^{-3}m$ ); II – surface burning-off ( $II', II''$  - copper and stainless steel,  $h = 0,1 \times 10^{-3}m$ )

Availability of the stress concentrator where the active bubble phase is being born, significantly reduces relation  $\sigma_{пр.ож.} / \sigma_{пр.пакт}$  and this value could be from (1÷2) including power steels. Also another available stress concentrators are to be considered, as well as cycle of loads during launch-stop operational modes of equipment that lead to fatigue fractures (stresses).

For example, for turbine steel a tensile strength is  $\sigma_B \approx (400 \div 1000)$  MPa. Yield strength at operating temperature – (400÷550)0C is reduced to (200÷900) MPa at deformation 0,2%. Long-term tensile strength is reduced to (70÷260) MPa at deformation 10÷20%. Value of the temporary heat stress is reduced substantially to (40÷120) MPa. The main fatigue stress is only up to 0,45 from  $\sigma_B$ .

Therefore, there is a high probability that  $\sigma_{пр.пакт} \approx \sigma_{пр.ож.}$ , and  $\sigma_{пр.пакт}$  can reach up to 10 MPa and become of one order for the porous coatings.

Death processes as well as birth of bubbles also have explosive behavior ( $\tau = 10^{-8} \div 10^{-6}$  s) that result in appearance of cumulative cases, which along with corrosive and electric processes destroy the stress concentrator (active generation centre of the erosion process that turns its size into size of critical fracture. In case of immediate vapor condensation in cavity, its volume immediately disappears and a powerful cumulative effect is formed (cavitation), whereas explosion waves are distributed deep inside parts, fractures are developed where oxygen is supplied.

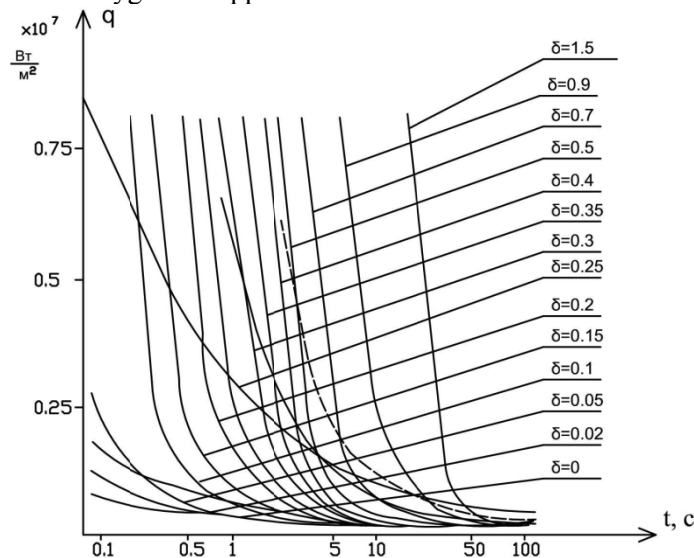


Fig.5 - Dependency  $q_i = f(\tau)$  shown on Fig.5 in range of  $q = (0,25 \dots 0,75) \times 10^7$  W/m<sup>2</sup>

When bubble or drop is born, value  $\alpha$  is up to  $1 \times 10^5$  W/m<sup>2</sup>K at steam temperature (500÷565)0C value  $\Delta T$  reaches to 5000C, and  $q$  acting in the centre of bubble (zone of ‘dry’ spot) up to  $5 \times 10^7$  W/m<sup>2</sup>. Taking into account that the individual vapor bubble generates  $q$  10 times more than its integral value [3,4], then total  $q$  is  $5 \times 10^8$  W/m<sup>2</sup>, as shown at figures  $q=q(\tau, \delta)$ . The deeper permeability of heat wave  $\delta$  (or pulled particle from porous coating), the more time is required for destruction of parts (as per  $q$  see Fig.2-6).

Interrelation of compression and tension stresses is introduced as diagrams of stresses inside plate (coating) for different time intervals from the beginning of the reviewed process. At small values  $\tau$  of 10-2 s, there are only compression stresses. Starting from  $\tau = 10^{-1}$  s, in some area  $\Delta(h-z_i)$  compression stress transfers to tension stress, whereas for different time intervals they are located at different depth from the plate surface.

Destruction of surface and metal under influence of compression forces at times occurs prior to tension forces. Intervals of heat flow within limits when destruction takes place are as follows: for quartz coatings –  $q_{max} = 7 \times 10^7$  W/m<sup>2</sup>,  $q_{min} = 8 \times 10^4$  W/m<sup>2</sup>, for granite coating –  $q_{max} = 1 \times 10^7$  W/m<sup>2</sup>,  $q_{min} = 21 \times 10^4$  W/m<sup>2</sup>, for metal (base) -  $q_{max} = 2 \times 10^6$  W/m<sup>2</sup> (boiling crisis in porous system);  $q_{min} = 1 \times 10^4$  W/m<sup>2</sup> (without cooling).

With increase of  $q$  in the heated layer, and thus with reduced heating time  $\tau$ , the role of compression stress is growing. Despite high resistivity to compression, destruction from the compressive heat stresses happens immediately in more favorable conditions and in small volumes.

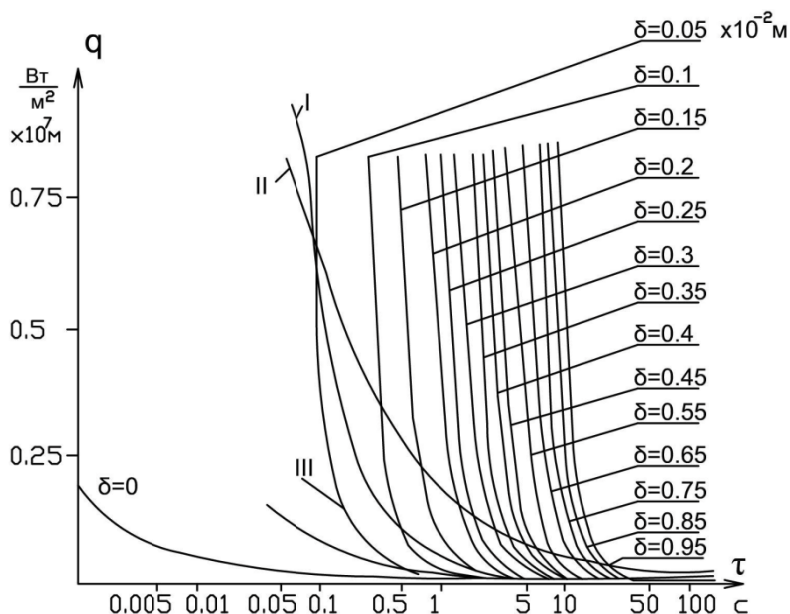


Fig.6 - Dependency of heat flows  $q_i$ , that cause compression stress of tescenite coating depending on time of action  $\tau$  for different thickness  $\delta_i$  of pulled particles: I – tension stress sufficient for destruction; II – surface burning-off; III – destructive heat stresses of compression. Curves II' and II'' for copper and stainless steel almost match curve I in interval  $\tau = (0,1 \dots 1)$  s; metal thickness  $\delta_{II} = h = 0,1 \times 10^{-3}$  m

As shown at Fig. (2-6) there are curves for steam generating surfaces of heat when changing the boiling mode the film boiling is established and the temperature on surface up to value  $T_{IIIS}$  abruptly increased.

Calculation of specific energy  $Q$  of the quartz, granite and tescenite coatings in terms of thickness  $\delta$  of pulled particles demonstrate that curves have some distinctive minimums.

For quartz coating the minimum destruction power capacity equals  $Q \approx 0,5 \times 10^3$  Joule/m<sup>3</sup>, for  $\tau = (0,1 \div 1)$  s,  $\delta_i = (0,1 \div 0,25) \times 10^{-2}$  m.

For granite coating:  $Q \approx 2,5 \times 10^9$  Joule/m<sup>3</sup>, for  $\tau = (0,1 \div 5)$  s,  $\delta_i = (0,1 \div 0,3) \times 10^{-2}$  m. For  $q \approx 0,1 \times 10^7$  W/m<sup>2</sup> and  $\delta = (0,2 \div 1,5) \times 10^{-2}$  m,  $Q = 2,5 \times 10^9$  Joule/m<sup>3</sup>

For tescenite coating:  $Q \approx 0,5 \times 10^9$  Joule/m<sup>3</sup>, for  $\tau = (0,1 \div 5)$  s,  $\delta_i = (0,1 \div 0,4) \times 10^{-2}$  m, whereas relation of the limit normal compression and tension stresses was changed from 20 to 30. The available

micro fractures in the coating monolith reduce its strength for compression around fracture and that the compression strength could be two times bigger than the tension strength.

Curves  $Q=f(q)$  with their minimums with growth  $\delta_i$  are reduced  $q$ , and for heat destruction of fragile coatings a smaller power capacity  $Q$  is required.

Therefore, there is a high risk of probable limit heat stresses at the launching and stopping of boiler-turbine equipment of power plants. These stresses occur first of all at locations of concentrators, which are the birth centers of the active vapor phase or centers of forming condensate drops. Capillary porous structure could be both of natural origin (saline deposits, scales), and of artificial origin with good and poor heat conductive materials in the wide porosity limits from 3% to 90% (permeability). The structures may play a modelling role, and act as highly intensive and enhanced cooling system. For example, the teschenite porous coatings serve as the modelling material that have 5 times higher rate of line extension, and have 10 times smaller of heat supply rate and approximately identical temperature of melting in comparison with power steels. They are the most viscous with porosity up to 30% (see Fig.6)

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## IMPROVING THE REPRODUCTIVE ABILITY OF THE DAIRY CATTLE

**Abstract.** Based on the gynecological monitoring of 341 cows (268 heads of Simmental breed and 73 heads of Red Steppe breed) of the herd of Bagration 2 farm, performed using rectal medical examination and ultrasound diagnostics, it was found that 42 heads, or 12.3%, were with hypo-ovaria, 14 heads, or 4.1% - with a cyst, 37 heads, or 10.8%, - with inflammation of the uterine lining (endometritis). It has been established that among gynecological diseases, in the Simmental breed, hypo-ovaria (78.6%) and cyst (57.1%) are more common, and in the Red Steppe breed - endometritis (51.4%) and ovarian cyst (42.9%). The number of animals with characteristic signs of hypofunction was only 42 heads, which accounted for 12.3% of the total herd, of which, when distributed by age groups, it was found that 32 heads, or 76.2%, of the third calving and older, 6 heads, or 14.3%, - of the second calving, the remaining 4 heads, or 9.5% - of the first calving, i.e. with age, the number of sick cows naturally increases.

In the context of breeds, the same age dynamics was noted: with ovarian dysfunction, there are 28 cows of the 3rd calving and older in the Simmental breed or 84.9%, and 4 cows or 44.5% - in the Red Steppe breed. As for cows of the 2nd calving - 4 heads or 12.1%, of the Simmental breed, and 3 heads or 33.3% - of the Red Steppe breed. For the first calving cows, respectively, 1 head or 3.0%, and 2 heads or 22.2%. On the basis of gynecological monitoring, 2 groups of cows were formed: the first group - the control (without disturbances in the reproductive system), the second group - the experimental group (with hypo-ovaria). A total of 82 heads were divided into two groups, of them in the control group 30 heads or 75.0%, of the Simmental breed, and 10 heads or 25.0% - of the Red Steppe breed. In the experimental group, 33 heads or 78.6%, and 9 heads or 21.4%, respectively. When using the first scheme of hormonal stimulation of the estrus in the experimental group of 22 heads, at the end of the treatment, signs of estrus were found in 20 cows, which averaged 90.9%. When applying the second scheme of treatment, of 20 heads of the experimental group, 17 animals have had estrus or 85.0%. In total, as a result of the hormonal treatment of 42 heads of cows with ovarian dysfunction, the sexual cycle was restored, i.e. estrus was revealed followed by artificial insemination in 37 heads, which was 88.1%. When comparing the results of using two schemes of hormonal stimulation, it was found that the use of CIDR increased the fertility of cows by 5.9%. With the use of ultrasound diagnostics in 28 cows (14 heads were repeatedly bred on the natural cycle), the fertility of insemination was 66.7% since their pregnancy was established. When using the hormonal treatment scheme with Fertagil, from 23 cows with a follicular cyst during ultrasound diagnostics on the 10-12 day before PG F-2  $\alpha$  injection, 7 heads showed no ovarian follicular cysts, which is 36.8%. When using the Surfagon drug and ultrasound diagnostics on the 12-14 day before the PG F-2  $\alpha$  injection, the number of cows without signs of follicular cyst in the ovaries was 10 heads or 43.5% of the amount of hormonally treated. According to the results of artificial insemination of treated animals, the fruitfulness from the first insemination was 42.8% in the group treated with Fertagil and 40% in the group treated with Surfagon.

**Keywords:** reproduction, recovery of impaired reproductive function, artificial insemination, estrus, hormonal treatment, stimulation of superovulation, prevention, treatment.

*Relevance.* Decreasing of cattle fertility is associated with functional disorders of the reproductive organs that are often detected in animals, including impaired ovarian functional activity, manifested in the form of hypo-ovaria or cyst and inflammation of the uterine lining. The problems associated with the reproduction of highly productive dairy cattle, especially a long period of the reproductive cycle, the lactation dominant and the risk of infertility are among the most crucial in dairy cattle breeding [1, 2].

Delayed reproduction cycles, i.e. timely insemination and pregnancy in dairy cows for 1-2 months, lead to a decrease in productivity by an average of 9-18%. One of the main reasons is the impairment of the functional activity of the sex glands in fresh cows. Ovarian dysfunction, i.e. a disorder of the functional activity of the sex glands in cows develops, as a rule, against the background of impaired metabolism and an enhanced manifestation of lactational dominant, accompanied by a disorder of the endocrine mechanisms regulating the functional activity of the sex glands. The active synthesis of the lactogenic complex at the peak of milk production, especially the first 2-4 months after calving, reduces the synthesis of gonadotropic hormones (LH, FSH, and estrogens). According to the results of research of Nezhdanov A.G. [3], the disorder of the functional activity of the sex glands, manifested in the form of hypo-ovaria, is recorded on average in 32.9% of cows, of which 36.1% in first-calf cows and 20% each in second and third calving cows

Along with this, a parallel of the common pathologies in most livestock farms is inflammation of the uterine lining in the postpartum period. The clinical form of the disease affects every third cow, and in highly productive herds the disease is diagnosed in 70-80% of animals. Subclinical endometritis is recorded in 70% of infertile cows. Culling and slaughter of infertile animals due to endometritis reach 50% of the diseased animals [4].

Postpartum endometritis contributes to one of the most serious problems of dairy cattle breeding - infertility of cows, causing significant economic damage resulting from losses due to lack of milk, undersupply of offspring, premature culling of highly productive cows and non-production costs for keeping, feeding, examination and treatment of sick animals. According to the duration and characteristics of the course, there are acute, subacute and chronic inflammatory processes with a corresponding duration of infertility. Related reasons in the occurrence of postpartum endometritis include violation of maintenance conditions, feeding, exploitation, and reduction of the immunobiological status of animals [5].

Studies carried out on Black-and-motley cows showed that rate of fertilization by the first insemination in the "Mir" breeding farm was 77.5% with a conception rate of 1.3, in the Nadezhda breeding farm - 65.0% and 1.5., in the General Skobelev pedigree farm - 63.3% and 1.7, respectively. Thanks to a scientifically ground choice of insemination time, the fertilization rate of cows significantly increased (by 22.1%), the percentage of overlap and semen consumption per fertilization was reduced from 3.4 to 1.5 doses [6].

According to the research results of some authors [7], when imported in 2010-2013 the Holstein breed of the black-and-motley color from Germany to Zolotaya Niva CJSC of the Safonovsky district of the Smolensk region, 0.8% of heifers dropped out during transportation and quarantine. During the year, 191 heads of heifers were dropped out in the complex, or 16.1% of calved animals. Diseases of the reproductive organs and the mammary gland (24.6%), disorders of the muscle-skeleton and distal extremities (22.0%), diseases of the digestive system (7.8%), respiration, and the cardiovascular system (25.5%) and other diseases (20.1%) were the main reasons of the dropout. In 2013, the first lactation was completed by 1242 first-heifers with an average yield of 7288 kg of milk with a fat content of 3.87% and protein of 3.30%. Live weight of animals was 515 kg.

Concerning the inflammatory processes of the uterine lining as the most problematic and widespread pathology in any farm, in this case, there are many methods and ways of treating and restoring the uterus function, both with high and low performance. In the majority, which is based on intrauterine injections of antimicrobials or intramuscular injections of antibiotics. As practice shows, in some cases, inflammatory processes of the uterine lining, despite the labor-intensive therapeutic measures, acquire a chronic form (up to 5%) that complicates the recovery processes and ultimately leads to infertility of animals. In connection with the study, a comparative assessment of methods for restoring sexual cyclicity, improving the fertility of cows with dysfunctional state of the ovaries and restoring the function of the uterine lining is a current area of agricultural science and production. [8, 9].

Studies show that the reproductive function of cows is most affected by maintenance conditions, exercise and the level of feeding. Against the background of hypodynamia in the reproductive apparatus, which develops most often in the stall period, with a predominance of a tie-up or crowded animal housing, the pronounced forms of disorders develop, manifested by ectasia of the vascular system, especially the microvascular bed and the venous section. As a result, edema occurs in the cortical zone of the ovary, and in the vascular zone this leads to stasis and egg atresia occurs in the follicles. In the uterus, changes occur in the epithelium of the mucous membrane and its glandular apparatus, leading to the formation of erosions. In eroded areas of the mucous membrane, the inflammation develops. Therefore, with climatic sterility in cows, ovarian cycles are observed in the form of hypo-ovaria and inability of the uterine lining to perceive the fetus due to their inflammation [10].

The wide occurrence of hypo-ovaria is mainly associated with the technology of keeping animals against the background of an imbalance in the diet of feeding and the disparity between the level of feeding and the output. At the same time, the frequency of hypo-ovaria is significantly higher in animals with low fatness compared to the fair condition, which is an indicator of a shortage of energy consumed along with food. At the same time, the content of concentrated feed from the total amount of dry matter of the diet by more than 45% (in highly productive herds) also leads to ovarian disorders in the form of luteal and follicular cysts, which also adversely affects the effectiveness of insemination. Given the different levels of productivity of cows in the production herd, the manifestation of ovarian dysfunction in the form of hypo-ovaria or cysts in a certain number of animals is the irreversible process. In this regard, the rational use of options for the restoration of reproductive functions, based on the exogenous administration of hormonal drugs to stimulate the growth and development of follicles and the restoration of sexual cycles of cows [11].

Before hormonal treatment, animals are examined rectally to determine the size and shape of the ovaries, the presence and severity of the corpus luteum. The luteal phase of the cycle corresponds to the optimal time for injection of drugs. Prostaglandin is administered intramuscularly in the doses indicated in the application instructions. As a rule, animals are bulling 48-72 hours after drug injection. Non-hunting animals are re-treated 10-11 days after the first injection. Double injection of the drug (in any phase of the sexual cycle) with a 10-day interval is effectively used on a large population, as this drives up the number of animals that show signs of estrus by up to 90%, and reduces the labor intensity of operating personnel. The use of this scheme is applicable only for animals with monthly full sexual cycles, i.e. for healthy cows without violations of sexual cycles or for animals with persistent corpus luteum, as well as for cows with a corpus luteum cyst (luteal cyst) [12].

Currently, the natural possibilities of cows to reproduce themselves are not used intensively. Not infrequently there are no veterinary specialists in business entities that dealt with the elimination of violations of the reproductive function of cows. As a result, a high percentage of barrenness, infertility of cows and the shortfall in the planned calf. Therefore, it will be necessary to engage in the prevention and treatment of cows for obstetric and gynecological diseases. At the same time, methods and techniques for improving the reproductive function, treatment regimens, organizing and conducting the preventive measures need to be advanced. In this regard, it is planned to work on enhancing the methods and techniques that increase the reproductive qualities of cows and heifers in basic farms [15].

Currently, the development and introduction of innovative technologies is a sunrise industry in all areas of production, including the reproduction of highly productive breeding cattle. In the light of these tasks, it is urgent to conduct research on the causes of obstetric-gynecological diseases and the working out of methods for their prevention and treatment in highly productive pedigree cattle of the Republic of Kazakhstan.

**The aim of the research.** Formation of experimental groups of the Simmental and the Red Steppe cows for rectal medical examination based on monitoring of dairy cattle herd in order to identify the causes of reproductive disorders and inflammatory diseases and analysis of the average semen consumption for 1 productive insemination of healthy and sick animals.

**Research methods.** The object of the research was the breeding stock of dairy cattle of the Simmental and Red Steppe breeds of the farm "Bagration 2" of the Ulan district, East-Kazakhstan region, with a population of 341 heads.



Monitoring of dairy cattle was performed by gynecological clinical examination of the breeding stock and using the IscanIS P RS PC ultrasound scanner (Poland). Based on gynecological monitoring, 2 groups of cows were formed: able to reproduce and with gynecological diseases.

The significant part in the modern technology of reproduction of cattle is hormonal stimulation. Before hormonal treatment, animals are examined rectally to determine the size and shape of the ovaries, the presence and severity of the corpus luteum. The luteal phase of the cycle corresponds to the optimal time for injection of drugs. Prostaglandin is administered intramuscularly in the doses indicated in the application instructions. As a rule, animals are bulling 48-72 hours after injection of the drug. Non-hunting animals are re-treated 10-11 days after the first PG F-2  $\alpha$  injection. Double injection of the drug (in any phase of the sexual cycle) with a 10-day interval is effectively used on a large population, as this drives up the number of animals that show signs of estrus by up to 90%, and reduces the labor intensity of operating personnel. The use of this scheme is applicable only for animals with monthly full sexual cycles, i.e. for healthy cows without violations of sexual cycles or for animals with persistent corpus luteum, as well as for cows with a corpus luteum cyst (luteal cyst). For hormonal stimulation of estrus, 2 progesterone treatment schemes were used (Scheme I - using CIDR, Scheme II - using 2.5% progesterone solution).

Normalization of the physiological processes of the genitals of experimental cows was established on the basis of ultrasound diagnostics (accumulation of pathological exudate and proliferative changes in endometrial tissues), the character of estrus during sexual hunting, and fertility during the insemination. Prevention of obstetric and gynecological diseases is based on the intrauterine administration of "Iodopen", "Utrakur" antimicrobial foam-forming tablets three times with an interval of 24 hours, as well as the injection of oxytocin and the PG F-2  $\alpha$  group drugs and intrauterine administration of oxytetracycline 200 during the retention of placenta.

Studies were conducted according to the scheme (Figure 1).

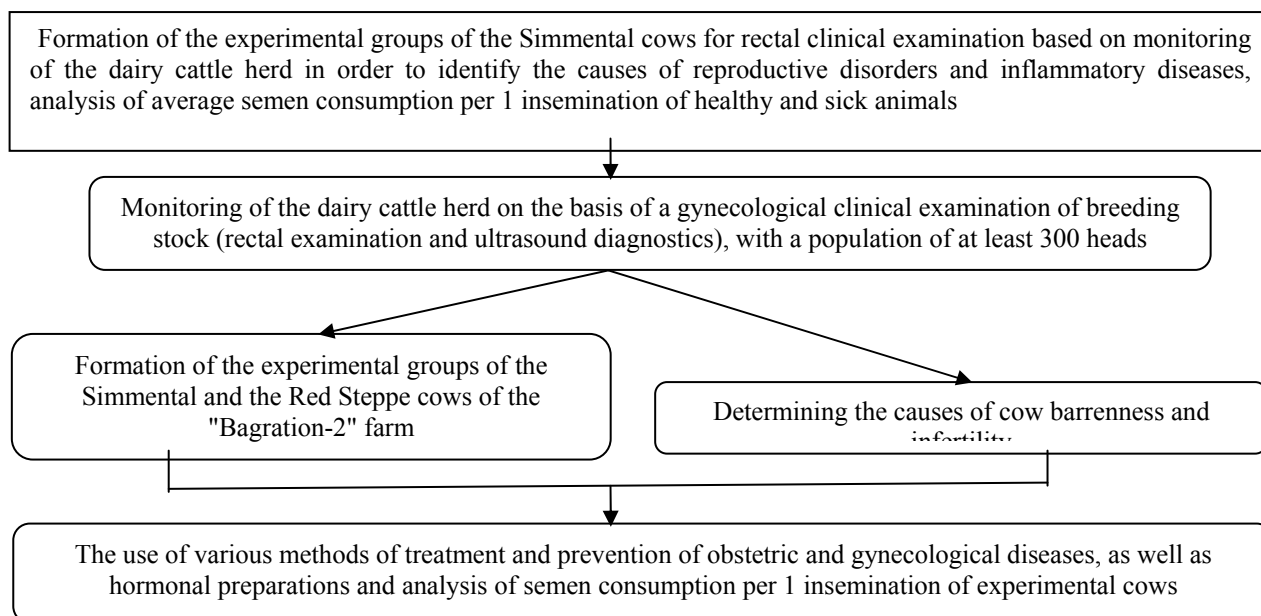


Figure 1 - Scheme of research practice

The obtained material was processed by the method of variation statistics proposed by V.F. Lakin [16].

**Research results.** Annual production of calves from high-yielding cows is impossible without the use of hormonal and other auxiliary drugs. The widespread classical scheme of hormonal stimulation of estrus in cattle involves the injection of preparations of the prostaglandin F<sup>2</sup>- $\alpha$  group: Oestrophan, Cloprostenol, Estrumate, Dinolytic, etc. The demonstration of estrus can be expected in cases when by the time of processing of these drugs in the ovaries of animals there is an active corpus luteum, or, besides, an inactive small corpus luteum [17].

The property of prostaglandin drugs is based on the resorption of the corpus luteum (luteolysis), secreting the hormone progesterone, which inhibits the subsequent start of the sexual cycle. Before hormonal treatment, animals are examined rectally to determine the size and shape of the ovaries, the presence and severity of the corpus luteum. [18].

The luteal phase of the cycle corresponds to the optimal time for injection of drugs. Prostaglandin is administered intramuscularly in the doses indicated in the application instructions. As a rule, animals are bulling 48-72 hours after drug injection. Non-hunting animals are re-treated 10-11 days after the first injection. Double injection of the drug (in any phase of the sexual cycle) with a 10-day interval is effectively used on a large population, as this drives up the number of animals that show signs of estrus by up to 90%, and reduces the labor intensity of operating personnel. The use of this scheme is applicable only for animals with monthly full sexual cycles, i.e. for healthy cows without violations of sexual cycles or for animals with persistent corpus luteum, as well as for cows with a corpus luteum cyst (luteal cyst) [19].

For high-yielding cows with anovulatory sexual cycle, hormonal stimulation of the estrus according to the Ovsynch and Pre-synch program is widespread throughout the world. The fertility rate from the first insemination averages 20%. This scheme is used mainly for cows with no signs of estrus for more than 2 months after calving. The essence of this program is that by increasing the dose of the injection, the releasing hormone to ovulate the follicle and to form a functioning corpus luteum. On the 7-9 day, by injecting the F<sup>2</sup>-  $\alpha$  prostaglandin drug, to suppress the level of the hormone progesterone in the blood and, under the influence of these hormones, the cow enters the estrus and the repeated administration of the releasing hormone stimulates the ovulation of the preovulatory follicle [20]. According to this program, cows can be inseminated without signs of sexual hunting and estrus. In some cases, the cycle is repeated until the signs of sexual activity appear. This cycle for cows can be repeated up to 4 times or more.

A comparatively more effective scheme for hormonal stimulation of the estrus is progestogen treatment. This program is the most effective for cows of the dairy productivity, in which the percentage of animals with anovulatory sexual cycle due to hypo-ovarian is very high in the herd [21].

Accepting the stimulation and synchronizing of estrus with progesterone, a female sex hormone that regulates the estrus cycle, make possible for the appearance of estrus in groups of breeding animals in the same time period [22].

On the basis of this hormone, the various schemes for estrus stimulation and synchronization have been proposed. High doses of progesterone block the release of gonadotropic hormones from the pituitary and cause the retention in hunting, estrus, and ovulation. The termination of progesterone injections and the subsequent introduction of HPMS (hormonal pregnant mare serum) causes the synchronization of hunting, estrus, and ovulation. The progestogen treatment program comprises the intravaginal administration of a progesterone-containing drug (pessary) on the basis of a sponge or a plastic with a simultaneous intramuscular injection of estradiol. On the 8th day, the progesterone sponge is removed, after which HPMS is administered one time (at a dose of 500 I.U.) and estradiol is injected on the 9th day. With this treatment scheme, the signs of sexual activity on the 10th day occur in 80% of the cows. For the sake of exception of late ovulation of follicles, synthetic analogues of gonadotropin releasing hormone are used to promote the release of luteinizing hormone for follicle ovulation at a fixed time [23, 24, 25].

At this stage of the development of dairy cattle husbandry, based on the formation of commercial-dairy farms with highly productive dairy cattle on the base of imported animals or the use of foreign gene pool, the issue of temporary infertility of animals after calving is topical. One of the most common causes occupying a significant place among all diseases of the ovaries is hypo-ovaria. When hypofunction of the ovaries occurs, there is a weakening of the ovaries activity, which is accompanied by arrhythmia or inferiority of sexual cycles, as well as a prolonged absence after calving. Under the hypo-ovaria lies the condition in which the growth, development, maturation and ovulation of follicles are impaired. There is a sharp decrease in the level of vitamin A in the blood, collagenization of the tissues of the sex glands and weakening of the redox reactions in the endometrium, accompanied by low uterus contractility.

As a result, sexual cyclicity is violated or completely stopped, unfavorable conditions are created in the genitals for the promotion of sperm cells, which in most cases is manifested by the infertility of animals. At rectal examination there is a rigidity of the uterus, the ovarian consistency is homogeneous, the shape is flattened or rounded, the surface is smooth, reduced in volume, the corpus luteum or follicles

are not detected, of the elastic-dense consistency. The concentration of follicle-stimulating hormone in animals with hypofunctional state is 2.5 times lower, and the content of luteinizing hormone is 1.1 lower compared with clinically healthy cows that indicates a decrease in the activity of the hypothalamic-pituitary system and leads to a violation of folliculogenesis.

Based on the gynecological monitoring of 341 cows (268 heads of Simmental breed and 73 heads of Red Steppe breed) of the herd of Bagration 2 farm, performed using rectal examination and ultrasound diagnostics, it was found that 42 heads, or 12.3%, were with hypo-ovaria, 14 heads, or 4.1% - with an ovarian cyst, 37 heads, or 10.8%, - with inflammation of the uterine lining (endometritis) (Table 1).

Table 1 - Results of gynecological monitoring of cows by breed

Breed	Hypo-ovaria		Ovarian cyst		Inflammation of the uterine lining	
	n	%	n	%	n	%
	Simmental	33	78.6	8	57.1	18
Red Steppe	9	21.4	6	42.9	19	51.4
Total	42	100	14	100	37	100

It has been established that among gynecological diseases, in the Simmental breed, hypo-ovaria (78.6%) and cyst (57.1%) are more common, and in the Red Steppe breed - endometritis (51.4%) and ovarian cyst (42.9%).

The causes of obstetric and gynecological diseases are caused, first of all, by the weakening of the overall resistance of the organism and metabolic disorders. The main factor predisposing to the disease is the imbalance of the diet in terms of acid-base equivalents, minerals, and vitamins, as well as keeping conditions and level of productivity of cows. The metabolic disorder, in turn, causes endocrine insufficiency and hormonal disorders, which leads to a breakdown of the neurohumoral regulation of sexual functions and favorable conditions are created for the development of pathogenic microflora in the genitals, which brings the inflammatory processes.

Gynecological diseases were analyzed in connection with age and breed variability (table 2).

It was established that the number of animals with specific signs of hypofunction was only 42 heads, which accounted for 12.3% of the total herd, of which, when distributed by age groups, it was found that 32 heads or 76.2% were of the third calving and older, 6 heads or 14.3% - of the second, the remaining 4 heads or 9.5% - of the first calving, i.e. with age, the number of sick cows naturally increases.

In the context of breeds, the same age dynamics was noted: with ovarian dysfunction, there are 28 cows of the 3rd calving and older in the Simmental breed or 84.9%, and 4 cows or 44.5% - in the Red Steppe breed. As for cows of the 2nd calving - 4 heads or 12.1%, of the Simmental breed, and 3 heads or 33.3% - of the Red Steppe breed. For the first calving cows, respectively, 1 head or 3.0%, and 2 heads or 22.2%.

Table 2 - Distribution of cows with functional disorders of the ovaries in the form of their hypofunctions in the context of lactation

Age in lactations	Total		Simmental		Red Steppe	
	n	%	n	%	n	%
of the first calving	4	9.5	1	3.0	2	22.2
of the second calving	6	14.3	4	12.1	3	33.3
of the third calving and older	32	76.2	28	84.9	4	44.5
Total	42	100	33	100	9	100

Hormonal stimulation of estrus dramatically changes the hormonal status in comparison with the natural cycle. Various pituitary gonadotropins have similar ways of application and are close in effectiveness, but they are also affected by breeding and productive properties.

On the basis of gynecological monitoring, 2 groups of cows were formed: the first group - the control (without disturbances in the reproductive system), the second group - the experimental group (with hypo-ovaria). They are presented in Table 3.

Table 3 - Characteristics of the formed groups

Groups	Total, heads	Including by breeds	
		Simmental	Red Steppe
Control	40	30	10
Experimental	42	33	9
Total	82	63	19

A total of 82 heads were divided into two groups, of them in the control group 30 heads or 75.0%, of the Simmental breed, and 10 heads or 25.0% - of the Red Steppe breed. In the experimental group, 33 heads or 78.6%, and 9 heads or 21.4%, respectively.

On the basis of the formation of the experimental group, it was taken the most common gynecological disease in Bagration 2 Farm (78.6%), such as hypo-ovaria, or their hypoplasia, which causes frigidity of the breeding stock.

It was established that when using the first scheme of hormonal stimulation of the estrus in the experimental group of 22 heads, at the end of the treatment, signs of estrus were found in 20 cows, which averaged 90.9%. When applying the second scheme of treatment, of 20 heads of the experimental group, 17 animals have had estrus or 85.0%. In total, as a result of the hormonal treatment of 42 heads of cows with ovarian dysfunction, the sexual cycle was restored, i.e. estrus was revealed followed by artificial insemination in 37 heads, which was 88.1%. When comparing the results of using two schemes of hormonal stimulation, it was found that the use of CIDR increased the fertility of cows by 5.9%.

With the use of ultrasound diagnostics in 28 cows (14 heads were repeatedly bred on the natural cycle), the fertility of insemination was 66.7% since their pregnancy was established.

This pathology (hypo-ovaria) is characterized by an increase in the volume of the ovary with a gently fluctuating spherical formation with a diameter of more than 2 cm or at ultrasound diagnostics by the presence of a liquid formation on 2/3 of the ovary surface. In this connection, the classical scheme of treatment of follicular cysts using the drugs of the Fertagil and Surfagon group in a comparative aspect was applied for therapeutic measures. According to the results of therapeutic measures, the following results were obtained (table 5).

Table 4 - Comparative results of hormonal stimulation of estrus of cows with hypo-ovaria

Group	Total, heads	Scheme I			Scheme II		
		Total, heads	With estrus, heads		Total, heads	With estrus, heads	
		n	n	%	n	n	%
Experimental	42	22	20	90.9	20	17	85.0
Control	40	20	20	100	20	20	100
Total	82	42	40	95.2	40	37	92.5

Table 5 - Comparative results of the use of releasing hormones in ovarian follicular cyst in cows

Drug	Total, heads	treated by 1st course		Fruitfully inseminated from the treated, heads	
		n	%	n	%
Fertagil	19	7	36.8	3	42.8
Surfagon	23	10	43.5	4	40.0
Total	42	17	40.5	7	41.4

When using the hormonal treatment scheme with Fertagil, from 23 cows with a follicular cyst at ultrasound diagnostics on the 10-12 day before PG F-2  $\alpha$  injection, 7 heads showed no ovarian follicular cysts, which is 36.8%. When using the Surfagon drug and ultrasound diagnostics on the 12-14 day before the PG F-2  $\alpha$  injection, the number of cows without signs of follicular cyst in the ovaries was 10 heads or 43.5% of the amount of hormonally treated. According to the results of artificial insemination of treated animals, the fruitfulness from the first insemination was 42.8% in the group treated with Fertagil and 40% in the group treated with Surfagon.

When conducting the research, it was also found that at ultrasound diagnostics on the 4-5 day after PG F-2  $\alpha$  treatment, an average of 70-75% of animals showed no cysts, whereas at repeated ultrasound diagnostics, before the introduction of PG F-2, follicular cysts in the ovaries were found on average in 70% of animals, which is explained by the re-formation of new cysts in the period of 10-12 days. Also in animals with follicular cysts, spontaneous sexual cycle and estrus occur every 10–13 days, with the majority of such animals showing follicular cysts in both ovaries, and of the total number of animals, on average 90% of animals showed cysts on the left ovary.

Thus, according to the research results in restoring functional disorders of the ovaries, it has been established that the use of the progestogen hormone stimulation scheme for cows with ovarian dysfunction is the most effective in restoring the sexual cycle. The obtained results indicate that the introduction and widespread use of this hormonal stimulation scheme in the reproduction of highly productive dairy cattle will allow to use to the maximum of the reproductive potential of highly productive breeding stock, including first-calf cows, which will reduce the service period. Taking into account the low impact of the used treatment schemes of follicular cysts, further research in this direction is required to increase the effectiveness of the schemes after the first course to 60 percent and more.

The main part in obstetric and gynecological interventions is the prevention of ill health, which is based on the universal early obstetric and gynecological treatment with foam-forming drugs for dry therapy of the fresh cows uterine, especially since the functional disorders of the ovaries in some cases are due to inflammation of the uterine lining (endometritis).

Conducting systematic preventive measures would reduce the number of animals with inflammatory processes in the uterus, and the current gynecological clinical examination could identify deficiencies in feeding and maintenance, correctly follow the schedule for the duration of the dry period and the timely elimination of detected deficiencies. This work to establish the effectiveness of preventive measures for postpartum endometritis in fresh cows will be continued.

**Summary and evaluation of the research results.** Based on the gynecological monitoring of 341 cows (268 heads of Simmental breed and 73 heads of Red Steppe breed) of the herd of Bagration 2 farm of the East Kazakhstan region, performed using rectal medical examination and ultrasound diagnostics, it was found that 42 heads or 12.3% were with hypo-ovaria, 14 heads or 4.1% - with an ovarian cyst, 37 heads or 10.8% - with inflammation of the uterine lining (endometritis). It was noted that among gynecological diseases, hypofunction (78.6%) and ovarian cyst (57.1%) are more common for the Simmental breed, and for the Red Steppe - endometritis (51.4%) and ovarian cyst (42.9%).

The reasons for obstetric and gynecological diseases are caused, first of all, by the weakening of the overall resistance of the body and metabolic disorders. The main factor predisposing to the disease is the imbalance of the diet in terms of acid-base equivalents, minerals, and vitamins, as well as keeping conditions and the level of productivity of cows [26].

The metabolic disorder, in turn, causes endocrine insufficiency and hormonal disorders, which leads to a breakdown of the neurohumoral regulation of sexual functions and favorable conditions are created for the development of pathogenic microflora in the genitals, which brings the inflammatory processes.

The number of animals with specific signs of hypofunction was only 42 heads, which accounted for 12.3% of the total herd, of which, when distributed by age groups, it was found that 32 heads or 76.2% were of the third calving and older, 6 heads or 14.3% - of the second, the remaining 4 heads or 9.5% - of the first calving, i.e. with age, the number of sick cows naturally increases.

In the context of breeds, the same age dynamics was noted: with ovarian dysfunction, there are 28 cows of the 3rd calving and older in the Simmental breed or 84.9%, and 4 cows, or 44.5% - in the Red Steppe breed. As for cows of the 2nd calving - 4 heads or 12.1%, of the Simmental breed, and 3 heads or 33.3% - of the Red Steppe breed. For the first calving cows, respectively, 1 head or 3.0%, and 2 heads or 22.2%.

On the basis of gynecological monitoring, 2 groups of cows were formed: the first group - the control (without disturbances in the reproductive system), the second group - the experimental group (with hypo-ovaria). A total of 82 heads were divided into two groups, of them in the control group 30 heads or 75.0%, of the Simmental breed, and 10 heads or 25.0% - of the Red Steppe breed. In the experimental group, 33 heads or 78.6%, and 9 heads or 21.4%, respectively.

On the basis of the formation of the experimental group, it was taken the most common gynecological disease in Bagration 2 Farm (78.6%), such as hypo-ovaria, or their hypoplasia, which causes frigidity of the breeding stock.

When using the first scheme of hormonal stimulation of the estrus in the experimental group of 22 heads, at the end of the treatment, signs of estrus were found in 20 cows, which averaged 90.9%. When applying the second scheme of treatment, of 20 heads of the experimental group, 17 animals have had estrus or 85.0%. In total, as a result of the hormonal treatment of 42 heads of cows with ovarian dysfunction, the sexual cycle was restored, i.e. estrus was revealed followed by artificial insemination in 37 heads, which was 88.1%. When comparing the results of using two schemes of hormonal stimulation, it was found that the use of CIDR increased the fertility of cows by 5.9%.

With the use of ultrasound diagnostics in 28 cows (14 heads were repeatedly bred on the natural cycle), the fertility of insemination was 66.7% since their pregnancy was established.

At the hormonal treatment scheme with Fertagil, from 23 cows with a follicular cyst at ultrasound diagnostics on the 10-12 day before PG F-2  $\alpha$  injection, 7 heads showed no ovarian follicular cysts, which is 36.8%. When using the Surfagon drug and ultrasound diagnostics on the 12-14 day before the PG F-2  $\alpha$  injection, the number of cows without signs of follicular cyst in the ovaries was 10 heads or 43.5% of the amount of hormonally treated. According to the results of artificial insemination of treated animals, the fruitfulness from the first insemination was 42.8% in the group treated with Fertagil and 40% in the group treated with Surfagon.

When conducting the research, it was also found that at ultrasound diagnostics on the 4-5 day after PG F-2  $\alpha$  treatment, an average of 70-75% of animals showed no cysts, whereas at repeated ultrasound diagnostics, before the introduction of PG F-2, follicular cysts in the ovaries were found on average in 70% of animals, which is explained by the re-formation of new cysts in the period of 10-12 days. Also in animals with follicular cysts, spontaneous sexual cycle and estrus occur every 10-13 days, with the majority of such animals showing follicular cysts in both ovaries, and of the total number of animals, on average 90% of animals showed cysts on the left ovary.

**Conclusions.** According to the results of the research work on the restoration of functional disorders of the ovaries, it has been established that the use of the progestogen hormonal stimulation scheme for cows with ovarian dysfunction is the most effective in restoring the sexual cycle. The results indicate that the introduction and widespread use of this hormonal stimulation scheme in the reproduction of highly productive dairy cattle will allow to use to the maximum of the reproductive potential of the highly productive breeding stock, including first-calf cows, which will reduce the service period. Given the low impact of the used treatment programs of follicular cysts, further research in this direction is required to increase the effectiveness of the schemes to 60 percent or more after the first course.

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## ПОВЫШЕНИЕ ВОСПРОИЗВОДИТЕЛЬНОЙ СПОСОБНОСТИ МОЛОЧНОГО СКОТА

**Аннотация.** На основании гинекологического мониторинга 341 головы коров (268 голов симментальской породы и 73 головы красной степной породы) стада КХ «Багратион 2», проведенного с помощью ректальной диспансеризации и УЗИ-диагностики установлено, что 42 головы, или 12,3%, оказались с гипофункцией яичников, 14 голов, или 4,1%, - с кистой, 37 голов, или 10,8%, - с воспалением слизистой оболочки матки (эндометритом). Установлено, что среди гинекологических заболеваний чаще встречается у симментальской породы гипофункция (78,6%) и киста яичников (57,1%), а у красной степной - эндометриты

(51,4%) и киста яичников (42,9%). Количество животных с характерными признаками гипофункции составило всего 42 головы, что составило 12,3% от общего стада, из них при распределении по возрастным группам установлено, что 32 головы, или 76,2%, третьего отела и старше, 6 голов, или 14,3%, - второго, остальные 4 головы, или 9,5% - первого, т.е. с возрастом закономерно количество больных коров увеличивается.

В разрезе пород отмечена такая же возрастная динамика: с овариальной дисфункцией коров 3 отела и старше симментальской породы - 28 голов, или 84,9%, и 4 головы, или 44,5%, - красной степной. По коровам второго отела 4 головы, или 1,2,1%, симментальской породы, и 3 головы, или 33,3% - красной степной. По первотелкам, соответственно, 1 голова, или 3,0%, и 2 головы, или 22,2%. На основании гинекологического мониторинга были сформированы 2 группы коров: первая - контрольная (без нарушений в воспроизводительной системе), вторая - опытная (с гипофункцией яичников). Сформировано всего 82 головы в двух группах, из них в контрольной группе симментальской породы 30 голов, или 75,0%, и 10 голов, или 25,0% - красной степной. В опытной группе, соответственно, 33 головы, или 78,6%, и 9 голов, или 21,4%. При использовании первой схемы гормональной стимуляции половой охоты в опытной группе из 22 голов по окончании обработки признаки течки обнаружены у 20 голов, что в среднем составил 90,9%. При применении второй схемы половая охота из 20 голов коров опытной группы по окончании гормональной стимуляции выявлена половая охота у 17 голов, или 85,0%. Всего в результате гормональной обработки из 42 голов коров с овариальной дисфункцией половой цикл восстановился, т.е. выявлена половая охота с последующим искусственным осеменением у 37 голов, что составило 88,1%. При сравнении результатов использования двух схем гормональной стимуляции установлено, что применение CIDRa повысило фертильность коров на 5,9%. При использовании УЗИ-диагностики 28 голов (14 голов перегуляло по естественному циклу) плодотворность осеменения составила 66,7 %, так как была установлена их стельность. При использовании схемы гормональной обработки препаратом Фертагил из 23 голов животных с фолликулярной кистой при УЗИ диагностике на 10-12 сутки перед инъекцией PG F-2  $\alpha$  у 7 голов отмечено отсутствие в яичниках фолликулярных кист, что в соотношении составил 36,8%. При использовании препарата Сурфагон и УЗИ диагностике на 12-14 сутки перед инъекцией PG F-2  $\alpha$  количество коров без признаков фолликулярной кисты в яичниках составило 10 голов, или 43,5% от количества гормонально обработанных. По результатам искусственного осеменения пролеченных животных плодотворность от первого осеменения составила по группе обработанных препаратом Фертагил 42,8 % и 40 % по группе обработанных препаратом Сурфагон.

**Ключевые слова:** воспроизводство, восстановление нарушения репродуктивной функции, искусственное осеменение, половая охота, гормональная обработка, стимуляция суперовуляции, профилактика, лечение.

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### СҮТТІ ІРІ ҚАРА МАЛЫНЫҢ ӨСІП КӨБЕЙУІН АРТТЫРУ

**Аннотация.** Бағратион 2 фермасының 341 сиырдың басын Семинтал тұқымы және 73 бас қызыл дала тұқымы гинекологиялық мониторингінің негізінде, ректальды тексеру және ультрадыбыстық диагностикалау әдісімен жасалған, 42 бас (12,3%) гипофункционалды деп табылған аналық безі, 14 басы немесе 4,1% - жатыр мойнының кистасы, 37 басы немесе 10,8% - жатыр мойнының қабынуымен (эндометрит) (1-сурет). Симментал тұқымдас гинекологиялық аурулардың арасында гипофункция (78,6%) және кеуде клизмасы (57,1%) арасында жиі кездеседі, ал Қызыл далада энстрометрі (51,4%) және сүт безі (42,9%) кездеседі.

Гипофункцияның тән белгілері бар жануарлардың саны тек 42 бас болды, бұл жалпы топтың 12,3% -ын құрайды, оның ішінде жас топтары бойынша бөлінген кезде 32 бас, немесе 76,2% -ы, үшінші ұрықтың және одан үлкені, 6 басы немесе 14 , 3% - екінші, қалған 4 басы немесе 9,5% - бірінші, яғни жасына байланысты



науқас сиырлардың саны көбеюде.

Тұқымдықтар бөлімінде бір жастағы серпіліс байқалды: сиырдың уылдырық бұзылуымен семинтал тұқымынан 3 бұзау және одан жоғары - 28 бас, немесе 84,9% және 4 бас немесе 44,5% - қызыл дал. Екінші ұрық сиырда Симментал тұқымының 4 басы немесе 1,2,1%, ал 3 басы немесе 33,3% - қызыл дала. Тұмса сиырлар үшін тиісінше 1 бас, немесе 3,0% және 2 бас немесе 22,2%. Гинекологиялық мониторинг негізінде сиырдың 2 тобы құрылды: бірінші - бақылаушы (репродуктивтік жүйеде бұзылусыз), екіншісі – тәжірибелік (аналық гипофункциясы бар). Екі топта барлығы 82 бас болды, оның ішінде семинтал тұқымының бақылау тобында 30 бас немесе 75,0% және 10 бас, немесе 25,0% - қызыл дал. тәжірибелік топта тиісінше 33 бас, немесе 78,6% және 9 бас немесе 21,4%.

22 бас тәжірибелік топта жыныстық күйін гормоналды ынталандыруының бірінші схемасын қолданған кезде емдеу аяқталғаннан кейін 20 баста австриялық белгілер анықталды, бұл орташа 90,9% құрады. 17 жануарлар жыныстық күйлеуін немесе 85,0% -ды құрады. Жалпы алғанда, гормоналды емдеу нәтижесінде 42 бас сиыр функциясының бұзылуы орын алды, жыныстық цикл қалпына келтірілді. жыныстық күйлеуін анықталды, одан кейін 37 жануарлардың жасанды ұрықтандыруы 88,1% құрады.

Гормоналды ынталандырудың екі схемасын қолданудың нәтижелерін салыстыру кезінде CIDR пайдалану сиырдың бұздығын 5,9% -ға арттырды. 28 бастың ультрадыбыстық диагностикасын қолданумен (табиғи цикл бойынша қайта жүктелген 14 бас), жүктіліктің белгіленуінен бастап ұрықтандырудың құнарлығы 66,7% құрады.

Гармонмен емдеу сызбасын инъекциясына дейін 10-12 күн бұрын ультрадыбыстық диагнозымен фолликулярлы киста бар жануарлардың 23 бас жануарларынан қолданған кезде, 7 бас аналық бездердің фолликулярлық кисталарының болмауын көрсетті, бұл 36,8%. Сурфагон инъекциясына дейін 12-14 күн ішінде препарат сурфагон және ультрадыбыстық диагностиканы қолданғанда, аналық безде фолликулярлық кист белгілері жоқ сиыр саны 10 бас немесе гормондармен өңделген мөлшердің 43,5% құрады.

Жануарларды жасанды ұрықтандыру нәтижелері бойынша бірінші ұрықтандырудан алынған Фертагилмен өңделген топ үшін 42,8%, ал сурфагон мен емделген топ үшін 40% құрады.

**Түйінді сөздер:** репродуктивті функцияны, жасанды ұрықтандыру, жыныстық қатынастарды, гормоналды терапияны, күшейтуді ынталандыру, алдын алуды, емдеуді қайта құру, қалпына келтіру.

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## REDUCTION OF MAGNESIUM ON A BISMUTH SUBSTRATE IN DIMETHYLFORMAMIDE SOLUTION

**Abstract.** A modified anode material was obtained by reducing magnesium on the surface of a bismuth electrode in an anhydrous  $\text{Mg}(\text{ClO}_4)_2$ /dimethylformamide (DMF) system. The structure and composition of the obtained anode material were determined using a scanning electron microscope and X-ray spectral microanalysis.

Analysis of the polarization curves revealed the electrochemical properties and the process of reversibility of the previously unexplored intermetallic compound consisting of Mg- Bi in  $\text{Mg}(\text{ClO}_4)_2$ /DMF system. Cyclic voltammograms showed that the processes in the system are quasi-reversible. It is proved that the process of electronic exchange is carried out by diffusion.

**Keywords:** magnesium-ion battery, bismuth, electrode, anode, dimethylformamide, reduction.

### Introduction

One of the modern scientific and technical research topical issues is the development of affordable, environmentally friendly, cheap types of energy [1]. In recent years, the use of lithium-ion batteries in the electrochemical industry has expanded and developed rapidly. However, the high cost of lithium, rare abundant in the earth's crust and the danger of dendrite formation make the use of lithium-ion batteries ineffective [2-4]. Therefore, magnesium-ion batteries with high energy density are proposed as an alternative to lithium-ion energy sources and studied their electrochemical properties [5-8]. However, the redox potential of the  $\text{Mg}^{2+}/\text{Mg}$  pair is greater than the potential of  $\text{Li}^+/\text{Li}$  pair, by about 1 V. In addition, the volume capacity of magnesium is lower than lithium,  $2061 \text{ mAh}\cdot\text{h}/\text{cm}^3$  [9, 10]. Consequently, magnesium-based batteries lag slightly behind lithium batteries. However, if cathodes with high productivity are used for such current sources, the specific energies can be up to  $100 \text{ W}\cdot\text{h}/\text{kg}$  [7]. It is much more than low-tech secondary batteries. In addition, magnesium as an anode material has many properties: low electrochemical potential, high volumetric specific capacity, large energy/power densities, most abundant in the Earth's crust, cheaper and environmentally friendly.

However, magnesium is corrosively unstable in simple electrolytes. Therefore, the replacement of metallic magnesium with other alternative materials is relevant. It also allows you to work with simple electrolytes. Recently, it was found that some p-elements in a low potential form an electrochemical reverse intermetallic with magnesium [11-13]. Magnesium ions have been found to penetrate and diffuse well into bismuth since it has a rhombohedral crystal structure [14]. Magnesium intercalated into bismuth forming magnesium bismuthide with a theoretical capacity of  $385 \text{ mAh}/\text{g}$  ( $3\text{Mg}^{2+} + 2\text{Bi} + 6\text{e} \rightarrow \text{Mg}_3\text{Bi}_2$ ) [15, 16]. W.Jin and other scientists [14] described the diffusion resistance of magnesium in bismuth. According to them, for one Mg atom in the bismuth, the most stable position is located between two layers of the Bi, where Mg has eight neighboring Bi atoms with Mg-Bi bond lengths of 3.00 and 3.07 Å. The calculated adsorption energy was -1.31 eV for one Mg atom adsorbed in Bi. According to the definition of adsorption energy, negative adsorption energy means a favorable exothermic reaction. The larger the

negative energy values are, the more favorable of the reactions are. Given this, we can conclude that bismuth can be a good adsorbate for magnesium ions. In addition, magnesium ions embedded in the bismuth crystal lattice form a weak bond, which allows quickly diffuse into the crystal lattice and have good current. For this reason, bismuth can be a promising anode material for magnesium-ion batteries.

On this basis, in the present work, bismuth is proposed to use as an anode for magnesium-ion batteries instead of non-corrosive metallic magnesium. Accordingly, was carried out the recovery of magnesium ions on the surface of the bismuth electrode and were investigated possible processes on the metal surface.

### Experimental part

Electrochemical cells in a three-electrode configuration were used for deposition experiments (high-surface area Pt-mesh counter-electrode, Ag/AgCl-reference, and pure bismuth ( $D=0.17 \text{ cm}^2$  Aldrich, 99.9% purity) as working electrodes. Before measurements metal electrode was first mechanically polished with fine emery papers (5-7  $\mu\text{m}$ ) and then wired with ethanol.

Electrolyte and electrochemical cell preparations were carried out in an Ar-filled glove box ( $\text{O}_2$  and  $\text{H}_2\text{O} < 1 \text{ ppm}$ ). For the electrolyte preparation  $\text{Mg}(\text{ClO}_4)_2$  (99.5%) was used as conductive salt. Salt  $\text{Mg}(\text{ClO}_4)_2$  was dried in a vacuum oven at  $1000^\circ \text{C}$  for 12 hours, at  $1600^\circ \text{C}$  for 6 hours, at  $2100^\circ \text{C}$  for 4 hours. Dimethylformamide (DMF, anhydrous, 99.9%) was vacuum dried before use. DMF was annealed at  $1000^\circ \text{C}$  and dried in an inert atmosphere for one week. The precipitate was filtered and twice distilled in a vacuum (at a pressure of 3-5 mm mercury column)

Cyclic voltammetry (CV), chronopotentiometry (CP) measurements were recorded on a potentiostat-galvanostat Autolab PGstat 30 potentiostat (Brinkmann Instruments Co.). The morphology of bismuth electrodes before and after tests was analyzed by Quanta 200i 3D (FEI Company, USA) scanning electron microscope (SEM). The electrodeposited alloys were characterized by X-ray diffraction (XRD) with Cu  $K\alpha$  radiation. Scanning electron microscopy (SEM) images were taken to observe the morphology of the alloy anodes.

### Results and discussion

#### *Reduction of magnesium ions on the surface of bismuth*

The deposition of magnesium to bismuth was performed by chronoamperometry. The calculation of the given potential in the potentiometric mode for the recovery of magnesium ions to a bismuth electrode, we used the Nernst equation, with recalculation to the silver chloride reference electrode:

$$E = E^\circ + \frac{RT}{nF} \ln \frac{C_{\text{Ox}}}{C_{\text{Red}}} = E^\circ + \frac{0.059}{n} \lg \frac{C_{\text{Mg}^{2+}}}{1} = -2,37 - 0,02 = -2,4\text{B} \quad (1)$$

$$E_{\text{Mg}^{2+}/\text{Mg}} = -2,4 - E_{\text{Ag}^+/\text{Ag}}^\circ = -2,4 - 0,212 = -2,6\text{B} \quad (2)$$

The theoretically calculated potential value represents the stationary potential of magnesium relative to the silver chloride electrode for an aqueous medium in the standard case. However, since the experiment is carried out in an anhydrous dimethylformamide medium, the potential activity may vary depending on the nature of the solvent. Therefore, in order to find favorable conditions for the deposition and dissolution of magnesium on the surface of the bismuth electrode were removed cyclic voltammograms in 0.1 mol/l  $\text{Mg}(\text{ClO}_4)_2/\text{DMF}$ . The reduction potential of magnesium ions was determined from the voltammograms. The deposition was carried out for 1 minute and 5 minutes. To remove the chronoamperometric curves were chosen -1.5 V and -2.6 V potentials. These potentials were taken from the calculated data and cyclic voltammograms.

#### *The structure of the formed compounds on the surface of the bismuth electrode*

To show the morphological changes in the surface of bismuth were taken micrographs by using scanning electron microscopy. And also, to confirm the presence of magnesium done an elemental analysis of the surface. Figure 1a shows a micrograph of the surface of pure bismuth. In Figures 1 b, c - the micrographs of the bismuth electrode surfaces after magnesium reduction in different time and at

different potentials. In the cathodic polarization of the electrode, there is a thick layer of non-homogeneous surface formation on the bismuth electrode surface at the microelements shot at the potentials of -1.5V and -2.6V in 5 minutes. In figures 1 (b, c) showed the formations in the form of films.

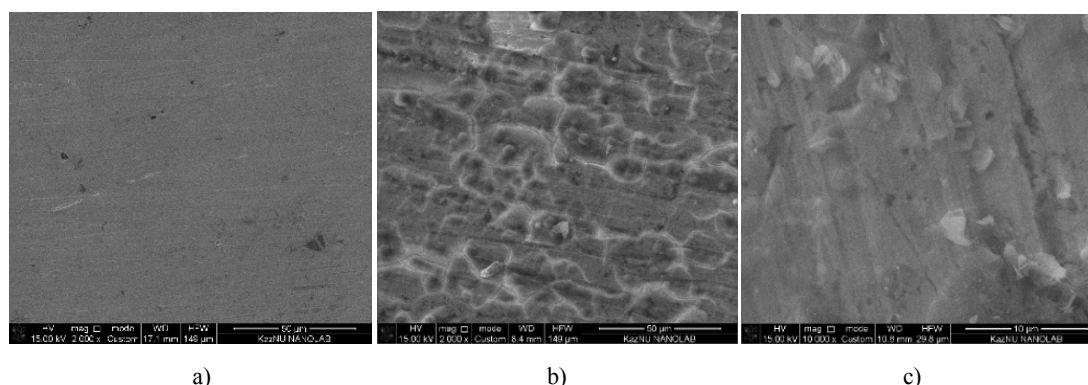


Figure 1 - Micrographs of the surface of the pure bismuth electrode (a) and after the reduction of magnesium from 0.1 mol/l  $Mg(ClO_4)_2/DMF$  solution at a potential of -1.5 V (b) and -2.6 V (c),  $\tau = 5$  minutes

In addition, the results of X-ray spectroscopy show that on the surface of metallic bismuth is contained some amount of magnesium (12.45%) after its deposition (Table 1).

Table 1 - Results of X-ray spectral microanalysis of the bismuth electrode surface after the deposition of magnesium ions from 0.1 mol/l  $Mg(ClO_4)_2/DMF$

Element	Wt, %			
	-1,5 V		-2,6 V	
	1 minute	5 minute	1 minute	5 minute
Bi	77,05	49,84	81,05	65,50
Mg	2,64	12,45	1,63	6,47
O	17,81	34,05	13,98	24,83

According to X-ray microanalysis, the bismuth electrode has the following elements: Mg, O, Bi. According to the results of the analysis, a large amount of film consists of a metallic coating (40-80%). This can be explained by the fact that during the scan caught the substrate under the film. However, the pictures clearly show the presence of the film. In our opinion, the metal substrate can be included in the film. The presence of oxygen in the composition of the film on the surface can be explained by the oxidation of Mg to MgO, as a result of the decomposition of the solvent. The presence of a large amount of magnesium in the composition indicates that it is well penetrated by the bismuth crystal lattice. This has a significant effect on the electrode potential of bismuth. To confirm this, it was taken curves dependence time from the potential of the bismuth electrode before and after the reduction of magnesium (Fig. 2).

The standard electrode potential of bismuth in aqueous media is 0.23 V versus a standard hydrogen electrode. However, given that the study is carried out in an anhydrous dimethylformamide system, the theoretically calculated potential for the silver chloride electrode used should change to 0.018 V. The changing of bismuth electrode potential from a time before magnesium deposition corresponds to the theoretically calculated potential (Fig. 2).

After deposited magnesium ions on the bismuth electrode surface electrode potential moves to the negative value. In the chronopotentiogram, which was taken after the reduction of magnesium ions on the surface of bismuth, began at -2.0 V. That is, the proximity of the standard potential of standard metallic magnesium can be explained by the relatively complete coverage of the surface of the bismuth electrode. As time increases (up to 400 seconds), the potential immediately shifts to a positive value. Magnesium on the surface of bismuth is redissolved and the potential value approaches the potential of pure bismuth. After 400 seconds, the potential value gradually stabilizes and reaches a plateau.

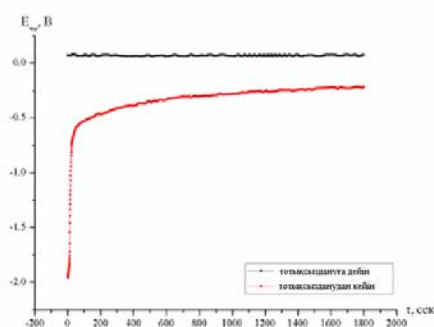


Figure 2 - Dependence of the stationary potential of the bismuth electrode on the time before and after the reduction of magnesium

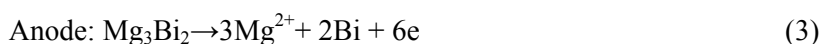
#### *Analysis of cyclic voltammetry curves*

In fig. 5a shows cyclic voltammograms of the bismuth electrode in a 0.1 mol/l  $\text{Mg}(\text{ClO}_4)_2/\text{DMF}$  solution at different scan rates (10-100 mV/s). As can be seen from the curves, magnesium is deposited on the surface of the electrode starting at a potential of -1.2 V. As the scan rate increases, the current value decreases, and the magnesium reduction potential shifts to the negative region. In addition, polarization in the opposite direction shows the oxidation peak of magnesium at a potential of -0.4 V.

According to the classical law of electrochemistry, if the sum of the potential peaks of the forward and reverse directions is  $E_0$ , and the potential difference of these peaks is  $2.2 RT/F$  (56.5 mV), then for this region is used the Nernst equation, that is, the reaction in the system is reversible. However, in our case, the potential difference is 450 mV at 25 ° C. This means the irreversibility of the processes occurring in the system. In addition, cyclic voltammetry curves were taken at different potential scan rates. From voltammograms, it is seen that the potential difference in the direct and inverse peaks increases.

An analysis of the effect of time and potential scan rate on the direction of a cyclic voltammogram showed that the potential values for cathodic and anodic processes shift to a more negative direction as the potential scan rate and time increase. This is due to the irreversibility of the process in the system. However, due to the presence of the anode peak, the process is quasi-reversible.

Analyzing cyclic voltammograms and relying on other studies [15, 16], we can assume that the following electrochemical process will occur in the system:



#### *Effect of various factors on magnesium reduction*

For reversible reactions, the reduction peak potential does not depend on the scan rate. For irreversible electrode reactions, the relationship between the potential of the oxidation peak and the scan rate is expressed by the following equation:

$$E_p = E_{\frac{1}{2}} - \left( \frac{RT}{\alpha n_a F} \right) \left[ 0,780 + \ln \left( \frac{D^{1/2}}{k_s} \right) + \ln \left( \frac{\alpha n_a F v}{RT} \right)^{\frac{1}{2}} \right] =$$

$$E_{\frac{1}{2}} - \frac{RT}{\alpha n_a F} \left[ 0,780 + \ln \left( \frac{D^{1/2}}{k_s} \right) + \ln \left( \frac{\alpha n_a F v}{RT} \right)^{\frac{1}{2}} \right] - \frac{RT}{\alpha n_a F} \ln v^{\frac{1}{2}} \quad (5)$$

Here,  $E_{1/2}$  - half-wave potential,  $n_a$  - the number of electrons,  $D^{1/2}$  - diffusion coefficient,  $\alpha$  - exchange coefficient,  $F$  - Faraday constant (C/mol),  $T$  - absolute temperature (K),  $R$  - gas constant ( $\text{mol}^{-1} \cdot \text{K}^{-1}$ ),  $v$  - scanning rate (V/s).



According to (5) equation, the relationship between  $E_p$  and  $v^{1/2}$  is shown in Fig. 4. This relationship shows a linear relationship.

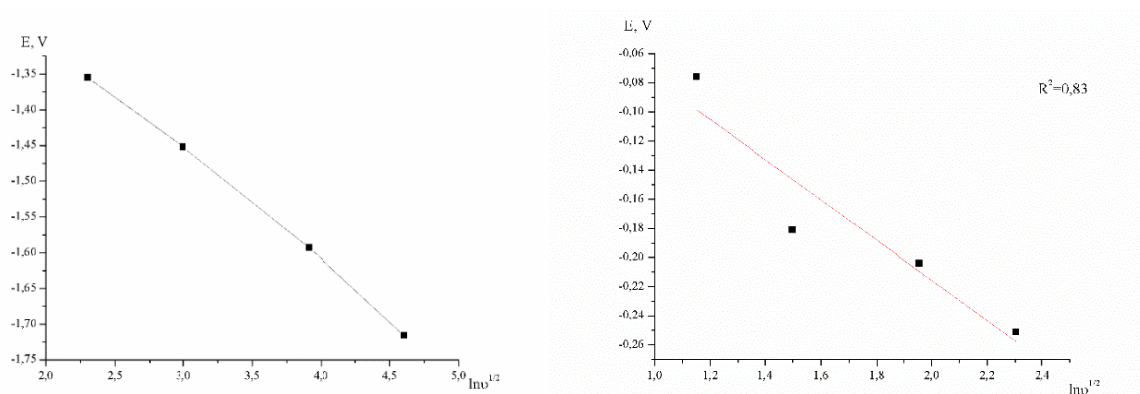


Figure 4 - The dependence of the scan rate on the currents of the anodic and cathodic peaks in 0.1 mol/l  $Mg(ClO_4)_2/DMF$

As shown in fig. 5 for this electrode reaction, the dependence of the peaks of the reduction current ( $I_p$ ) on the square root value of the sweep speed ( $v^{1/2}$ ) is observed a linear dependence. However, the linear dependence does not intersect with the origin point, so it can be predicted that the nature of the process will be quasi-reversible.

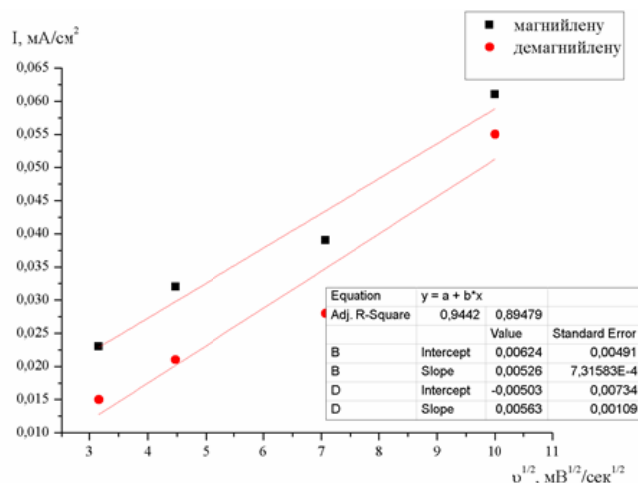


Figure 5 - Dependence of the potential scan rate on the peaks of the anodic and cathodic currents in 0.1M  $Mg(ClO_4)_2/DMF$

This satisfies the Rendles-Shevchyk equation (6) for quasi-reversible processes, which expresses the electrochemical reduction of magnesium as a diffusion process:

$$I_p = 2,69 * 10^5 S n_a C_0 D_0^{1/2} v^{1/2} \quad (6)$$

Here,  $D_0$  - diffusion coefficient ( $cm^2/s$ ),  $n_a$  - number of electrons,  $v$  - scanning speed (V/sec),  $C$  - concentration of solute ( $mol/cm^3$ ),  $S$  - electrode area ( $cm^2$ ).

One of the factors that affect the size of the Mg placed on the bismuth electrode surface is the rate of potential transfer. In fig. 6a shows the reverse direction of the cyclic voltammetric curve, where the current value is 0 at various scan rates. The dependence of the potential value of the post-polarization potential on the potential scan rate is shown in Figure 6b.



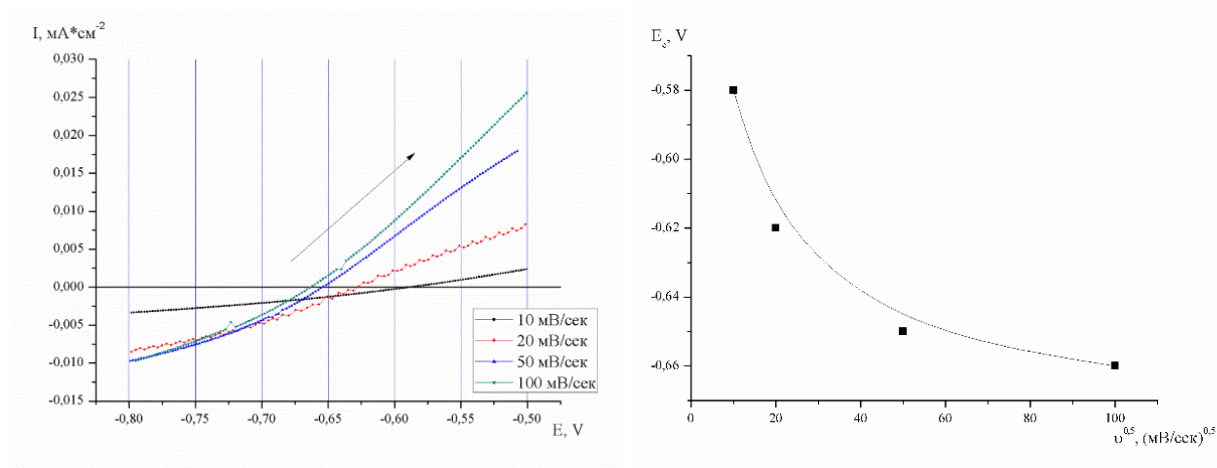


Figure 6 - a) Reverse polarization curves depending on the rate of different potential transfer of electrode of the Bi electrode 0.1M Mg(ClO<sub>4</sub>)<sub>2</sub>/DMFA; b) The dependence of the rate of potential transfer on the potential potential

As the potential scan rate increases, the potential value changes from the negative direction to 50 mV / s, and then its change is not noticeable. As the scanning speed increases, the anode process takes a short time. Therefore, the oxidation reaction of magnesium does not come to an end.

### Conclusion

- The bismuth rhombohedral structure allows magnesium ions to penetrate into its crystal lattice since their diffusion rate is high, Bi was chosen as the anode material for Mg-ion batteries.
- As a result of the deposition of magnesium, the formations of bismuth electrode surfaces was detected by the scanner electron microscope (Quanta 200i 3D), and the composition was determined by energy density X-ray spectroscopy.
- Analysis of cyclic voltammograms showed that the processes in the system are quasi-reversible.
- It is proved that the process of electronic exchange is carried out by diffusion.
- As the potential scan rate increases, the cathode processes proceed quickly and magnesium is not fully reduced.

ӘОК 544.653.3

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### ДИМЕТИЛФОРМАМИД ЕРІТІНДІСІНЕН ВИСМУТ ТӨСЕМЕСІНДЕ МАГНИЙДІҢ ТОТЫҚСЫЗДАНУЫ

**Аннотация.** Сусыз Mg(ClO<sub>4</sub>)<sub>2</sub>/диметилформамид (ДМФА) жүйесінде магнийді висмут электроды бетіне тотықсыздандыру арқылы модифицирленген анодтық материал алынды. Алынған анодтық материалдың құрылысы мен құрамы сканерлеуші электронды микроскоп және рентген-спектрлі микроталдау көмегімен анықталды.

Поляризациялық қисықтарды талдау нәтижесінде, бұрын зерттелмеген Mg(ClO<sub>4</sub>)<sub>2</sub>/ДМФА жүйесіндегі Mg-Bi интерметаллидің электрохимиялық қасиеттері, ондағы үдерістердің қайтымдылығы зерттелді. Циклдік вольтамперограммаларды талдау арқылы жүйеде өтетін үдерістердің квази-қайтымсыз екендігі анықталды. Электрон алмасу үдерісі диффузия арқылы жүзеге асатындығы дәлелденді.

**Түйін сөздер:** магний-ион батареясы, висмут, электрод, анод, диметилформамид, тотықсыздану.

## ВОССТАНОВЛЕНИЕ МАГНИЯ НА ВИСМУТОВОМ ПОДЛОЖКЕ В ДИМЕТИЛФОРМАМИДНОЙ СРЕДЕ

**Аннотация.** Было получено модифицированный анодный материал методом восстановления магния на висмутовый электрод Mg(ClO<sub>4</sub>)<sub>2</sub>/диметилформамид (ДМФА) системе. Структура и состав полученного анодного материала определялись с помощью сканирующего электронного микроскопа и рентгено-спектрального микроанализа. Анализ поляризационных кривых выявил электрохимические свойства интерметаллида Mg-Bi в ранее неизученной системе Mg(ClO<sub>4</sub>)<sub>2</sub>/ДМФА и процесс обратимости. Циклические вольтамперограммы показали, что процессы в системе квазиобратимы. Доказано, что процесс электронного обмена осуществляется путем диффузии.

**Ключевые слова:** магний-ионные батареи, висмут, электрод, анод, диметилформамид, восстановление.

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## **COMPETITIVENESS ESTIMATION OF FRUIT AND VEGETABLE ENTERPRISE COMPANIES OF THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** The article discusses the activities of enterprises associated with the fruit and vegetable industry. The role of this enterprise is great because it is associated with the production, as well as with the manufacturing industry. An assessment was made of threats to key industry players. The most effective method of dealing with substitutes is to build a strong brand: a clear differentiation and additional benefits from the consumption of company goods, the fight against product standardization, technological improvements, the formation of product loyalty.

Competition among existing competitors is reduced to the desire to improve their position in the market by any means in order to conquer the consumer market. Intense competition leads to price competition, increased costs for the promotion of goods, sometimes to improve product quality, increase investment in new developments. All this reduces the profitability of the industry.

This approach includes five competitive forces: the power of consumers, the power of suppliers, the potential of new participants in the industry, the threat of substitute products, and competition in the industry. A table was created for evaluating assessment results for organizations in the industry. Developed proposals for the strategic development of enterprises in the industry.

**Keywords.** Industry, production, fruit and vegetable industry, power of consumers, threat of substitute products, strategy, competition.

**Introduction.** Since fruit and vegetable industry enterprises are production companies on which the food security of the Republic largely depends on, their role is growing constantly. We will analyze the sectoral competition in the industry for the production of fruits and vegetables in Kazakhstan based on the Porter's model. In his model, Porter examines ways of competitiveness of manufacturers in the industry based on certain 5 competitive forces.

**Methodology.** In the process of research, system analysis, expert assessments, general scientific methods were used: analysis, synthesis, comparison.

**Results and discussion.** The following forces were offered by him: power of customers; power of suppliers; potential of new entrants into the industry; threat of substitute products; competition in the industry [1].

Schematic representation of these threats:

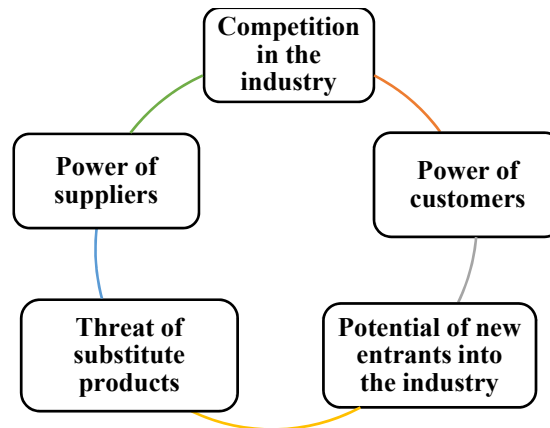


Figure 1 - Competitive forces of the industry

Note - compiled by the author [1]

Competitive analysis of the industry according to Michael Porter helps determine the intensity and degree of competitive forces in the industry, to find a position in which the company will be maximally protected from the influence of competitive forces and will be able to influence them [1].

Michael Porter's golden rule the five competitive forces theory is the following: the weaker the influence of competitive forces is, the more opportunities to obtain high profits in the industry the company has. Conversely, the higher the influence of competitive forces is, the higher the likelihood that no company will be able to provide high profitability from capital investments. And the average profitability of the industry is determined by the most influential competitive forces [2].

Threat of new entrants into the industry. Why new players are considered to be threat? Usually, new players introduce new production facilities, new technologies, new resources to the market, which can be a shock for the industry, change consumer behavior, and set new work standards for existing players [3].

The power of influence of new players depends on the barriers to entry and the speed of influence of existing market players. If the entry barriers to the industry are high and the level of opposition from existing companies in the industry is high, then the impact of new aspirants for profits in the industry will be minimal. Therefore, when working with new players, it is important to properly build output barriers [4].

Porter identifies six main factors affecting the strength of entry barriers in the industry:

Economies of scale. The greater the volume of production is, the lower is the cost of producing 1 unit of production, the more difficult it is for a new player to achieve high profitability when entering the market [5].

Product differentiation and strength of existing brands. The higher the variety of goods and services in the industry is, the more difficult it is for new players to enter the market and occupy a free niche.

Capital requirements. The higher the initial level of investment to enter the industry is, the more difficult it is for new players to enter the industry.

Cost disadvantages independent of size. The higher the level of fixed costs in the industry is, the more difficult it is for new players to profit from sales in the initial period of entry into the industry [6].

Access to distribution channels. The more difficult to reach the target audience in the market is, the lower is the attractiveness of the industry.

Government policy. The higher the restrictions imposed by the state on activities in the industry are, the stricter is the regulated requirements for the product in the industry, the higher is the state participation in the industry, the lower is its attractiveness to new players [7].

Additional threats. There are also additional threats of entry into the industry for new players, these include: the willingness and ability of existing players to lower prices to keep market share; the existing players have additional reserve potential for active counteraction (unactuated sources of funding, additional production capacity, connections to distribution channels, availability of free funds to increase pressure of advertising, etc.), as well as a slowdown in the industry or negative growth rates.

Power of customers. Since buyers are consumers of the finished product and ensure the existence of a market by meeting their needs, they can influence the competitiveness of a company's product on the market. When developing a strategy, a company must select those buyers who are the least influential in the market [8].

Consumers can toughen competition by imposing higher requirements on the quality of the product, on the level of service, and exert pressure on the price level. Higher demands on the finished product force manufacturers to improve the quality of the product by increasing costs (better raw materials, additional service conditions, etc.), and, consequently, reduce their level of profit.

Consumers are concentrated and make purchases on a large scale. In such circumstances, the company will be forced to constantly make concessions to customers to ensure guaranteed income and profits.

Products sold on the market do not possess uniqueness; and the customer can freely switch between them without incurring additional risks.

Customers demonstrate high price sensitivity, and have a high need to lower their costs in the future.

Products purchased in the industry are raw materials for another industry. Therefore, customers will be inclined to reduce purchase costs and look for more favorable offers to reduce the cost of their finished products.

Consumers are not satisfied with the quality of the existing product on the market and have a hidden or explicit need for new conditions and properties [9].

Power of suppliers. Suppliers can influence the competitiveness of a company's product on the market, as they own resources for the production of goods in the industry. The rise in prices for raw materials and the conclusion of transactions on unfavorable conditions for the company leads to an increase in the cost of finished products, an increase in production costs. If it is impossible to increase the retail prices for finished goods at a level comparable to that of raw materials, the industry's profitability from the sale of goods or services decreases.

The appearance of substitute products. Substitute products limit the market potential in terms of price increase. Usually, substitute products have an impact on the establishment of the upper limit of market prices, which in the face of rising costs of production and raw materials reduces the profitability of companies. Until market players can improve product quality and differentiate their goods from substitute goods, the industry will have low profits and limited market growth [10].

The following types of products provide a particular threat to the growth and profit:

- substitute products that can provide the best value for money. such products in the absence of a high level of differentiation will always encourage the consumer to the switch.
- substitutes produced by large players who have high profits in alternative markets that are able to have a less profitable business in the existing market.

The most effective method of dealing with substitutes - building a strong brand: a clear differentiation and additional benefits from the consumption of the company's goods, the fight against product standardization, technological improvements, the formation of product loyalty [11].

The level of intensity of competition is high or increases if the industry has the following conditions:

- a large number of players and their equality in sales.
- low growth (or decline) of the market, which leads to a constant redistribution of the market, seizure market shares from each other.
- low differentiation and standardization of the product in the industry creates for the consumer an infinite number of alternatives, leads to a constant switching of consumers from one player to another, provides a high level of instability of future income and profits.
- products belong to the category of perishable products, which encourages price reductions and does not provide the possibility of freezing commodity balances.
- high barriers to exit from the industry force players with low profitability to exist, create an excess of production capacity in the market. consider these threats to industry leaders [12].

We will consider the thread of substitute products as exemplified by LLP «TsinKaz». (Table 1).

Table 1 - Assessment of substitute products for «TsinKaz» LLP (1.1 Substitute -products)

Evaluation item	Comments	Parameter estimate		
		3	2	1
Substitute –products «quality-price»	able to provide the same quality at lower prices	exist and occupy a high market share	exist, but only entered the market and their share is small	does not exist
				1
TOTAL SCORE		3		
1 points		low threat level from substitute products		
2 points		average threat level from a substitute product		
3 points		high threat level from a substitute product		
Note - compiled by the author on the basis of [2]				

The competition among the existing competitors is reduced to the desire to improve their position in the market by any means, to conquer the market consumers. Intense competition leads to price competition, increased costs for the promotion of goods, sometimes to improve product quality, increased investment in new developments. All this reduces the profitability of the industry [13].

We will analyze the level of competition in the industry.

Table 2 - Assessment of the level of intra-industry competition for «TsinKaz» LLP (Assessment of the level of intra-industry competition)

Evaluation item	Comments	Parameter estimate		
		3	2	1
Number of players	The more players in the market, the higher the level of competition and the risk of losing market share	High level of market saturation	Average level of market saturation (3-10)	A small number of players (1-3)
<a href="#">Market growth rate</a>	The lower the growth rate of the market, the higher the risk of constant market redistribution	Stagnation or decline in the market	Slowing but growing	High
The level of product differentiation on the market	The lower the product differentiation, the higher the standardization of the product - the higher the risk of switching consumers between different market companies	Companies sell standardized goods	The product on the market is standardized by key properties, but differs by additional benefits	Company products are significantly different.
Price increase restriction	The fewer opportunities to raise prices, the higher the risk of losing profits with a constant increase in costs	Fierce price competition in the market, there are no opportunities to raise prices	There is an opportunity to raise prices only in the framework of cost growth	There is always an opportunity to raise prices to cover cost increase and higher profits
TOTAL SCORE		8		
4 points		Low level of intra-industry competition		
5-8 points		Average level of intra-industry competition		
9-12 points		High level of intra-industry competition		
Note - compiled by the author on the basis of [2]				

There are situations in which suppliers get a high level of influence on a company's profit:

- the number of suppliers in the industry is insignificant. extreme case: there is a monopoly or oligopoly on the market;
- the volume of resources, which are produced by suppliers, is limited in volume and in time, does not meet the demand for the market;
- the costs of switching to alternative suppliers are high (which may be due to the uniqueness of the raw materials, or to existing obligations to suppliers);
- the industry is not a priority for suppliers, and the realization of its resources in it does not provide significant profitability and income for the supplier [15].

We will consider the threat of new entrants into the industry (Table 3).

Table 3- Evaluation of the threat of new entrants for «TsinKaz» LLP (Evaluation of the threat of new entrants)

Evaluation item	Comments	Parameter estimate		
		3	2	1
Economies of scale in the production of goods or services	The greater the volume of production is, the lower is the cost of purchasing materials for the production of goods, the less the fixed costs of production affect the unit of production	Not available	only a few market players exist	significant
			2	
Strong brands with a high level of knowledge and loyalty	The stronger existing brands in the industry are, the more difficult it is for new players to join.	No major players	2-3 major players hold about 50% of the market	2-3 major players hold over 80% of the market
		3		
Product differentiation	The higher the variety of goods and services in the industry is, the more difficult it is for new players to enter the market and occupy a free niche.	low level of product diversity	There are microniches	all possible niches are occupied by players
			2	
Capital requirements	The higher the initial level of investment to enter the industry is, the more difficult it is for new players to enter the industry.	low (pays off in 1-3 months of work)	average (pays off in 6-12 months of work)	high (pays off more than 1 year of work)
				1
Access to distribution channels	The more difficult it is to reach the target audience in the market, the lower is the attractiveness of the industry	access to distribution channels is fully open	access to distribution channels requires moderate investments	access to distribution channels is limited
			2	
Government policy	The government can limit and close the possibility of entering the industry through licensing, restricting access to sources of raw materials and other important resources, regulating the price level	There are no restrictive acts by the state	the state intervenes in the industry, but at a low level	the state fully regulates the industry and sets restrictions
			2	
Willingness of existing players to lower prices	If players can lower prices to maintain market share, this is a significant barrier to the entry of new players	players will not lower prices	major players will not lower prices	existing players reduce prices if any attempt to introduce cheaper offer is made

			2	
Industry grow thrate	The higher the growth rate of the industry is, the more willingly new players are to enter the market.	High growing	Slowin gdown	Stagnation or decline
		3		
TOTAL SCORE		17		
8 points		Low level of threat of new entrants		
9-16 points		Average level of threat of new entrants		
17-24 points		High level of threat of new entrants		
Note - compiled by the author on the basis of [2]				

We will assess respectively the threats for the companies of «Gold Product» JSC and «Issyk Fruit Canning Plant» LLP.

Thus, «Gold Product» JSC is a company operating in the Kazakhstan market since 1998 and is familiar to the consumer, first of all, as the largest producer of grape wines known under the «Turgen» brand name, as well as canned fruits and vegetables under the brands «TurgenBrand», «Goldy», and juice products under the brands «Goldy» and «Dobrynya» [16].

We estimate the power of consumers (Table 4).

Table 4 - Evaluation of power of costumers for «TsinKaz» LLP (Power of costumer)

Evaluation item	Comments	Parameter estimate		
		3	2	1
The proportion of customers with a large volume of sales	If costumers are concentrated and make purchases on a large scale, the company will have to constantly make concessions to them.	over 80% of sales accounted for several customers	a minor part of the clients holds about 50% of sales	Sales are equally distributed between all customers.
				1
Propensity to switch to substitute commodity	The lower the uniqueness of the company's product is, the higher is the likelihood that the costumer will be able to find an alternative and not incur additional risks.	company product is not unique, there are complete analogues	company product is partly unique, there are distinctive features that are important to costumers	company product is completely unique, there are no analogues
			2	
Pricesensitivity	The higher the sensitivity to the price is, the higher is the likelihood that the costumer will buy the product at a lower price from competitors	the costumer will always switch to a product with a lower price	the costumer will switch only with a significant difference in price	the costumer is absolutely not sensitive to the price
			2	
Consumers are not satisfied with the quality of the existing commodity in the market	Dissatisfaction with quality generates hidden demand that can be satisfied by a new market player or competitor	dissatisfaction with the key characteristics of the product	dissatisfaction with the secondary characteristics of the product	<a href="#">total satisfaction with quality</a>
				1
TOTAL SCORE		9		
4 points		Low level of cosumer switch threat		
5-8 points		Average level of cosumer switch threat		
9-12 points		High level of cosumer switch threat		
Note - compiled by the author on the basis of [2]				



All companies are characterized by a high risk of new players entering the market. This is due to the relatively high growth rates of the industry, the impossibility of reducing the price of products by the main market players in the event of a decrease in prices, with the peculiarity of the industry producing products for the mass consumer [17].

We will consider power of suppliers (Table 5).

Table 5 - Assessment of power of suppliers for «TsinKaz» LLP

Evaluation item	Comments	Parameter estimate	
		2	1
Number of suppliers	The fewer suppliers there are, the higher is the likelihood of unreasonable price increases.	A small number of suppliers or monopoly	Wide range of suppliers
		2	
Suppliers resources limitations	The higher the suppliers resources limitation, the higher is the likelihood of prices increasing	Limitations in volumes	Unlimited volume
		2	
Switching costs	The higher the switching costs are, the greater is the threat to prices increasing	High costs of switching to other suppliers	Low costs to switch to other suppliers
		2	
Priority of direction for the supplier	The lower the priority of the industry for the supplier is, the less attention and effort he puts into it, the higher is the risk of poor quality work	Low industry priority for the supplier	High priority of the industry for the supplier
		2	
TOTAL SCORE		8	
4 points		Low level of suppliers influence	
5-6 points		Average level of suppliers influence	
7-8 points		High level of suppliers influence	
Note - compiled by the author on the basis of [2]			

The assessment showed a fairly high level of threat from substitute products. This means that the company's products are not unique. There are companies that produce goods substitutes, in accordance with the ratio of "price quality", which occupy a sufficiently large market share [18]. It is necessary to work on the production of a unique product to reduce the negative impact of this factor. The level of industry competition shows the average value. This suggests that the market has an average level of saturation, the market growth rate is growing and the product on the market is standardized on key parameters. At the same time, there is a possibility of a slight increase in prices only to cover their costs. There is a fairly high level of threat of new players entering the market. This conclusion arises from the fact that economies of scale do not work in this case. There are no very large players in the market. The industry is mainly represented by quite small companies, there is a fairly low level of differentiation of goods in the market. Access to distribution channels is quite open. There are no restrictive measures on the part of the government in this direction. The growth rate of the industry is growing. For the company, the threat of losing customers is significant. This is due to the fact that, although the company's products are aimed at the mass consumer, however, the company's product is not unique, there are full analogues of products on the market. In view of this, the buyer can always switch to a product with a lower price. The company's mission is the production of domestic high-quality food at affordable prices, the revival of agriculture in Kazakhstan.

The principles on which the company focuses:

- strict quality control of products - control of production processes at all stages of production.
- orientation of the company to the consumer.
- compliance of product quality with all Kazakhstan and international quality standards.
- highly qualified employees.
- the company's pricing policy is flexible: «high product quality at a reasonable price» [20].

**Findings.** Therefore, we can recommend the company:

- to adhere to the strategy of leadership in a certain market niche and create a more unique product,
- the company should focus its main efforts on building a high level of product knowledge and on building awareness of the unique features of the product,
- to maintain competitiveness, it is necessary to constantly monitor the proposals of competitors and the emergence of new entrants,
- to reduce the impact of price competition on the company sales,
- activity to concentrate on building long-term relationships with the customer,
- it is recommended to diversify the client portfolio,
- special programs are required for VIP clients and an economy program for price-sensitive consumers.

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#### **ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ ЖЕМІС-ЖИДЕК ЖӘНЕ КӨКӨНІС КӘСІПОРЫНДАРЫНЫҢ БӘСЕКЕЛЕСТІК ҚАБІЛЕТТІЛІГІН ТАЛДАУ**

**Аннотация.** Мақалада жеміс-көкөніс өнеркәсібімен байланысты кәсіпорындардың қызметі талқыланады. Бұл кәсіпорынның рөлі жақсы, себебі ол өндіріспен, сондай-ақ өңдеу өнеркәсібімен байланысты. Негізгі индустриалды ойыншылардың қатерлеріне баға берілді. Ауыстырғыштармен жұмыс істеудің ең тиімді әдісі - күшті бренд құру: компания өнімдерін тұтынадан нақты айырмашылық және қосымша артықшылықтар, өнім стандарттаумен күрес, технологиялық жетілдірулер, өнімнің адалдықты қалыптастыру.

Қолданыстағы бәсекелестер арасында бәсекелестік тұтыну нарығын жаулап алу үшін кез-келген тәсілмен нарықтағы өз ұстанымын жақсартуға деген ұмтылысқа дейін төмендетілді. Қарқынды бәсекелестік баға бәсекелестігіне әкеледі, тауарларды көтермелеу шығындарын көбейтеді, кейде өнім сапасын жақсартуға, жаңа жетістіктерге инвестицияларды артыруға мүмкіндік береді. Осының барлығы саланың табыстылығын төмендетеді.

Бұл тәсіл бес бәсекелестік күшін қамтиды: тұтынушылардың күші, жеткізушілердің күші, салаға жаңа қатысушылардың әлеуеті, өнімді ауыстыру қаупі және салада бәсекелестік. Саладағы ұйымдар үшін бағалау нәтижелерін бағалау үшін кесте құрылды. Өнеркәсіптегі кәсіпорындарды стратегиялық дамыту бойынша ұсыныстар әзірленді.

**Түйін сөздер.** Өнеркәсіп, өндіріс, жеміс-көкөніс өнеркәсібі, тұтынушылардың қуаты, алмастыратын өнімдердің қаупі, стратегия, бәсекелестік.

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#### **ОЦЕНКА КОНКУРЕНТОСПОСОБНОСТИ ФРУКТОВЫХ И ОВОЩНЫХ ПРЕДПРИЯТИЙ РЕСПУБЛИКИ КАЗАХСТАН**

**Аннотация.** В статье обсуждается деятельность предприятий, связанных с плодоовощной промышленностью. Роль этого предприятия велика, поскольку он связан с производством, а также с обрабатывающей промышленностью. Была сделана оценка угроз для основных игроков отрасли. Наиболее эффективный метод борьбы с заменителями - построение сильного бренда: четкая дифференциация и дополнительные выгоды от потребления товаров компании, борьба со стандартизацией продукции, технологические усовершенствования, формирование лояльности продукции.

Конкуренция среди существующих конкурентов сводится к желанию улучшить свои позиции на рынке любыми способами, чтобы завоевать рынок потребителей. Острая конкуренция ведет к ценовой конкуренции, увеличению затрат на продвижение товаров, иногда к улучшению качества продукции, увеличению инвестиций в новые разработки. Все это снижает рентабельность отрасли.

Этот подход включает в себя пять конкурентных сил: мощь потребителей, мощь поставщиков, потенциал новых участников в отрасли, угрозу замещающей продукции, конкуренцию в отрасли. Была построена таблица оценки результатов оценки для организаций данной отрасли. Разработаны предложения по стратегическому развитию предприятий в отрасли.

**Ключевые слова.** Промышленность, производство, плодоовощная промышленность, мощь потребителей, угроза замещающей продукции, стратегия, конкуренция.

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## **MODERN ECONOMIC THOUGHT: DUALITY AND DIRECTION\***

**Abstract.** The article describes the evolution of economic thought from monism to dualism. Like the world economy of individual countries, economic thought is also dual.

The peculiarities of the economic teachings of harmonious and disharmonious economy are given.

Including a comparative analysis of the features of Harmony and disharmony in all spheres of society, including economic one.

The concept of features and objective laws of harmonious economy was formulated. Ways of using the new methodological vector for the stable development of national economies were proposed.

As a rule, for any science, in particular, evolutionism is inherent for the development of economic science, i.e. the transition from stage to stage. This pattern is known.

The question is how and why a new economic thought is formed in Kazakhstan and in the world science as a whole.

Previously, Economics was studied in isolation from the goal, from the meaning of life of different individuals. The whole society was monistically considered as a whole, without differentiation of individuals by the goals of life. Satisfaction of material needs was recognized as a goal of individuals and society as a whole. Of course, without the satisfaction of material needs, without the creation of material conditions, society can not exist. But this fact does not give grounds to declare the economy as the basis of the whole society. This is also the spiritual sphere, if not for the whole society, then for a part of it. In today's world the meaning of the "spiritual - material" is converted into the duality of "Harmony – disharmony". This is a universal trend!

First, briefly about the category of duality "Harmony and disharmony" in society, its paradigm and laws [2, 3].

As I have repeatedly said and written, there are many dualities in society. They are everywhere. One of them is the one that is understood from antiquity to the present day as the existence of material and spiritual.

In modern conditions, the actual task of scientists was to study the features and stages of development of the considered duality. The study requires the use of spiritual knowledge, in particular, Islamic doctrine, as the basis of human life in modern scientific research, for example, the theory of metasystem analysis. It is known that Islam has always considered religion and science twin sisters [1].

The duality "spiritual – material", like any other, has two sides, like the rivers Tigris and Euphrates. The material world is dynamic, fast-flowing, like the rapid river Tigris, with noise and headlong rushing past us. We live in a century where technology is evolving by leaps and bounds, where ideas that once seemed out of the realm of fantasy have become real. The development of the spiritual world is exponential. For many, its evolution is not so obvious. Behind the quiet water surface there are large currents. It is like the Euphrates, full-flowing and calm.

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\* This article is based on the materials of the authorial works, mainly published in press (see references).

The attitude of individuals and societies as a whole to the spiritual and material, the definition of what is the main, the most important, that is, the purpose of human life, is of great methodological importance. Both opposites cannot be targets at the same time. The choice here is inevitable.

As follows from spiritual knowledge, in particular, from the Islamic doctrine, the purpose of life of each person is initially one-spiritual improvement [1]. In the process of life it is one as a result of education is maintained, implemented, forming the basis of Harmony, others - on the contrary, it remains unachieved, "forgotten" and the role of the target setting goes to the consumption of material goods-to the conditions of human existence. Such a substitution of the purpose of life by means of its achievement, for those who are called astray, as the history of mankind has repeatedly shown, leads to fatal consequences. This is how disharmony is formed in society and its economy.

As a result, a small quantity – the short life of a particular creature, seems to the lost person longer and more than infinity itself (eternal life). This is the astronomical price of ignorance and disbelief in the Creator, the desire for a happy short life on Earth, which is understood mainly as the accumulation of material goods and money on the principle of "here and now." At the same time, as can be understood from the Islamic doctrine, the errant voluntarily prepares himself for eternal torment, depriving eternal happiness in the second life. The totality of such misguided, unbelieving people, basically, forms a world of disharmony.

Accordingly, in the world as a whole and in different states separately, the sphere of economy falls into two components: harmonious economy and disharmonious. Since the objects of economic research are twofold, the modern economic thought adequately consists of two parts – traditional market economic teachings and the latest harmonious. Both of these types of economic doctrine in modern conditions coexist in parallel. Economists study both types of doctrine, whether they like it or not.

So, proceeding from the primary duality "spiritual - material" the derivative duality "Harmony - disharmony" is formed.

For the world of disharmony - crises, conflicts, cataclysms, which are repeated constantly and increasingly deepening, ultimately, are fraught with the disappearance of peoples and their civilizations. This is what the whole history of mankind says from ancient times to the present day. Let us remember the people who disappeared from the face of the Earth because of their disbelief in the Creator and moral degradation. It can be noted that our unbelieving contemporaries lose the true meaning of life, is reduced only to the acquisition of material goods, to the satisfaction of whims, passions, instincts, which ultimately leads to moral decay. In the absence of material goods, the behavior of individuals acquires aggressiveness, sadness, fears. Anxiety fills their minds. In our opinion, this situation occurs due to misconceptions, ignorance, carelessness, bad habits, any other reasons.

The lesson is obvious-it is necessary to move to the path of modern evolution of society to Harmony in everything from the individual to society on the basis of true spirituality and morality. There is obviously no other reasonable alternative.

Today is not yesterday, but not tomorrow also, and glimpses of harmonious thinking are beginning to build a new trajectory. And the role of true spirituality as the basis of Harmony is great here.

The dual pair "Harmony-disharmony" is the subject of our research and scientific interests. As it is now becoming clear, this is fertile ground for the development of science, as if opening new gates to find the truth about the laws of the evolution of society.

Each of the described two worlds has its own objective laws[3]. In 2014 at The research Institute of financial and banking management (now the Institute of social Economics and Finance) was opened previously unknown to world science "**Law of socio-economic Harmony**", which is that spiritual needs dominantly rise above reasonable material and non-material needs and desires of individuals.

The Law of the world of disharmony on the destructive elevation of material needs and desires over the spiritual needs of individuals was also discovered, as well as the Law of mutual limitation of Harmony and disharmony in society. The contradictions between the world of Harmony and the world of disharmony are resolved in an evolutionary way through the development of education, science and education, without radicalism, terror and bloodshed. Harmonious business does not need any conflicts in society, on the contrary, they slow it down.

It should be emphasized that the conscious disregard of the duality of society, the world of Harmony, its basic economic Law of the elevation of spiritual needs leads to the moral degradation of individuals

and entire ethnic groups. It is not difficult to imagine the negative consequences of the situation when they turn a blind eye to the other two laws.

**It should be noted that the absolute Harmony of society is always, everywhere and in everything is impossible due to the influence of a number of adverse factors and conditions (weather, disease, human error and weakness, lack of information, knowledge and skills, etc.). It is given to us as a target ideal-like the highest peak, which humanity climbs, like a climber, trying as much as possible to approach it.**

Another thing is harmonization, which means constant movement (process) to Harmony, overcoming the forces of disharmony, acting covertly or explicitly, consciously or unaware of the contradiction "Harmony - disharmony". Harmony is a green island in the desert oasis, a Paradise for the traveler, a spring for the thirsty. The search for knowledge and the pursuit of inner spiritual enrichment, like the signs of the road, will point the right direction to the final goal.

In our research, we propose a new paradigm for the development of society. Which is in full compliance with its demoetic (the basis of society), democratic, demographic and demo-economic development. Its formula is simple - "D + 3D", i.e. for the harmonious development of one area (in our case – demoeconomic, i.e. the social economy – "D"), another three spheres must do the same. All these four spheres of social life function simultaneously, interrelated and fully, which is a guarantee for the consistent approach of society, its economy to social Harmony[4].

In the scientific literature, this paradigm has not been studied before. Consequently, new laws of Harmony have not been studied and could not be discovered, although harmony has been and remains the subject of study of a whole galaxy of outstanding scientists of the world from antiquity to the present.

In sociology in 2012 was published an interesting book of L. M. Semashko and 75 coauthors from 26 countries "the ABC of harmony for Global peace, harmonious civilization and Tetrach thinking»[5].

It should be noted that our interpretation of the Harmony of society and its spheres differs from many other well-known in the scientific literature. How?

Firstly, the system approach-Harmony in society, in all its areas is certainly based on true spirituality and morality. Just consistency, compliance, balance, proportionality, orderliness without this Foundation they are incomplete or quasi-harmonic. In the systemic understanding of socio – economic Harmony-this is the most complete correspondence in space and time between the highest 4 "D", in which the sphere of demoetics is the Foundation of society and implemented in full all forms of permitted and forbidden, given in spiritual sources. To identify the concepts used, in the first case, it is written by us with a capital letter, in the second-with a small.

Secondly, as the basis of the Harmony of society, the traditional Islamic doctrine is considered as the latest monotheistic religion, preserved in its original form without human corrections, distortions. By its very name, it is a religion of peace. We do not consider various lost sects as the basis of Harmony. The words "Religious life" represent a different expression of the spiritual Foundation of social Harmony.

Thirdly, Harmony is studied in the context of the duality of society as one of the sides of opposites with its own laws. Negelecting, unproductive, obviously, would be to explore the Harmony in isolation from the opposite of disharmony. The very essence of Harmony suggests that this contradiction is resolved through civilized competition without bloodshed, terror, radicalism, war and violence.

Fourthly, since social Harmony is considered systematically, certainly with its basis – true spirituality and morality, the proposed interpretation of Harmony in society, in some individuals gives it a very rich content. Therefore, the whole wide range of semantic concepts "purpose" and "meaning" of life, "permitted and forbidden", "good" and "happiness" logically included in the category of "Harmony" at all levels (from the individual to society).

Therefore, for these four reasons, the studied system "Harmony" is not identical, but, of course, includes "just harmony". The first-capacious, wider, more diverse than the second. It is clear that inequalities are not identical.

I hope that readers will have no doubts that our research of Harmony, in pursuit of a beautiful topic, only repeat the work of other scientists, without introducing anything new. According to Professor R. Nizhegorodtsev (RAS), unlike all predecessors who studied Harmony, in this law the category of "Harmony and its laws" is considered taking into account new modern realities, i.e. in the context of a new paradigm[6].

**If absolute Harmony is an ideal, then the harmonization of society and its spheres is a process of constant, then step-by-step approach to it-an urgent need and accessible reality.**

In the field of demoeconomic great importance is the establishment of a harmonious economy as a result of the development of society.

Harmonious economy – consistently and comprehensively developing part of national economic system (scope of demoeconomic), which is also:

a) satisfying exclusively reasonable material needs of society without damage to society and the environment;

b) functioning certainly on the basis of true spirituality and morality (sphere of demoeconomic);

c) revealing its creative potential with the adequate development of the spheres of demography and democracy in society[3].

**It is formed and developed according to its objective laws, as well as other non-harmonious economy. It is necessary to state: the second – is the most studied economy. The first, on the contrary, is less investigated, except for a few works. Its laws did not become the subject of economic science and education. Although in economic thinking individuals Harmony, at least, its spiritually-moral basis, be can, prevails. Nevertheless, the harmonization of the economy remains out of sight of many scientists. Paradoxically, but factly! Is that fair?**

A unique form of harmonious economy is the Islamic economic model and finance, the global trend speaks about its advantages and strengthening of the role. It is most integrated with true spirituality and morality. This model is inherently characterized by high harmony, which determines its uniqueness. Unlike other models, it contains fully humanistic values. It organically combines what is permitted with what is forbidden, economic freedom with responsibility, private interests with corporate and state interests.

The formation of social and economic Harmony is based on the application of several common fundamental principles, such as moderation in everything, reasonableness, honesty, social justice, responsibility, charity, transparency, partnership and trust. Application or non-application of the General fundamental principles of reasonable behavior of people on the basis of spirituality and morality form the duality of society "Harmony-disharmony", each side of which has its own quality features. Therefore, modern economic thought is dual because of the fundamental differences of the studied types of economy. The conscious choice of the vector of stable development should be present both in economic theory and in the policy of all States and is important because it corresponds to the concept of Harmony in terms of the influence of spiritual values on the behavior of individuals[7,8,9,10,11,12,13].

Table - Comparison of opposites in socio-economic duality "Harmony-disharmony"\*

Comparison issues	Socio-economic duality	
	Harmony«G»	Disharmony«D»
1	2	3
I. Worldview	Spiritually oriented with recognition of the subordinated role of material goods.	Materialistic with denial of the leading role of spiritual values.
II. Description of categories	It means essential connection, proportionality, correspondence, unity of different spheres of society on the basis of true spirituality and morality.	It means violation of the essential connection, proportionality, conformity, unity of different spheres of society, absence or lack of its spiritual and moral basis.
III. Paradigm	The harmony system is a combination of demoeconomics "D" as a primary sphere with three other spheres of society (demography "D" democracy, "D" and demoeconomy "D") according to the formula "D + 3D". The absence or lagging behind of one of these areas means disharmony, especially harmful lack of spirituality and immorality.	
IV. Dual laws in society	The law of the dominant elevation of the true spiritual needs over the reasonable material and non-material needs and desires of individuals.	The law of destructive elevation of material and non-material needs and desires over the true spiritual needs of individuals.

		The law of mutual limitation of Harmony and disharmony
V. Demeotics sphere peculiarities	<p>True religion and related morality form the basis for the formation and development of Harmony, spiritual perfection is the goal of life of individuals, the main condition for the preservation and sustainable development of civilizations. At the same time, a person feels happy. His motto is "happiness is not in money". The development of education, science, language, culture, literature, art, synthesized with the dominant true religion, high morality. Permitted and forbidden in the life of society are in full accordance with the creed of the Creator.</p>	<p>The absence or significant reduction of the role of true religion, material benefits are considered as the purpose of human life. Motto: «money solves everything!» The development of education, science, language, culture, literature, art, is largely necessary to achieve material enrichment and obtain momentary pleasures. Great risks of moral degradation of the individual and ethnic group as a whole, the threat of extinction of civilizations and peoples. What is permitted and forbidden in the life of society does not correspond to the creed of the Creator.</p>
VI. Demography sphere peculiarities	<p>Crisis phenomena are absent, the expanded reproduction of the population at the expense of sufficient fertility, decrease in morbidity and mortality of the population, artificial interruption of birth does not occur, migration processes are possible for natural, climatic, family-related reasons.</p>	<p>Deep crises as a result of the decline in fertility, aging and reduction of ethnic groups, in the fruit before their disappearance threat to civilization, mass migration of the population from the areas of military-political, armed and ideological, ethnic and religious conflicts, economic crises, cataclysms.</p>
VII. Democracy sphere peculiarities	<p>Political processes in the conditions of development of true spirituality, harmonious combination of freedoms and responsibility of citizens, permitted and forbidden, interethnic and interreligious harmony, political modernization, strong institutions of civil society. Development of intercultural communication, mutual understanding and peace, consolidation of efforts of progressive forces in different countries to avoid the threat of the third world war. Building bridges between East and West, between all continents. Dialogue and cooperation among different states.</p>	<p>Democracy is undoubtedly the main value of many States, but it sometimes takes the form of permissiveness. In the absence of a high spiritual and moral basis, excessive liberalization of the way of life, rights and freedoms of people carries great risks of personal degradation (alcoholism, tobacco Smoking, drug addiction, gambling, promiscuity, same-sex marriage, the fall of the role of marriage and family, etc.), creates a threat of disappearance of ethnic groups and their civilizations. Political modernization does not have a true spiritual and moral basis, the authorities are subject to corruption. The policy of hegemonism, seizure of foreign territories, military and political conflicts, the desire to spread democracy around the world has grown beyond its limits, which gave rise to the theory and practice of controlled chaos, fraught with conflicts. The formation of a repetitive vicious circle "aggression-its reflection" with the globalization of terror, the confrontation of countries on political systems, the increasing threat of the Third world war.</p>
VIII. Demeoeconomy sphere peculiarities	<p>Man is harmonious. The combination of collectivist ("this is ours") and individualist ("this is mine") principles, humanism in the behavior of individuals are the advantages of a harmonious economy. Active economic activity is in harmony with spiritual values, including the most important ones (religion, family, human reproduction and education, nature protection, social relations). Developed social protection of individuals. Economic decisions are made by an individual on the basis of limited economic rationalism, taking into account the influence of non-economic factors (religion, ideology, politics, mentality of the people, morality, culture, etc.), i.e. in a wide cultural and spiritual format. It provides for stable development, expanded</p>	<p>Man purely economic. Excessive selfishness ("it's mine") in the behavior of individuals dominates. On the one hand, the developed spirit of entrepreneurship, initiative and freedom of activity of the "economic man", risk appetite, focus on innovation and high profits. On the other hand, unilateral rationalism in economic decision-making. At the same time, active economic activity prevails over the most important spiritual values, such as religion, family, reproduction and moral education of a person, protection of nature, social relations, which leads to aging of the population and social alienation, frequent technogenic cataclysms. The termination of economic activity with</p>



	<p>reproduction of GDP at a sufficient rate, the formation and development of a harmonious national economy on the Islamic economic model and Finance, including the combination of investment with interest-free loans, moderate inequality in the distribution of national income, the stimulation of state development of small and medium-sized businesses, the absence of unemployment, poverty and homelessness, food security,, the formation of income solely through labor and social payments with the exception of shadow business, corruption, loans with interest, currency speculative operations, land lease with the distribution of the actual crop or other products (izdolschina) between economic entities-partners, the development of charity in business and in society in General and material assistance to the poor from the rich, the establishment of partnerships in business, public-private entrepreneurship, corporate relations, the development of Halal industry, the exclusion of goods and services harmful to human health.</p> <p>The development of a green economy is not forced, but motivated, which ensures reliable protection of the environment.</p> <p>The reasonableness of material needs eliminates waste in the use of all kinds of resources, increases the demonetization in people's lives.</p> <p>Motives of consumer behavior:</p> <ul style="list-style-type: none"> <li>- self-realization of the person with a harmonious combination of consumption of material goods with a wide range of spiritual values, as well as their creation and application;</li> <li>- well-being of the family, children and self-responsibility for themselves and the family, strengthening of social ties in the micro-society and even wider.</li> </ul>	<p>extremely limited spiritual life, mainly within the individual's own microcosm, is fraught with loneliness, a deep moral and psychological crisis (depression) of the individual.</p> <p>The existing economic models are characterized by high instability, volatility and injustice. The use of innovation, human capital, natural resources and other favourable conditions and factors for the development of sometimes unhealthy competition and monopolism. Unilateral target setting – material enrichment, the construction of a society of consumption, exaggerated the role of money up to turn them into a commodity and a criterion of the happiness of man, the excessive polarization of social groups and regions by size of income without the spiritual and moral foundations that are fraught, ultimately, the disappearance of ethnic groups and their civilizations, a high level of unemployment and poverty. Permanent financial and economic crises and high inflation, social conflicts, speculative and shadow business, concealment of income, tax evasion, corruption, production of goods and services harmful to people, environmental pollution and increasing environmental disasters, the desire to obtain excessive profits, monopoly of TNCs, fraud and financial pyramids, interest as a social disease, high credit dependence, loans with interest, land and property lease with a firm cash payment regardless of the actual business results, "soap bubbles"», a large gap between the real and financial sectors, the growth of sovereign debts and the threat of default of States and companies. The increase in the cost of living in the overconsumption of goods and services, especially harmful to human health. The danger of destruction of the gene pool of Nations and the natural environment, the "green economy" is possible only under duress due to the highest threats of natural disasters, which is not enough to preserve civilization.</p> <p>Motives of consumer behavior:</p> <ul style="list-style-type: none"> <li>- self-realization of the person with emphasis on the consumption of material goods with the creation and use of individual spiritual values;</li> <li>- own well-being, at least-families, children.</li> </ul>
<p>*Systematized by the author according to the results of his own research published in the press with additions[2, 4, 14, 15].</p>		

The table shows that Harmony contributes to the preservation of ethnic groups and the development of civilization as opposed to disharmony.

As it was emphasized at the International round table on the theme: "Socio-economic Harmony: paradigm, laws and problems", organized by the Institute of social economy and Finance in cooperation with the University of Narhoz (16.04.2016), the concept of socio-economic Harmony, its paradigm and Laws opened for the first time in the world science are promising, more relevant than ever methodological direction in the difficult and long search by the human community for a vector of balanced, sustainable, dynamic, successful in all spheres and manifestations of development [15].

**The international round table stated:**

1. To propose the "D+3D" paradigm as the basis of socio-economic policy pursued by public authorities. The harmonization of social relations should be ensured by combining economic development with further democratization of society, its demographic and especially with a high spiritual and moral level.

2. To recognize, certainly, the concept of duality "Harmony-disharmony", its paradigm "D+3D" and economic laws are actual. Take into account that these developments are published in many languages, including all the world, and posted on the Website of the global Union of Harmony with the attendance of more than 8 million people (on 01.04.16). To evaluate this theoretical and methodological direction of scientific research of Kazakh scientists in the field of social science as a priority, which has great practical importance, allowing to expand the range of management decisions, to ensure dynamism in the implementation of state projects and programs.

3. The Central place in the knowledge of socio-economic Harmony should be given to the education system, the formation of a harmonious consciousness of students. Quality education involves a combination of professional knowledge with the education of young people on the basis of spiritual, humanistic values, cultural traditions of the peoples.

The recommended program of promotion in Universities of the elective course on the harmonious economy, as well as special sections on the duality of society "Harmony-disharmony", its paradigm and laws in the subject context of training courses "Economic theory", "Macro - and microeconomics", "Entrepreneurship", "project Management", etc. is focused on the solution of these problems.

The initiative of the Eurasian National University named after L. N. Gumilev about the opening of the selected elective course and recommend it to other universities should be supported.

Within the framework of this Program, joint efforts of scientists, specialists, representatives of business structures are needed to develop and publish textbooks and manuals on the problems of socio-economic Harmony.

4. Business trainings, professional development programs, conferences and seminars – all the variety of forms and methods are aimed at strengthening the effective interaction of science, education and business. Interaction and integration should be based on a common understanding of the relevance, global and local importance of the principles of socio-economic Harmony, which is important, in particular, for the development of partner business structures (such as clusters in the economy, domestic franchise systems, etc.).

In conclusion, it should be emphasized, as can be seen from this comparison, the evolution of society to Harmony is a true, truly saving vector of stable development of peoples and their civilizations. In contrast to the disharmonious existence of many modern societies.

In our opinion, the universal hope is as follows: "Harmony will save the World!"

May God help us all!

**Ораз Баймұратов**

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Әлеуметтік экономика және қаржы институтының директоры

**ҚАЗІРГІ ЭКОНОМИКАЛЫҚ ОЙ:  
ОНЫҢ ЕКІЖАҚТЫЛЫҒЫ ЖӘНЕ БАҒЫТТАРЫ**

**Аннотация.** Мақалада монизмнен дуализмге дейінгі экономикалық ойдың эволюциясы баяндалады. Жекелеген елдердің әлем экономикасы сияқты экономикалық ой да екіжақты.

Гармониялық және дисгармониялық экономикалық ілімдерінің ерекшеліктері баяндалған.

Экономикалық қарым-қатынасты қоса алғанда, қоғамның барлық салаларында гармония (үйлесім) мен дисгармония (үйлесім жоқ) ерекшеліктеріне салыстырмалы талдау жасалды.

Үйлесімді экономиканың ерекшеліктері мен объективті заңдары ұғымы тұжырымдалған. Ұлттық экономикаларды тұрақты дамыту үшін жаңа әдіснамалық векторды пайдалану жолдары ұсынылды.

**Ураз Баймуратов**

академик Национальной академии наук Республики Казахстан,  
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**СОВРЕМЕННАЯ ЭКОНОМИЧЕСКАЯ МЫСЛЬ:  
ЕЕ ДУАЛЬНОСТЬ И НАПРАВЛЕНИЯ\***

**Аннотация.** В статье излагается эволюция экономической мысли от монизма до дуализма. Как и сама экономика мира отдельных стран, экономическая мысль также дуальна.

Изложены особенности экономических учений гармоничной и дисгармоничной экономик.

Дан сравнительный анализ особенностей Гармонии и дисгармонии во всех сферах общества, включая экономическую.

Сформулированы понятие особенностей и объективные законы гармоничной экономики. Предложены пути использования нового методологического вектора для стабильного развития национальных экономик.

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## TRENDS IN THE DEVELOPMENT OF UNDERSTANDING AND PRACTICE OF SOCIAL RESPONSIBILITY OF BUSINESS IN KAZAKHSTANI BANKS

**Abstract.** The global financial crisis has actualized the problems of enterprises and has focused attention on the need to restore trust in banks through corporate social responsibility. In this regard, social responsibility in the modern world is perceived not only as a charity, but also as an effective activity that enhances the business reputation and capitalization of the banks.

The article analyzes the results of conducted specialized studies that demonstrate the level of awareness of business entities in Kazakhstan about the social responsibility of business, as well as understanding the concept of social responsibility of business by various stakeholders.

In the author's opinion, in Kazakhstan it is necessary to improve the system of social responsibility of business, to develop an analytical tool for the effectiveness of its functioning, to determine the procedure for the preparation and audit of social reporting at the legislative level.

**Key words:** State, society, entrepreneurialism, banks, social responsibility of business, social reporting, principles of social responsibility of business.

**Introduction.** The development of the idea and the concept of corporate social responsibility have come a long way, and have achieved worldwide public recognition. According to the results of numerous studies, the world's largest banks are increasingly aware of the need to actively develop and implement CSR policies, and progressive states - to support and stimulate the introduction of such policies. Strangely enough, it was the crisis that actualized the problems of enterprises and focused attention on the need to restore trust in banks through corporate social responsibility. For example, a study conducted in the European Union in 2018 showed that just over half of the citizens (51%) of European countries believe in the positive impact of banks on society, and 4 people out of 10 believe that the influence of banks on society is negative. At the same time, representatives of dynamically developing economies of the BRIC countries, on the contrary, believe in the positive role of banks, for example, 79% of Brazilians agree with such statement [1]. Thus, the role of CSR as a tool that increases the credibility of business is significantly growing.

**Methods of research.** As part of this study, the following methods of collecting primary and secondary data were used: the study of analytical reports, studies, articles and other materials that are publicly available.

Used research methods: interpretation of interviews, comparative analysis, case study, literature study.

**Results and discussion.** The CIS countries have their own peculiarities of CSR development, namely: the insignificant influence of governments on the formation of the national CSR agenda, the strong role of international institutions and donors in the development of the CSR concept (UN, EU, embassies of European countries), the insignificant role of public and expert organizations, as well as media in the formation of CSR [2.3]. It is worth mentioning that regulatory tools (laws, government

regulations and programs) are still an incentive for businesses to implement CSR in the CIS countries. In the future, the CIS sub-model may gradually transform into the European model, which is connected with political and economic integration processes. However, this process will not be rapid.

Nevertheless, even today, 13 large banks and 11 public organizations of Kazakhstan have become participants of the UN Global Compact (hereinafter - the GC) (**Fig. 1**).

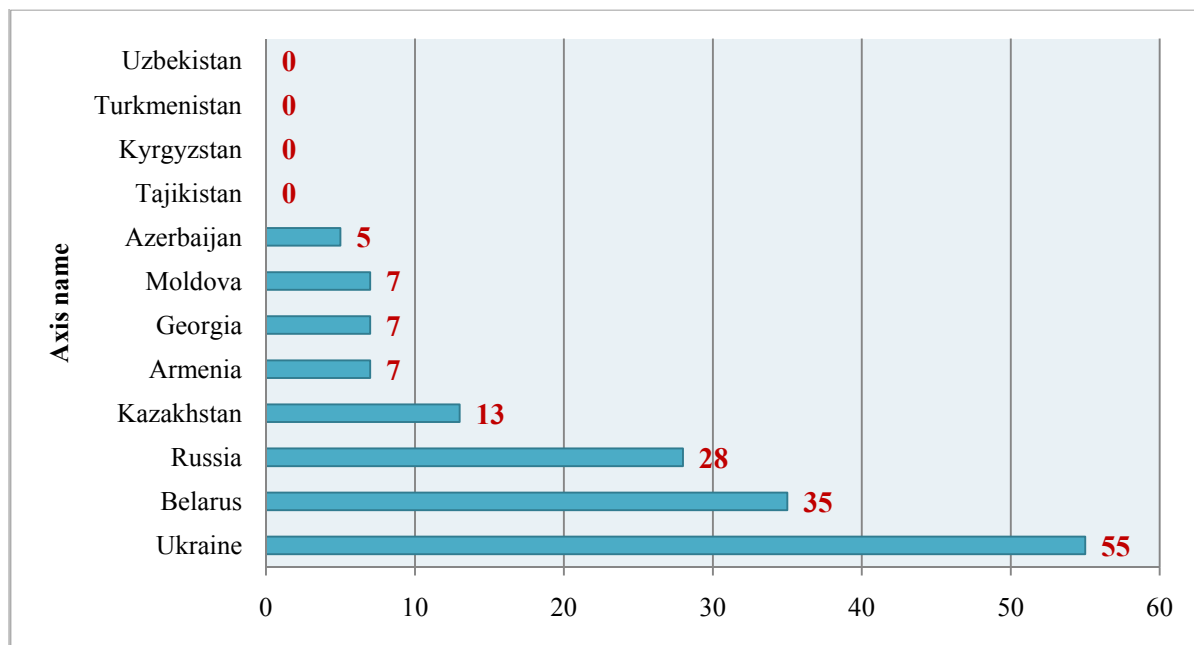


Fig. 1 – Number of participating banks of UN Global Compact (Facts from 2018)

If we talk about other CIS countries, then the diagram below shows that Ukraine is the leader in business participation in the GC. At the international level, 55 Ukrainian banks are represented in the GC. It should be noted that Ukrainian business already regards CSR as a competitive advantage and part of its business strategy. The banks of Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan are not represented in the UN GC. Thirty-five participating banks represent Belarus, Russia is represented by 28 banks [4].

Most banks consider the lack of legislatively approved incentives to be the main factor hindering CSR. In Russia, a significant role in the development of CSR is played by business associations, state corporations and public organizations. Significant successes were achieved by Russian banks in the preparation of non-financial reports: about half (46%) of the 100 largest Russian banks make non-financial reports (for comparison, in Ukraine, among 100 largest banks, only 9 make non-financial reports). However, often CSR projects of Russian banks are of a charitable nature and are most often the decision of the owner of the corporation, rather than part of the corporate CSR strategy. It is worth noting that every year there are more initiatives and associations. From year to year, the number of banks that make non-financial reports in accordance with the Global Reporting Initiative (GRI) is increasing, reporting on numerous CSR indicators in the economic, social, environmental and other fields [5.6]. At present, the draft of the manual on integrated reporting, combining the disclosure of financial and non-financial indicators in one report has already been submitted.

Large studies on CSR in Kazakhstan have been conducted several times. One of the first studies of 2008 was conducted by the United Nations, and the last in 2013 by the Research Center Sandzh. The latest study showed that over the past five years the level of awareness of CSR among business representatives increased by only 3 percent (from 60 to 63 percent) [7].

#### *Awareness of business about CSR.*

Awareness is one of the important conditions for promoting the principles of corporate social responsibility. As the survey showed, 63% of respondents are familiar with the concept of CSR (**Fig. 2**).

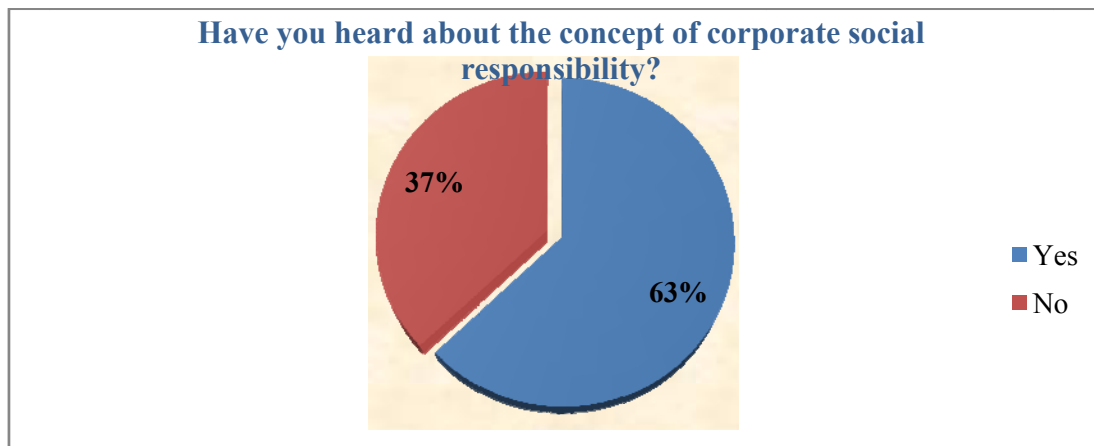


Fig. 2 – Awareness of business about CSR in Kazakhstan, %

Awareness has an essential link to the size of the business. All representatives of large businesses report that they are familiar with the concept of CSR (100%) [8].

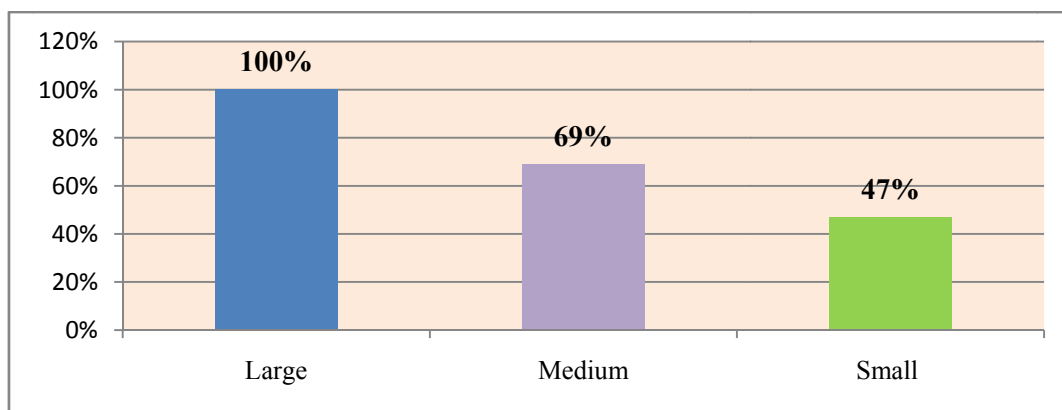


Fig. 3 – Awareness of CSR of businesses of various sizes, %

In the medium-size business more than half of the respondents (70%) have heard about CSR. Small businesses accounted for less than half of the respondents (47%).

These studies confirm that representatives of small business are the least informed. Reasons: there is no interest of the leaders themselves in CSR; limited opportunities for small businesses that impede the development of CSR practices (insufficient turnover, lack of CSR experience and practices, low legal and qualification literacy) [9.10].

*Understanding of CSR by business.*

If a decade ago, under SR, many of the Kazakh banks understood only compliance with legislative norms and implementation of social projects, but now they also talk about long-term success based on the management of social and environmental risks, and the contribution of business to the country's sustainable development. That is, the quality of understanding of these processes has increased [11].

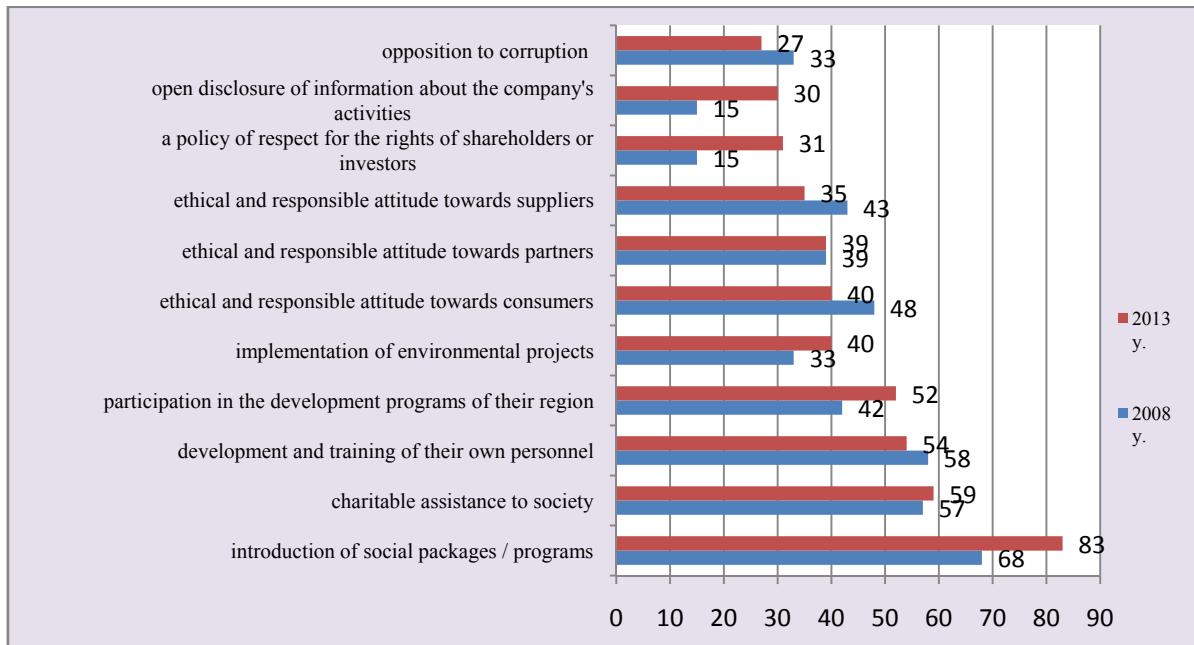


Fig. 4 – Awareness of CSR of businesses of various sizes, % of businesses responding affirmatively

First of all, the majority of respondents in the CSR concept include the introduction of social packages / programs in the enterprise and the improvement of working conditions for their own personnel (83%). Other items most often associated with CSR are charitable assistance to society (59%), development and training of their own personnel (54%), participation in development programs of their region (52%). 80 74 61 Foreign enterprises Joint ventures Kazakhstani enterprises 17 equally associate CSR with the implementation of environmental projects (40%) and ethical and responsible attitude towards consumers (40%), partners (39%) and suppliers (35%). Less commonly, the concept of CSR is associated with a policy of respect for the rights of shareholders or investors (31%), open disclosure of information about the bank's activities (30%) and opposition to corruption (27%). Comparison with the results of 2008 shows that the introduction of social packages / programs and the improvement of working conditions for their own personnel remains as the most often called item, and its role compared with the previous result has increased (68% in 2008 and 83% in 2013). In addition, the frequency of mentioning participation in the development programs of their region (42% and 52%), the policy of respecting the rights of shareholders (15% and 31%), and providing information about the company (15% and 30%) have increased [12.13].

In terms of the size of business, we note that regardless of the size of the business, first and foremost, CSR is improving the working conditions of personnel, the introduction of social packages / programs. The difference is only in the shares of positive answers (small business - 78%, medium - 83%, large - 89%). The fact that this component for business is on the first place speaks about the recognition of the importance of being accountable to employees, who in principle determine the development of the banks [14].

**Conclusion.** Replacing these gaps is a prerequisite for the effective application of CSR tools in practice, thereby increasing the competitiveness of Kazakhstan's business and promoting sustainable development of the country.

More modern study prepared by the Center for Legal Policy Research in 2015 with the support of the British Embassy in Astana is complementing the picture. The study is done in a case-study format, which examines specific examples of how 30 different banks in Kazakhstan (public, private, international) are building their work in the field of CSR. The study showed that number one among the projects is a one-time assistance to those in need and other manifestations of charity; next – projects supporting the development of communities; third – the rights of consumers. Projects related to environmental protection, improvement of labor practices and corporate governance are much less common. In general, there are no

projects on human rights and fair competition. This is a good illustration of the level of understanding of the goals and objectives of CSR by the top managers of banks in the country [15.16].

In this regard, it is necessary to note positive trends in the development of CSR in Kazakhstan:

First, CSR has the support of the President of the RK, who announced that in 2008 at the forum in Zhezkazgan.

Second, the practice of preparing non-financial reports is becoming more widespread.

Third, this year the national standard on CSR "ISO 26000" was adapted and adopted.

Fourth, the National Chamber of Entrepreneurs included CSR in its agenda and is taking steps to promote CSR as a tool among businesses.

Fifth, in connection with the plans of Kazakhstan to enter the "elite economic club" - the Organization for Economic Cooperation and Development (OECD), the issues of CSR will be repeatedly raised and initiated at the highest level [17].

Over the past year, Kazakhstan has managed to improve its position on the international rating of Doing Business valuation by 16 points from 51 place in 2016 to 35 currently. The authorities understand what the rating is, and whether the strengthening of the principles of corporate social responsibility (CSR) can help Kazakhstan strengthen its position in the rating [18.19].

However, in response to the most important question - can CSR become the driver of growth for Kazakhstan in the Doing Business rating - the opinions of the experts differ. The Ministry of National Economy noted that "the methodology (rating Doing Business - V.) does not provide an indicator for the development of corporate social responsibility, thus the development of CSR can not affect the position of the republic in the ranking."

In "Atameken", the situation is more optimistic. They believe that the main reason why banks become 'socially responsible' is their focus on long-term business success. Responsible business is always stable and attractive, including for investors. They are convinced that many businessmen have already shown their active position in social, educational, environmental projects. Now, "it is important to support business in these initiatives, carry out systematic information and explanatory work, popularize such experience, and also motivate the private sector to deeper manifestation of social and environmental responsibility" [20].

Of course, such an approach can help Kazakhstan get to the top-line in Doing Business, despite the lack of a "CSR" indicator in the rating. However, it is more correct that the end in itself is not the rating, but the improvement of the conditions in which the Kazakh business is developing today [21].

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### **ҚАЗАҚСТАНДЫҚ БАНКТЕРДЕГІ БИЗНЕСТІҢ ӘЛЕУМЕТТІК ЖАУАПКЕРШІЛІГІ ТУРАЛЫ ТҮСІНІК ПЕН ТӘЖІРИБЕНІ ДАМУ ТЕНДЕНЦИЯЛАРЫ**

**Аннотация.** Әлемдік қаржылық дағдарыс кәсіпорындардың проблемаларын өзектендірді және корпоративтік әлеуметтік жауапкершілік арқылы банктерге деген сенімін қалпына келтіру қажеттілігіне бағытталған. Осыған орай, қазіргі әлемдегі әлеуметтік жауапкершілік тек қайырымдылық ретінде ғана емес, сондай-ақ банктердің іскерлік беделі мен капиталдандыруын күшейтетін тиімді қызмет ретінде де танылады.

Мақалада кәсіпкерлік субъектілерінің бизнестің әлеуметтік жауапкершілігі туралы ақпараттандыру деңгейін көрсететін мамандандырылған зерттеулердің нәтижелері, сондай-ақ түрлі мүдделі тараптардың бизнестің әлеуметтік жауапкершілігі тұжырымдамасын түсіну талданады.

Авторлардың пікірінше, Қазақстанда бизнестің әлеуметтік жауапкершілігі жүйесін жетілдіру, оның жұмыс істеу тиімділігін қамтамасыз ету үшін аналитикалық құралды әзірлеу, заңнамалық деңгейде әлеуметтік есеп беруді дайындау және аудит жүргізу тәртібін анықтау қажет.

**Түйін сөздер:** Мемлекет, қоғам, бизнес, банктер, бизнестің әлеуметтік жауапкершілігі, әлеуметтік есеп беру, бизнестің әлеуметтік жауапкершілігі принциптері.



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## ТЕНДЕНЦИИ РАЗВИТИЯ ПОНИМАНИЯ И ПРАКТИКИ СОЦИАЛЬНОЙ ОТВЕТСТВЕННОСТИ БИЗНЕСА В КАЗАХСТАНСКИХ БАНКАХ

**Аннотация.** Мировой финансовый кризис актуализировал проблемы предприятий и сосредоточил внимание на необходимости восстановления доверия к банкам посредством корпоративной социальной ответственности. В связи с этим социальная ответственность в современном мире воспринимается не только как благотворительность, но и как эффективная деятельность, которая повышает деловую репутацию и капитализацию банков.

В статье анализируются результаты проведенных специализированных исследований, которые демонстрируют уровень осведомленности субъектов бизнеса в Казахстане о социальной ответственности бизнеса, а также понимание концепции социальной ответственности бизнеса различными заинтересованными сторонами.

По мнению авторов, в Казахстане необходимо совершенствовать систему социальной ответственности бизнеса, разработать аналитический инструмент для обеспечения эффективности его функционирования, определить порядок подготовки и аудита социальной отчетности на законодательном уровне.

**Ключевые слова:** Государство, общество, предпринимательство, банки, социальная ответственность бизнеса, социальная отчетность, принципы социальной ответственности бизнеса.

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## **TRENDS IN THE DEVELOPMENT OF INNOVATIVE ACTIVITY IN THE AGRO-INDUSTRIAL COMPLEX OF KAZAKHSTAN**

**Abstract.** Kazakhstan is the owner of reserves for the further growth of agricultural production and food, as a country with significant reserves of land suitable for farming, even taking into account adverse climatic conditions. In recent years, the situation in the agricultural production of the republic has been characterized by an increase in efficiency, the development of the food market, logistics, financial services in the village, and, as a result, several improvements in the quality of life in the village. Ensuring the innovation development of agriculture in Kazakhstan requires significant transformations of scientific and educational activities, the creation of a system for mastering the achievements of scientific and technological progress (technology transfer), optimization of the management structure and coordination of participants in the innovation process.

**Keywords:** agriculture, sustainable development, innovation, activity.

### **INTRODUCTION**

New challenges in world markets lead to the need to accelerate the introduction of new technologies in agriculture. Unfortunately, in Kazakhstan, their implementation is carried out at low rates. There are no well-established mechanisms for the dissemination of advanced knowledge and agritechnologies for agricultural producers. To be more precise, one of the problems was the lack of complex technological solutions for improving the agrarian business.

In the program "Kazakhstan-2030" N.A. Nazarbayev speaks about economic growth based on a developed market economy with a high level of foreign investment.

The President stresses that our strategy is based on limited state intervention in the economy, with its active role. The state should play a significant but limited role in the economy, creating a legitimate market framework in which the private sector plays first fiddle. At the same time, the state itself should become the guarantor of a free economy. His task is to establish market rules and then enforce them, acting fairly and impartially.

### **MAIN PART**

Worldwide, the knowledge dissemination system has become the main channel for promoting innovation in the agro-industrial sector. Practically in all leading countries of the world (USA, Canada, China, Argentina, France, Brazil - leading Extension schools), the system of knowledge dissemination operates on the basis of universities or research centers, and their financing is mainly carried out from public sources. The United States achieved the greatest progress in this area, where from 30 to 40% of the amount of funding for the agricultural science of universities is directed to the development of the Agricultural Extension knowledge system. For example, only in one University of Iowa, about \$ 70 million is allocated annually for the implementation of projects for the dissemination of knowledge, which is approximately 23.1 billion tenge, which is 55 times more than in Kazakhstan. I will note that, in comparison, this is approximately like one Almaty region. In Argentina, 30% of the budget of the operator of scientific research INTA is allocated for the operation of the Extension system. When meeting with

farmers in Argentina, our question was, what was the most important factor in the growth of agricultural productivity, they responded as follows. The growth of productivity in their farms is not connected with financial state support, but with the use of innovative technologies (both domestic and foreign) for the production of one or another agricultural product through the system of dissemination of knowledge and scientific research. A novice farmer can get a full package of services, including technological, marketing and economic information. This is the main phenomenon of agricultural efficiency in Argentina, which almost completely satisfies its own food needs, being one of the leading exporters in the world, in this country agricultural products bring about 55% of export earnings.

In most technological areas, we are very far behind developed countries. Therefore, it is necessary to develop special educational and advisory programs involving interdisciplinary expert groups for farmers in partnership with progressive foreign organizations. Universities can do this. And it is necessary to allocate funding exclusively on a competitive basis and only to those performers who will offer the best programs and which the farmers themselves will support.

In 2016–2017, the University, together with foreign partners from the United States, Canada, and China, reached an agreement to implement comprehensive programs to disseminate knowledge in the field of meat and dairy cattle breeding, aquaculture and fisheries, and meat processing. Each of them is supposed to focus on the transfer and adaptation of advanced foreign experience. However, due to lack of funding, the programs were not implemented, although interest in cooperation from foreign partners remains. When allocating the requested funding, programs can be implemented in the current year. In this matter, we hope for the support of the Ministry of Agriculture of the Republic of Kazakhstan and NPP Atameken in the framework of the budget program "Information support for agribusiness entities at no cost."

The economic importance of agriculture lies in the possibility of obtaining a synergistic effect from the development of this industry through various intersectoral links. Agriculture has multiplicative properties and in times of crisis it could become an economic locomotive of the country, allowing it to use almost unlimited reserves of GDP growth in the Republic of Kazakhstan. "The fundamentally important priority of the economic program for 2020 and the near future is the further deepening of reforms and structural reforms in agriculture, efficient use of land and water resources," the President notes. As a result of the implementation of comprehensive measures to accelerate the transition to an innovative way of agricultural development aimed at structural transformation and diversification of the industry, as well as rational use of resources, it was possible to maintain the growth trend of agricultural production at an average level of 6.2% for the period 2006–2016. In terms of agricultural production development, Kazakhstan consistently occupies a leading position among the CIS countries.

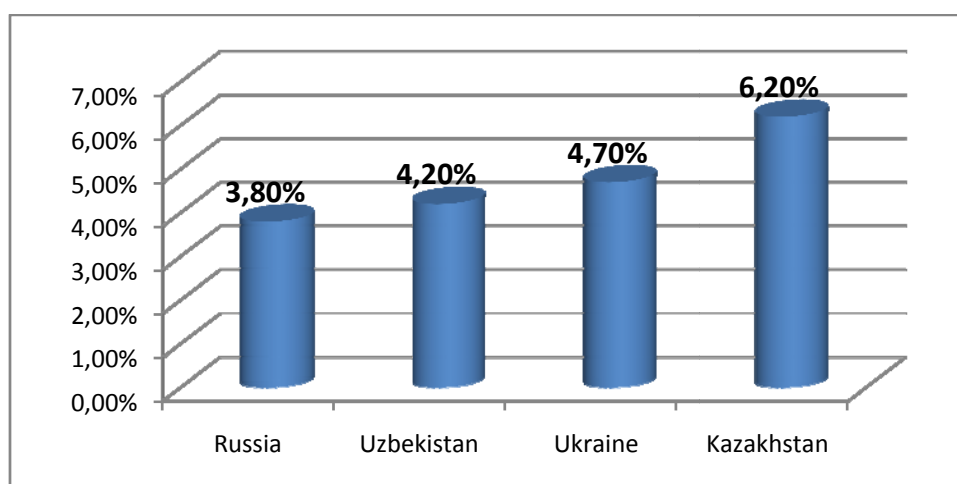


Figure 1 - Average economic development of agriculture

In 2005–2015, when the average economic development of agriculture was Russia (3.8%), Uzbekistan (4.2%) and Ukraine (4.7), then Kazakhstan (6.2%), a stable high rate of economic

development Agriculture has taken a leading place among the countries of the CIS and the World. "The formation of the national innovation system provides for the creation and development of objects of the innovation structure, the innovation active territories, the development of a system of regional and sectoral funds to support innovation activity." Innovation in agriculture, in our opinion, should be understood as innovations affecting directly (or indirectly, within the technological chain) processes that involve people, machines and equipment, as well as elements of a biosystem (animals, plants, etc.) whose existence in the natural environment (without human participation) is impossible or possible only with the loss of basic functional characteristics.

When calculating the innovation index of the regions of Kazakhstan, the following set of factors is taken into account, illustrating the ability of regions to create innovations and their readiness to introduce them into the economy:

- the number of personnel engaged in research and development,% of the total number of people employed in the economy;
- the number of university students, 10 thousand people. population;
- the number of registered patents per 1,000 people. employed in the economy;
- costs of technological innovation, tenge. / person;
- the level of Internetization,%.

In this method, the existing statistics with a preliminary assessment of its reliability are used to the maximum. The Index of Readiness of the Regions of Kazakhstan for the Information Society is a measure of the degree of preparedness of regions for the large-scale use of information and communication technologies. The parameters of innovative development of the regions, factors considered in the rating, are divided into two groups:

- 1) factors describing the level of technological development of the region, or factors of innovation susceptibility (labor productivity, capital productivity, environmental friendliness of production);
- 2) factors of innovative activity of a region or region (expenses for research and development per employee, costs for technological innovations per employee, production of innovative products per capita).

In order to scale up the introduction of new technologies by agricultural producers, Kazakhstan should improve knowledge dissemination programs, increase the volume of consulting and educational services by distributing educational products, implementing highly specialized seminars, medium-term basic and specialized courses, introducing on a systematic basis comprehensive support for rural producers, including the use of digital technology call centers.

It is necessary to introduce the mechanism of the farmer's field school, both in animal husbandry and in plant growing, and then the scientist and the farmer will work together. Secondly, to promote the spread of innovation and technology through universities and research centers, as well as more closely link research and educational activities with business representatives. Thirdly, first you need to support financial resources, and then there will be an effect. Considering that this measure refers to the "green basket" in the WTO context, the state has the right to finance programs for the dissemination of knowledge in any amount, based on the budget possibilities. Green box measures can be applied without restrictions. They are quite clearly stated in the relevant agreements of the WTO members.

Agricultural counseling began as an application of research to agricultural practice through the training of farmers. It now carries out a wider range of functions of communication and training of the rural population by professionals from various fields, including agriculture, agricultural marketing and business research. Counseling is practiced worldwide. Usually through government agencies.

For example, consider the United States Department of Agriculture Agency - the National Institute of Agriculture and Food (IBA), created in 2008 instead of the previously existing Joint Service for Research, Education and Consultancy. This organization is designed to encourage federal-funded research and technological innovation in the field of agriculture, which will contribute to its greater productivity, environmental sustainability and efficiency, and which will attract highly competitive researchers to this area. The IBA finances basic and applied research, as well as mixed research, which can be conducted in universities, state agencies and in the private sector.

It is necessary to create an effective system of transfer and adaptation of foreign knowledge on the basis of agricultural universities, as is done in the leading countries of the world, such as the USA,

Canada, China, and to drastically improve the system of promoting innovation in agricultural production. Separate measures do not create such a system, a comprehensive, systematic approach is needed.

The modern functioning of the agrarian complex should be carried out under the influence of the economic mechanism aimed at creating scientific and technological, managerial and organizational conditions for the innovative development of the industry. The study of the mechanism under consideration allows to form the following content. The economic mechanism of innovative development of the agro-industrial complex is a system of interrelated forms and methods of organizing and stimulating R & D, business development in the scientific and technical sector of the agro-industrial complex and government support at all stages of the process based on the mutual partnership of its members to increase the socio-economic and innovative development of agricultural production. In accordance with the strategy of innovative development of the agro-industrial complex, the formation of an economic mechanism should be carried out in the following areas: the creation of regulatory and regulatory systems for innovative activity; program-target management of the development of innovation in agriculture at the regional levels; development of public-private partnership.

The study of the content of the economic mechanism of the innovative development of the agro-industrial complex makes it possible to single out in it a set of institutional, instrumental, methodical and regulatory components, each of which defines its own forms and methods of organizing and stimulating innovation in agricultural production, as well as the directions of the main tasks to be solved, including: stimulation of innovative activity of economic entities along the whole chain of agro-innovation formation; development of the potential of economic entities (innovation, technology, human resources, scientific, economic, etc.); increasing the investment attractiveness of the industry; development of infrastructure and sales markets for agricultural products. An effective option in organizing and stimulating innovation in agriculture should be the active participation of state capital on the principles of public-private partnership, which determines the use of government mechanisms to stimulate the participation of private business in the development of innovative processes, allows you to combine resources, distribute profits and risks, promotes the formation of competitive environment and at the same time - more efficient use of budget funds. The study of foreign experience shows that the process of innovative development in the agricultural sector should begin with the stimulation of research activities of sectoral research institutes by providing them with incentives, creating conditions for integrating business, universities and research centers with innovative small enterprises technical topics in the field of agriculture in the framework of national programs. The influencing role of the economic mechanism allows us to define a system of forms and methods of organizing and stimulating innovation in agriculture. The study suggests the following classification, which, unlike the existing approaches, is based on the principles of development of public and private partnerships. The introduction of new production technologies should be considered the main direction of innovative development of agriculture. Technological modernization of agriculture is a major factor in improving the efficiency of all agriculture and should be aimed at the introduction of resource-saving technologies. The successful application of conservation farming technologies in various agro-climatic conditions of the Republic of Kazakhstan confirmed their universal applicability. One of the main conditions for the successful development of resource-saving technologies is an integrated approach to managing the process of their implementation, which was developed based on foreign recommendations for the introduction of resource-saving technologies in agricultural production by adapting them to the conditions of use in agriculture of Kazakhstan and to the peculiarities of managers and specialists of dekhkan and farms.

An analysis of business investment activity conducted in 2017 showed that 90% of the largest companies in the country were not ready to present in detail the results of their innovation activities. If in the practice of economically developed foreign countries, private companies play a key role in financing research work and creating innovations, covering up to 80% of national expenditures, in Kazakhstan no more than 25% of investments in scientific and technical progress are financed by business structures.

The critical inadequacy of these figures becomes extremely clear, given that the entire amount of investments in Research and development (hereinafter referred to as R & D) in Kazakhstan in recent years amounted to just over 1% of GDP. For comparison, in the USA the share of expenditures for research work in GDP is about 2.5–2.8%, in Japan –3.3%, and Israel — 4.5%.

## CONCLUSION

The negative dynamics of investment and innovation activity in the country's economy led to significant physical and moral deterioration of the production fund used - from 50 to 70% of fixed assets for production purposes need to be replaced, and the average service life of equipment in the agro-industrial complex exceeded 15 years. In this regard, it is necessary to significantly increase the budget financing of fundamental and priority applied scientific research, modernization and technical re-equipment of fixed assets to conduct research at a level not inferior to the world's best scientific laboratories.

In these conditions, the goal of the strategy of innovative development of the agro-industrial complex of the Republic of Kazakhstan for the period up to 2020 is to accelerate the growth rate of agricultural products by increasing the effective use of resource potential and product competitiveness, solving social problems in rural areas and reducing the gap in the standard of living of rural and urban populations.

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## ҚАЗАҚСТАНДА АГРОӨНЕРКӘСІП КЕШЕНІНДЕ ИННОВАЦИЯНЫҢ ҚАРҚЫНДЫ ДАМУ ТЕНДЕНЦИЯСЫ

**Аннотация.** Қазақстан ауылшаруашылығы өнімдері мен азық-түлік өнімдерін одан әрі өсіруге арналған резервтердің иесі болып табылады, өйткені елдегі ауылшаруашылығы үшін қолайлы жерлердің елеулі қоры бар, тіпті қолайсыз климаттық жағдайларды ескере отырып. Соңғы жылдары республиканың ауыл шаруашылық өндірісіндегі жағдай ауыл шаруашылығындағы тиімділіктің артуымен, азық-түлік нарығын дамытумен, логистикамен, ауылдағы қаржылық қызметтермен, нәтижесінде ауылдағы өмір сапасының жақсаруымен сипатталды. Қазақстандағы ауыл шаруашылығының инновациялық дамуын қамтамасыз ету ғылыми және білім беру ісінің маңызды өзгерістерін, ғылыми-техникалық прогресті (технологияларды беру) жетістіктерін меңгеру, басқару құрылымын оңтайландыру және инновациялық процеске қатысушылардың үйлестіру жүйесін құруды талап етеді.

**Түйін сөздер:** ауыл шаруашылығы, тұрақты даму, инновация, белсенділік

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## ТЕНДЕНЦИИ РАЗВИТИЯ ИННОВАЦИОННОЙ АКТИВНОСТИ В АГРОПРОМЫШЛЕННОМ КОМПЛЕКСЕ КАЗАХСТАНА

**Аннотация.** Казахстан является обладателем резервов дальнейшего роста производства сельскохозяйственной продукции и продовольствия, как страна, имеющая значительные запасы земель, пригодных для земледелия, даже с учетом неблагоприятных климатических условий. В последние годы ситуация в сельскохозяйственном производстве республики характеризуется ростом эффективности, развитием продовольственного рынка, материально-технических, финансовых услуг на селе, и, как следствие, несколько улучшением качества жизни на селе. Обеспечение инновационного развития сельского хозяйства Казахстана требует значительных преобразований научной и образовательной деятельности, создания системы освоения достижений научно-технического прогресса (трансфера технологий), оптимизации управленческой структуры и координации участников инновационного процесса.

**Ключевые слова:** сельское хозяйство, устойчивое развитие, инновации, активность

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JEL [340.1](#)**Z.K.Ayupova<sup>1</sup>, D.U. Kussainov<sup>2</sup>, Uinston Nagan<sup>3</sup>**<sup>1</sup>Kazakh national agrarian university, Almaty, Kazakhstan;<sup>2</sup>Kazakh national pedagogical university named after Abai, Almaty, Kazakhstan;<sup>3</sup>University of Michigan, USA[zaure567@yandex.ru](mailto:zaure567@yandex.ru); [daur958@mail.ru](mailto:daur958@mail.ru)**TO QUESTION ABOUT POST-MODERN PROCESSES  
OF PREPARATION OF MASTER'S DEGREES IN INSTITUTIONS  
OF HIGHER EDUCATION OF KAZAKHSTAN (EXAMPLE - KAZNAU)**

**Abstract.** Undergraduates of KazNAU take part in the management of the university through student self-government bodies representing and protecting students' interests before the administration of the faculty and the university: make proposals on encouraging students for active scientific, educational and social activities; take part in solving social and housing problems; make suggestions for improving the educational process and research; interact with the administration, heads of the university departments, carrying out educational and educational work with students on various aspects of life activities; organize socially important social events for students. The students are the main consumers of the EP, therefore their interests are at the head of the implementation of this program. The main idea of student-centered education is aimed at forming an independent position in the process of study of undergraduates. Continuous analysis of the expected results is carried out by evaluating and discussing with the supervisors with undergraduates the results of the intermediate and final control through their processing and analysis. Master student within the development of OP, regardless of the form, direction and level of training, has the right to Express their disagreement in the form of an appeal. There are disciplines of a methodological nature aimed at the use of innovative technologies in the educational process, developed in conjunction with representatives of specialists in the field of jurisprudence. After that, the undergraduate is IPWM. The graduate student has the ability to check and analyze his progress through the electronic database of the university in an automated on-line mode.

**Keywords:** students government, masters office, undergraduate students, educational process, university administration, educational path, student-centered approach, individual learning path, academic mobility, disciplines of the methodical nature.

Undergraduates of KazNAU take part in the management of the university through student self-government bodies representing and protecting students' interests before the administration of the faculty and the university: make proposals on encouraging students for active scientific, educational and social activities; take part in solving social and housing problems; make suggestions for improving the educational process and research; interact with the administration, heads of the university departments, carrying out educational and educational work with students on various aspects of life activities; organize socially important social events for students. The students are the main consumers of the OP, therefore their interests are at the head of the implementation of this program.

At the heart of OP design is the student-centered approach, which involves the use of such categories as individual learning trajectory, academic mobility, competencies, learning outcomes, ECTS, etc. When implementing, the principle of an individual approach to each student is implemented. First, the undergraduate student has the right to choose their educational learning path. There are disciplines of a methodological nature aimed at the application of innovative technologies in the educational process, developed in conjunction with representatives of experts in the field of jurisprudence of the agricultural sector. After that, the undergraduate is IPRM. Secondly, the undergraduate has the ability to check and analyze their progress through the Platonus database in an automated on-line mode [1, P.82].

The main idea of student-centered education is aimed at forming an independent position in the process of study of undergraduates. Continuous analysis of the expected results is carried out by

evaluating and discussing with the supervisors with undergraduates the results of the intermediate and final control through their processing and analysis.

Sources of information for monitoring are the results of observations, surveys, statistical information, etc. Students are participants in various monitoring groups organized by the Center for Monitoring the Quality of Education, the results of the survey are discussed at a meeting of the department. For the 2017-2018 academic year, a survey of 25 undergraduates out of a total of 32 showed satisfaction of undergraduates with the quality of the implementation of educational programs was estimated at 4.6 points (max 5). For graduate questionnaires - 4.9 points.

Providing graduates with a diploma supplement in accordance with European requirements, in the context, level, content and status of education completed and successfully completed, taking into account the individual trajectory and mobility. A diploma is attached transcript in three languages - Kazakh, Russian and English Monitoring of current performance implies an assessment of the progress of undergraduates in lectures, workshops, colloquiums, SWMT, self-study and control activities. The instructor conducts current and midterm control and displays a corresponding assessment of students' current performance (arithmetic average of current and midterm evaluations). Themes of master's theses correspond to the main issues of the specialty, relevant; contain scientific novelty and practical significance[2].

The results of research or experimental research at the end of each academic period are recorded by the undergraduate in the form of a report. The final result of the research or experimental research work of the undergraduate is a master's thesis. The main results of master's theses are presented in publications and in reports at scientific conferences. The survey shows that undergraduates are generally satisfied with their studies at the university. Every year, undergraduates fill out a questionnaire on student satisfaction with higher education, on providing MTB, information security, social infrastructure, relationships with faculty and university administration. A clearer assessment of teaching faculty is considered by each graduate in the questionnaire "The teacher through the eyes of the student", the results of which can be used to evaluate the teacher's professional qualities.

Continuous advanced training of teaching staff is carried out in accordance with the schedule of completion of advanced training courses at specialized educational courses. In this regard, the faculty annually conducts courses that contribute to a deeper mastery of knowledge and the formation of competence. Mutual attendance and quality control of classes are maintained at a high level. Indicators of improving the personal competence of teaching staff show an increase in their interest in improving their skills and awareness in modern educational processes[3].

For the implementation of the educational process, teachers of the department created favorable psychological and pedagogical conditions in a spirit of respect for the various groups of undergraduates and their needs as a set of methods, methods of pedagogical interaction, which created a special relationship between teachers and undergraduates. This allows undergraduates to freely contact any teacher and head of the department for help with any suggestions. The "Job Fair" is held annually; the undergraduates meet with employers.

The harmonization of EP with foreign and Kazakh universities provides an opportunity to develop academic mobility, research internship and study of individual modules, as seen during the accreditation period, 16 undergraduates have passed: PRC (China Agricultural University), Slovakia (Slovak Agricultural University), Spain (Leiden Agricultural University), KazNU named after Al-Farabi.

During the development of EP 6M030100 –"Jurisprudence" undergraduates are informed about the criteria used for evaluation, examinations and other types of control. The main form of information is the issue of discipline programs for undergraduates (syllabus) on paper and available online. A common form of conducting a midterm control and final certification is an exam (written, oral, test). For the implementation of training in EP, the university has developed a system of internal monitoring of the quality of knowledge of undergraduates. Within the framework of this system, well-defined criteria and methods of assessment are used that have the properties of transparency, objectivity and fairness. In particular, methodologies for conducting monitoring procedures, measurement materials, knowledge assessment scales and internal standards for compliance have been developed[4, P.260].

a) Continuous analysis of the expected results in KazNAU is carried out by evaluating and discussing with the supervisors with undergraduates the results of the intermediate and final control through their

processing and analysis. Sources of information for monitoring are the results of observations, surveys, statistical information, and others. Students are participants in various monitoring groups organized by the Center for Monitoring the Quality of Education.

b) University resources, including the scientific library, are available to teachers and undergraduates participating in the EP. Undergraduates use computer classes, halls of electronic resources that are connected to the Internet and provided with modern computer equipment. The logistical, informational and library resources used to organize the learning process are sufficient and correspond to the requirements of the implemented EP.

c) To conduct the exam, examiners are appointed from among the leading professors, assistant professors with qualifications that correspond to the profile of this academic discipline, and, as a rule, have not conducted training sessions in this academic group. Academic achievements (knowledge, skills, abilities and competencies) of students are scored on a 100-point scale corresponding to the internationally accepted letter system with the corresponding digital equivalent on a 4-point scale in accordance with the Instruction for the organization and technology of intermediate certification.

d) in the implementation of OP 6M030100 –“Jurisprudence” adhere to the principle of individual approach to each student. Students have the right to choose their educational trajectory of learning with the help of advisors. Each module represents a meaningful and coherent set of teaching and learning.

e) When implementing OP 6M030100 –“Jurisprudence” use different criteria and assessment methods, which allow objectively and fairly to perform the achieved learning outcomes, to compare them with the expected learning outcomes and to make management decision. The effectiveness of the quality of knowledge is monitored through internal and external audits. Internal monitoring uses various evaluation criteria and methods that allow an objective and fair analysis of the learning outcomes achieved, compare them with the expected learning outcomes and make a management decision.

f) for the purpose of automation of educational process, and also for support of educational process on credit technology of training in KazNAU the automated information system “Platonus” is established. This system makes it possible to track all educational processes, such as the creation of academic calendars, the distribution of academic disciplines by teachers, the formation of individual curricula of undergraduates, the creation of cost-effective academic flows and testing [5, P.96].

The system clearly demonstrates the existence of an official application procedure master’s requests or appeals. Master student within the development of OP, regardless of the form, direction and level of training, has the right to Express their disagreement in the form of an appeal. To resolve disputes arising during the interim and final certification, an appeal Commission is created. The appeal Committee consists of the head of the Department and leading teachers. At the time of the examination sessions, the appeal Commission is approved, which works in accordance with the organizational and technological instructions for appeals, approved by the scientific and methodological Council of the University Undergraduates OP 6M030100 –“Jurisprudence” a Law degree familiar with the Code of honour of students of KazNAU. The staff of the Department “Law” and the University administration creates all conditions for undergraduates in the process of development of the OP complied with the code of honor, as well as formed an internal consciousness in terms of “zero tolerance” to any kind of dishonest relations in education, training, receiving grades. Undergraduates must comply with the code of honor in the University and fulfill their duties [6, P.61].

In the educational process to assess the knowledge and skills of students used a progressive method of control-rating control. Evaluation of educational achievements of undergraduates at each stage of control is carried out on a 100-point system. The current control is implemented through a weekly (15 weeks) cumulative system of assessments (points) in the cumulative statement on paper and electronic version, which ensures the availability and transparency of the process of assessing the knowledge of undergraduates. The order of the organization and carrying out the current and boundary control and final examinations is in detail regulated in the document of the Rule of the organization and carrying out the current control. All types of control are carried out according to the schedule of educational process according to the approved schedule. The final grade for the discipline is the sum of the weighted average scores for each type of control and is automatically entered in the summary summary statement and transcript.

Undergraduates OP 6M030100 –“Jurisprudence” take an active part in the reports of conferences, which presents the main results of master's theses. Department “Law” stimulates undergraduates in the search and disclosure of current scientific problems and actively implements this work in the educational and production process, which contributed to the improvement of the educational process, as the results of research were used by teachers in the development of educational and methodical complexes of disciplines and in the development of teaching aids.

Undergraduates are given the right to choose the theme of the master’s thesis. Master student can offer to study their topic with the necessary justification for its development. Master’s thesis should be carried out in accordance with the program of planned research of the University, included in the international, state or regional scientific, technical and sectoral programs, in the program of basic or applied research. Topics of master’s projects are developed by the Department taking into account the proposals of institutions, organizations and enterprises, the implementation of real scientific developments. The themes are updated annually [7, P.49].

In the conclusion we would like to stress, that the university has a web site <https://www.kaznu.kz>, which contains the authentication system, the system user management, system search, the results of learner achievement, a system of interactive communication (forum, chat, e-mail), organizational and academic information. In KazNU operates the Internet. Teaching staff and undergraduates have the opportunity to conduct lectures, workshops in classrooms with the latest interactive whiteboards; there is an electronic library and subscription full-text domestic and foreign databases. To meet the needs for scientific and information requests, users of the University have open on-line access to full-text multidisciplinary databases: “SpringerLink”, “ThomsonReuters ISI WebofKnowledge”, “Science”, “Elsevier”, to electronic versions of scientific journals in open access, which are in greatest demand among the readers of the University (on the platform of the Scientific electronic library), to Kazakhstan databases.

**З.К. Аюпова, Д.Ө. Құсайынов, Уинстон Наган**

**ҚАЗАҚСТАННЫҢ ЖОҒАРҒЫ ОҚУ ОРЫНДАРЫНДАҒЫ МАГИСТРАНТТАРДЫ  
ДАЙЫНДАУДАҒЫ ПОСТМОДЕРНИСТІК ПРОЦЕССТЕР МӘСЕЛЕЛЕРІНЕ  
(ҚҰАУ ҮЛГІСІНДЕ)**

**Аннотация.** ЖОО-ның магистранттары факультет пен университет әкімшілігі алдында білім алушылардың мүдделерін қорғайтын және қорғайтын студенттік өзін-өзі басқару органдары арқылы ЖОО-ны басқаруға қатысады: белсенді ғылыми, оқу және қоғамдық қызметі үшін білім алушыларды көтермелеу туралы ұсыныстар енгізеді; әлеуметтік-тұрғын үй мәселелерін шешуге қатысады; оқу процесін және ҒЗЖ жетілдіру жөнінде ұсыныстар енгізеді.; оқу және тәрбие жұмыстарын жүзеге асыратын университет әкімшілігімен, құрылымдық бөлімшелерінің басшыларымен өзара іс-қимыл жасайды; білім алушылар үшін әлеуметтік маңызды қоғамдық іс-шараларды ұйымдастырады. Білім алушылар ББ-ның басты тұтынушылары болып табылады, сондықтан осы бағдарламаны іске асыру барысында олардың мүдделері тұр. ББ жобалау негізінде студентке бағытталған тәсіл жатыр, ол оқытудың жеке траекториясы, академиялық ұтқырлық, құзыреттілік, Оқу нәтижелері, ECTS және т.б. сияқты санаттарды қолдануды көздейді. Біріншіден, магистрант өзінің білім беру траекториясын таңдауға құқылы. Аграрлық сектордың Юриспруденция саласындағы мамандар өкілдерімен бірге әзірленген оқу үрдісінде инновациялық технологияларды қолдануға бағытталған әдістемелік сипаттағы пәндер қарастырылған. Осыдан кейін магистрант ИПРМ жасайды. Екіншіден, магистрант on-line автоматтандырылған режимінде Platonus базасы арқылы өз үлгерімін тексеруге және талдауға мүмкіндігі бар.

**Түйін сөздері:** студенттік өзін-өзі басқару, магистратура, білімалушылар, оқу процесі, жоғарғы оқу орны әкімшілігі, оқу траекториясы, студентке орталықтанған әдіс, оқытудың индивидуальды траекториясы, академиялық ұтқырлық, әдістемелік бағыттағы пәндер.

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В ВУЗАХ КАЗАХСТАНА (НА ПРИМЕРЕ КАЗНАУ)**

**Аннотация.** Магистранты ВУЗов принимают активное участие в управлении вузом посредством органов студенческого самоуправления, представляющих и защищающих интересы обучающихся перед администрацией факультета и университета: вносят предложения о поощрениях обучающихся за активную научную, учебную и общественную деятельность; принимают участие в решении социально-жилищных проблем; вносят предложения по совершенствованию учебного процесса и научно-исследовательской работы; взаимодействуют с администрацией, руководителями структурных подразделений университета, осуществляющих учебную и воспитательную работу с обучающимися по различным аспектам жизнедеятельности; организуют социально-значимые общественные мероприятия для обучающихся. Основная идея студентоцентрированного обучения имеет целью формирования у магистрантов самостоятельной позиции в процессе обучения. Непрерывный анализ ожидаемых результатов проводится путем оценки и обсуждения научными руководителями с магистрантами результатов промежуточного и итогового контроля посредством их обработки и анализа. Магистрант имеет право выбрать свою образовательную траекторию обучения. Предусмотрены дисциплины методического характера направленные на применение инновационных технологий в учебном процессе, разработанные совместно с представителями специалистов в области юриспруденции. После этого магистрант составляет ИПРМ. Магистрант имеет возможность проверять и проводить анализ своей успеваемости через электронную базу вуза в автоматизированном режиме on-line.

**Ключевые слова:** студенческое самоуправление, магистратура, обучающиеся, учебный процесс, администрация вуза, учебная траектория, студенто-центрированный подход, индивидуальная траектория обучения, академическая мобильность, дисциплины методического характера.

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**IMPROVEMENT OF HUMAN RESOURCES DEVELOPMENT  
IN THE CONDITIONS OF INDUSTRIAL AND INNOVATIVE ECONOMY  
OF THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** In Kazakhstan, modernization is considered as a factor of economic growth to improve the socio-economic system of the society and improve the welfare of the people. The efficiency of economic development is largely determined by the accumulated and realized in the country human capital. Thus, according to the authors, in modern conditions, knowledge and qualifications are important factors of economic growth and social progress of society. The main wealth of any society is people, so the issue of studying the problems of the effectiveness of using the main productive forces that are realized in modern conditions in the form of human capital is relevant. As we see, in Kazakhstan, along with the above-mentioned types of modernization of steel, political modernization and spiritual modernization are carried out, as a necessary component of modernization of a new type, ensuring the success of the nation.

**Keywords:** human capital, modernization, policy, competitiveness, training, potential.

INTRODUCTION

Human capital as a product of production is the knowledge, skills and abilities that a person acquires in the process of training and work, and like any other type of capital, the ability to accumulate a rule has a tendency to accumulate human capital is longer than the process of accumulation of physical capital. The President of the Republic of Kazakhstan Nursultan Nazarbayev in his annual message emphasized the importance of the formation and development of human capital, which is the main national wealth for stable development and entry into the ranks of the world's competitive countries. Turning to history, one can learn that the concept of human capital originates from early times. The economic condition of our country is growing every day. And the contribution of innovation to this development cannot be overestimated.

MAIN PART

Clearly aware of the need to develop human capital through innovation, the importance of investing human capital, Head of State Nursultan Nazarbayev in his Address in 2010 emphasized that the main direction of the “Strategic Plan 2020” is active investment in the future to increase the competitiveness of human capital. At the same time, the Leader of the Nation indicated that the priority is the education of Kazakhstani people in new pharmacy and the development of Kazakhstan as a country with a developed, competitive human capital.

The president gives clear indicators of the potential of Kazakhstanis. There are five of them:

- 1) high-quality educational system;
- 2) the health of the nation;
- 3) the development of Kazakh culture;
- 4) revision of social packages of civil servants;
- 5) increased attention to citizens with disabilities.

The total national stock of human capital and the rate of its growth are extremely important for the level and rate of economic development of the country. First of all, because human capital determines the ability of a country's economy to perceive and use technical innovations. For rapid economic growth, investment in human capital must be accompanied by a true state development strategy, including the rational use of human capital. One of the means affecting the qualitative growth of human capital in society is education.

It is necessary to develop personnel to ensure the “digital production” of the MMC: analysts, IT-specialists, highly qualified management, working according to international standards.

The impact of the growth of different levels of education depends on the level of economic development of countries, and for developed countries (OECD members) the development of higher (tertiary) education is crucial for growth. It was also revealed that education provides additional indirect benefits, in particular, by stimulating investment in physical capital, the country's own technological development and adaptation of technologies developed in other countries.

In the context of growing competition in the global market of knowledge, technology, and labor resources, the role of the educational system is increasing. The educational system reforms currently underway in many countries are a response to the challenges of globalization and many dynamically developing economies, which already demonstrate achievements in the development of the knowledge economy, will in the near future increase competition in the field of human capital development. Under these conditions, national competitive advantages can be achieved not only on the basis of ongoing support for the educational sphere and concentration of funds, but also the creation of a system of measures aimed at improving the competitiveness of Kazakhstan's education.

Compared to investments in other different forms of capital, investments in human capital are the most profitable both from the point of view of the individual and from the point of view of the whole society.

The following are among the most important areas for the development of the innovation potential of universities and the enhancement of their role in the implementation of the State Program of Forced Industrial-Innovation:

- training of highly qualified specialists with knowledge in the field of high technologies, innovation, innovation management, research activities;
- participation of higher education institutions in the development of innovative projects and in conducting research;
- the creation on the basis of higher education institutions of innovative research centers as the most important structural units that form the innovation infrastructure;
- participation of higher educational institutions in the development of state programs for the innovative development of the economic sectors and the social sphere of the country;
- the participation of higher educational institutions in the professional development of managers and specialists of intellectual labor of leading enterprises and organizations of the country;
- the creation on the basis of higher educational institutions of research schools for the preparation of young scientists in specific scientific fields, etc.

The level of training of specialists is becoming one of the most important factors determining the degree of economic competitiveness and integration of the country into the world economy system. The quality of human capital will be one of the most important factors for economic development in the long run.

In conclusion, I would like to say that human capital must be viewed as capital generated as a result of investments and having a targeted use in social production or civil life, as well as a foundation of certain knowledge, skills, entrepreneurial opportunities, health and motivations, which are a major factor in public life. production and economic growth.

Based on the program of industrial-innovative development of the country, for 2015-2019 the following problems were found:

- lack and low qualification of personnel with technical and engineering skills and specialties on the basis of technical and vocational education;
- lack of scientific personnel in technical, engineering specialties and innovation management;
- insufficient harmonization of professional standards with educational standards;
- low level of knowledge of English language engineering personnel.

Table 1 - Methods for assessing human capital at the micro level

Classification feature	The evaluation methodologies considered (evaluation indicators)	Source, which presents the methodology
Structure of human capital	In the structure of human capital, two components are distinguished: the basic and developed human capital, which differ in the methods of formation, content and, as a consequence, in the methods of valuation used	Cretsky M.M. Human capital. L.: Izd-vo Leningr. University. 1991. Stukach FV, Lalova E.Yu. Formation and assessment of the basic human capital of agriculture // Omsk Scientific Bulletin. № 4-111 / 2012
Depreciation by type of asset	Considers human capital as an inseparable intangible asset of the second category, accordingly applying to its evaluation methods for valuing intangible assets	Leontiev BB, Mamadzhанov H.A. Management of intellectual property in the enterprise: monograph. Ekaterinburg, 2011
	It is connected with the estimation of depreciation of each type of investment in human capital multiplied by the time of their actual turnover	Tuguskina G.N. Basic approaches and methods for assessing human capital in business value // <a href="http://www.rusnauka.com/20_AND_2009/Economics/49162.doc.htm">http://www.rusnauka.com / 20_ AND_2009 / Economics /49162.doc.htm</a>
	Asset models; presume keeping records of capital costs (by analogy with fixed capital) and its depreciation	
Factors determining the cost of human capital	Income factor, expenditure factor, value added of human capital, return on investment	Noskova K.A. Assessment of the human capital of the i-th employee of the organization // Actual issues of economic sciences: Ufa: Summer, 2013. - P. 4-8.
Type of assessment: quantitative and qualitative	Methods are divided into monetary (monetary valuation) and non-monetary (qualitative assessment of human capital). One of the basic monetary methods is the model of net added value.	Milost F. Net value for the evaluation of human capital // European scientific journal. 2014. - No. 1
	Economic evaluation is the evaluation of the incomes generated by human capital (the individual); price estimation of human capital by the volume of investments; reflection of the sum value in the balance sheet of the firm (enterprise).	Tuguskina G.N. Basic approaches and methods for assessing human capital in business value // <a href="http://www.rusnauka.com/20_AND_2009/Economics/49162.doc.htm">http://www.rusnauka.com / 20_ AND_2009 / Economics /49162.doc.htm</a>
Type of costs incurred	Integral assessment of human capital includes both natural and value indicators of human capital assessment	Kastryulina Yu.M. Analysis of methods for estimating the value of human capital of economic entities // <a href="http://economics.ihbt.ifmo.ru/file/article/19.pdf">http://economics.ihbt.ifmo.ru/file/article/19.pdf</a>
Type of incomereceived	The method of assessing human capital based on the calculation of the costs of human capital; method for determining initial and replacement costs for staff; method of measuring the individual value of an employee, etc.	Krakovskaya I.N. Measurement and evaluation of the human capital of the organization: approaches and problems // Economic analysis: theory and practice. - 2008. - No. 19. - P. 41-50.

To solve problems with human resources, the program of industrial-innovative development of Kazakhstan is provided with the provision of economic sectors with highly qualified personnel, which is based on the work on reforming the system of personnel training. This reform will affect the creation of new educational programs developed by universities and colleges in cooperation with leading local and foreign partners, taking into account new technological processes. Considerable resources will be allocated to these universities and colleges and work on their modernization will be carried out. Separate strategic programs for the development of universities and colleges have been developed, the material and technical base has been strengthened, including teaching and laboratory equipment, new results-oriented approaches have been introduced in the management system and new financing mechanisms. Identified the main educational institutions for the preparation of innovative personnel.

The training of specialists for the innovation economy of Kazakhstan is carried out under conditions of global competition, within the framework of which fundamental changes are expected in the electronic, nuclear and electrical industries, the information and communication sector, machine-tool, ship-, auto and instrument making, construction, alternative energy, pharmaceutical and space industry, mining and smelting complex.



These changes will occur on the basis of the development of robotics, bio-nanotechnologies, artificial intelligence systems, information networks and integrated high-speed transport systems. The skills of network interaction, information exchange in the virtual space, design, synergetic approaches and system analysis come to the fore. At the same time, the content of higher technical education is now lagging behind today's realities, that is, the needs of the technosphere are in contradiction with the level of education provided. This gap leads to the release of quasi-engineers, who simply fear activity in manufacturing plants.

On instructions from the Head of State, active training is being conducted for the industrialization program through the Bolashak international program. Over the past four years, the share of technicians has grown by 20%. More than 3,000 engineering and technical specialists (40% of all Bolashak graduates), who realize their potential at the country's production sites, have been trained at the best universities in the world.

Thus, the education of citizens of the Republic of Kazakhstan acquires, and will acquire a high level. But, it is necessary to remember how to manage human resources. Many almost all organizations use the foreign method of management, but forget to take into account the fact that there are slightly different conditions in our country. It turns out that by providing one, they demand something completely different. Therefore, in order for the enterprise to work efficiently, it is necessary to properly organize the work of employees, while constantly monitoring the activities of employees, using various methods of personnel management.

This method is based on the use by the head of authority over subordinates, including the imposition of disciplinary actions. The method of coercion is a necessary method in the enterprise when it affects the negligent and unscrupulous subordinates, employees who violate official discipline and legality. At the same time, coercion forms the fear of possible punishment for the mistakes made (even unintentionally) and changes the motivation of work. Employees are beginning to develop a motivation for avoiding punishment, which leads to reinsurance, loss of initiative in work, excessive formalism, and fear of independent decision making. Therefore, in order not to unwittingly reduce the productivity of activities and the quality of the work of subordinates in the enterprise, the manager applies this method carefully, with due regard for the individual psychological characteristics of the workers.

This method is widely used at the enterprise Kazzinc-Remservis LLP. Its essence lies in the positive reinforcement of employee behavior based on an objective assessment of the results achieved by him in the activity. To make this method more effective, the management of the company strictly observes the following rules: individualization of remuneration; the success of the stimulus to the success achieved; publicity when announcing a promotion; increasing incentives due to achievements in work. In the work of the head of the company Kazzinc-Remservis LLP, seven methods of remuneration are used: 1) money (material remuneration); 2) approval of the behavior and activities of the subordinate; 3) promoting personal growth; 4) promotion through the service "ladder"; 5) the provision of independence in the work; consideration of the personal interests of the employee; 7) valuable gifts [4].

This method is based on the positive influence of professional personal qualities and managerial abilities in relation to subordinates. In this case, the identification of the subordinate with the leader, conscious or unconscious imitation of the style of activity and recognition of his authority as a leader are often observed. At the enterprise of Kazzinc-Remservis LLP, this method is a favorite both for managers and for subordinates, because the first persons of the enterprise always behave tactfully, restrainedly, constantly in work, have energetic behavior and infect others with their energy; have an impressive, solid appearance; independence of character; excellent rhetorical abilities; looking at them, in itself, there is a desire to be like them. It almost does not require any effort on both sides [5].

Experience in business development both in Kazakhstan and abroad has shown that the effectiveness of the human relations system in the labor process is a powerful reserve for increasing productivity and increasing the overall efficiency of production and marketing.

In connection with the transition of many enterprises to new forms of ownership, there are serious problems in the field of psychology and organization of management in general and personnel in particular, in front of senior and middle managers who have been nominated from among workers and specialists, especially the management team.

The main causes of failures in the enterprise in the initial stages of its existence, as a rule, are: lack of raw materials, lack of relations with suppliers and consumers, uncompetitive products or price, staff turnover and other obvious reasons. However, there is another significant reason - the crisis of management based on traditional errors: when implementing changes within an organization, managers often forget about changes in the psychology of an employee, and the need to adjust the personnel management system. It is psychological barriers that stand in the way of progressive transformations in organizations, generate staff turnover and an unhealthy psychological atmosphere in the team, provoking conflicts and duties with low quality indicators; the power of any rank automatically gives the necessary weight and authority to the person occupying a certain post, and also gives him certain skills and abilities to manage [6,7]. It must be remembered that the presence in the enterprise of highly qualified employees does not guarantee the success of the company. Indeed, the success of the company in terms of development will depend on the management style of the organization as a whole.

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### **ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ ИНДУСТРИЯЛЫҚ-ИННОВАЦИЯЛЫҚ ЭКОНОМИКАСЫ ЖАҒДАЙЫНДА АДАМ РЕСУРСТАРЫН ДАМЫТУДЫ ЖЕТІЛДІРУ**

**Аннотация.** Қазақстанда қоғамның әлеуметтік-экономикалық жүйесін жетілдіру және халықтың әлауқатын жақсарту үшін жаңғырту экономикалық өсу факторы ретінде қарастырылады. Экономикалық дамудың тиімділігі негізінен елдегі адами капиталға жинақталған және жүзеге асырылатын болады. Мәселен, авторлардың пікірі бойынша, қазіргі жағдайда, білімі мен біліктілігі - экономикалық өсімнің және қоғамның әлеуметтік прогрессінің маңызды факторлары. Кез-келген қоғамның басты байлығы - адамдар, сондықтан адами капитал түріндегі заманауи жағдайларда жүзеге асырылатын негізгі өндірістік күштерді пайдаланудың тиімділігіне қатысты мәселелерді зерттеу мәселесі маңызды. Қазақстанда жоғарыда айтылғандай болатын жаңғырту, саяси модернизациялау және рухани жаңғырту сияқты жаңа типті жаңғыртудың қажетті компоненті ретінде ұлттың табысын қамтамасыз ететін жоғарыда айтылған түрлерімен қатар жүзеге асырылады.

**Түйін сөздер:** адам капиталы, жаңғырту, саясат, бәсекеге қабілеттілік, оқыту, әлеует.

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### **СОВЕРШЕНСТВОВАНИЕ РАЗВИТИЯ ЧЕЛОВЕЧЕСКИХ РЕСУРСОВ В УСЛОВИЯХ ИНДУСТРИАЛЬНО-ИННОВАЦИОННОЙ ЭКОНОМИКИ РЕСПУБЛИКИ КАЗАХСТАН**

**Аннотация.** В Казахстане модернизация рассматривается как фактор экономического роста для совершенствования социально-экономической системы общества и повышения благосостояния народа. Эффективность развития экономики во многом определяется накопленным и реализованным в стране человеческим капиталом. Так, по мнению авторов, в современных условиях знания и квалификация являются важными факторами экономического роста и социального прогресса общества. Главное богатство любого общества составляют люди, поэтому вопрос изучения проблем эффективности использования основных производительных сил, реализующихся в современных условиях в форме человеческого капитала, является актуальным. Как видим, в Казахстане наряду с выше названными видами модернизации стали осуществляются политическая модернизация и духовная модернизация, как необходимый компонент модернизации нового типа, обеспечивающий успех нации.

**Ключевые слова:** человеческий капитал, модернизация, политика, конкурентоспособность, подготовка, потенциал.

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## FINANCIAL MECHANISM FOR SUPPORTING ENTREPRENEURS AND HEDGING THEIR RISKS

**Abstract.** The scientific article is devoted to such an important aspect as financial incentives for entrepreneurial activity and the search for new methods to stimulate it. At the moment, this issue has a wide meaning for both beginners and active entrepreneurs. The authors consider financial methods and forms of business stimulation, and also gives practical recommendations on their use. The purpose of entrepreneurship is to extract income through the production and supply to the market of goods, works or services, as well as to public recognition, awareness of its importance as an individual. However, the existing risks in the market of entrepreneurs are forced to take measures to reduce them. The company has the ability to reduce their own risk by attracting common problems to partners. In such cases, joint stock companies, financial and industrial groups can be created; enterprises can acquire shares or exchange them among themselves, enter into various consortia, associations, concerns.

**Keywords:** finance, mechanism, support, entrepreneurs, risks, hedging.

### INTRODUCTION

In the general complex of problems of modern reforming the world economy, an important role is played by the process of formation and development of entrepreneurial activity. Entrepreneurship creates coordination mechanisms, development strategy development through the market and competition, links between economic entities.

An exit from the economic crisis and the formation of a long-term potential for dynamic economic growth are impossible without activating the role of entrepreneurship. Now it is noted by many politicians, economists and practitioners. Not enough attention is paid to the problem of enhancing the role of entrepreneurship both in theory and in practice.

Entrepreneurship is a special form of economic activity based on an innovative, independent approach to the production and supply to the market of goods that bring the entrepreneur income and an awareness of his importance as an individual. The basis of the effect of entrepreneurship is innovative, initiative activity of a person who mobilizes all his strength, purposefully using all the possibilities to achieve the set goal and bearing full responsibility for his actions.

The main subject of entrepreneurial activity is an entrepreneur who interacts with other participants in this process - consumers, government, partners, employees.

### MAIN PART

International experience has shown that the development of entrepreneurship is possible only if there is a focused state policy on small business, based on the need to develop this sector of the economy and understanding the vulnerability of small enterprises compared to large ones, due to the very nature of their operation.

An important role in the development of entrepreneurship is played by the support of the state and the corresponding institutional structures created by it, as well as the existing credit and investment mechanism in the country.

The policy of supporting small business in Europe is carried out through the activities of states and through special programs that are implemented under the auspices of the European Union. Financing of small business support activities is carried out from the EU Structural Funds, such as the Regional Development Fund and the Social Fund.

In countries with developed market economies, state support for entrepreneurship relies on relevant legislation. Two forms of state support spread:

- legislative establishment of long-term small business development programs;
- inclusion of small business as an integral part of state economic and social programs.

The formation and development of entrepreneurial activity is associated with a radical transformation of the existing socio-economic relations on the way to the market, the formation of a new elite social stratum - entrepreneurs, educated people, armed with the latest theoretical knowledge and scientific methods in the field of economic and social management of an enterprise [1].

At the present stage, enterprises engaged in entrepreneurial activity have received many degrees of economic freedom in choosing both its directions and rules of reference. For the development of entrepreneurship, private property is an indispensable condition and, despite the fact that recently the tendencies of stabilization and recovery of the economy against the background of a favorable global situation in energy prices have created a new environment for the functioning of all economic entities involved in commercial activities, for the development of entrepreneurship conditions.

These conditions include the stability of state economic and social policies, a preferential tax regime, a developed infrastructure to support entrepreneurship, the existence of an effective system for protecting intellectual property, the formation of flexible market mechanisms for increasing business activity of entrepreneurs, the possibility of free access to foreign markets, the creation of credit systems accessible to entrepreneurs, provide the opportunity to acquire the necessary means of production, raw materials and kit Lying Products [2].

The most burdensome for the state budget and at the same time the most attractive for entrepreneurship is financial and credit support, including preferential loans, provision of guarantees for commercial bank loans, etc. In accordance with legislation, financial and credit support for entrepreneurship is mainly aimed at stimulating small businesses.

There are the following forms of state financial and credit support for small businesses:

- Subventions and subsidies to individuals and legal entities;
- budget loans, loans, loans;
- government guarantees.

The most important direction in creating a favorable business environment is the improvement of the financial and banking system. As an effective measure is the need to:

- adoption by the National Bank of provisions that improve and protect the settlement system [3];
- introduction of periodic re-registration of all business structures so as to stabilize the economic situation to restrict the activities of small enterprises and at the same time fully encourage and support production activities aimed at saturating the market with goods and services;

One of the factors limiting the possibilities of entrepreneurs is the difficulty of obtaining financing. Therefore, one of the goals of supporting entrepreneurship, especially small business, is to create conditions for cheaper credit resources allocated for the development of these enterprises, facilitating the involvement of private investors in the development of small enterprises, the formation of groups of banks, financial companies, and investment funds working with business entities.

Depending on the type of factors taken into account, it is necessary to use internal or external mechanisms for neutralizing them when managing risks. At the same time, the main role should belong to internal mechanisms for neutralizing risks, elected and carried out by the business entity as part of its activities.

External risk neutralization mechanisms provide for various types of insurance (full redundancy), essentially representing the transfer of certain risks that are very difficult (if at all possible) to manage, from the insurer to the insured (insurance company).

Risk neutralization mechanisms include in their arsenal risk management tools, techniques and methods for reducing risk and compensating for it. For the practice of financial management, the most typical means of risk resolution and methods of reducing its level; for production management - risk compensation methods. By type of impact, compensation methods are referred to as proactive methods, which should create conditions that exclude the appearance of causes and risk factors.

Risk compensation methods include:

Strategic planning related to the most effective methods. Forecasting the economic situation. Active targeted marketing. Monitoring the socio-economic and regulatory environment. Creating a system of reserves, close to insurance, but concentrated within the enterprise. Attraction of external resources. In the case when the firm is not able to cover all the losses of internal resources, some of them can be covered with the use of credit resources.

In addition to the above risk management methods, other methods can be used:

Ensuring compensation for possible financial losses due to the risks envisaged by the system of penalties. Reducing the list of force majeure circumstances in contracts with partners. Receiving an additional level of risk premium from partners. The listed risk compensation methods, as a rule, require extensive preliminary analytical work, the effectiveness and efficiency of their application depends on the completeness and thoroughness.

Risk retention - leaving the risk to the business entity, on its responsibility; transferring risk to someone else, such as an insurance company; search for guarantors who are interested in unique services, political support, charity, etc.

Risk avoidance (risk aversion). This direction of neutralizing financial risks is the most radical. Avoidance of risk deprives the company of additional sources of profit, and therefore adversely affects the pace of its economic development and the efficiency of its own capital. In addition, avoiding financial risk may in some cases be simply impossible, and avoiding one type of risk may lead to the emergence of others. Therefore, as a rule, this tool is applicable only for very serious and large risks. There are several common hedging methods presented in table 1.

Table 1 - Risk hedging methods

№	Hedging methods	Description of methods
1	The classic method.	Hedging by opening opposing orders to buy and sell a single asset. An investor protects his funds if the price trend moves in an undesirable direction.
2	Full and partial hedging.	When a trader decides to save on insurance protection, the hedge is undertaken only in respect of a part of the transaction volume. Less money goes to pay for an option or futures. This method is optimal with a minimum likelihood of adverse price changes. In the case when the risk of such a change is maximum, it is necessary to hedge the risks in full.
3	Anticipatory method.	Having seen the acceptable price of the selected asset on the market, the trader further wants to buy it and buys a futures contract at a fixed price. After a certain period of time, he becomes the owner of this asset.
4	Selective method.	It is used by the investor in insuring precisely that part of his assets, which he does not wish to risk. This method allows you to build a flexible hedge strategy, choosing the optimal proportions and time intervals, to obtain an acceptable ratio of return / risk. The investor gets the maximum profit with minimal risk.
5	Cross method.	It implies an operation with a futures contract not on the underlying asset of the real market, but on another instrument. An example would be the sale of oil and at the same time the purchase of an option to purchase gold, after analyzing the current economic situation.
6	Interindustry method.	This is when the open positions on the assets of another segment are added to the assets of a certain segment in the investor's portfolio. Changing the price of the first will affect the price of the second.

The main methods of risk reduction are:

Diversification; risk premium, i.e. various premiums, acting in the form of "risk pay"; the acquisition of additional information for a more accurate forecast of business results; limiting; risk sharing; self-insurance; hedging

Risk distribution techniques are management tools through the distribution of a common risk by combining (with varying degrees of integration) with other participants interested in the success of a common cause. The company has the ability to reduce their own risk by attracting common problems to partners. In such cases, joint stock companies, financial and industrial groups can be created; enterprises can acquire shares or exchange them among themselves, enter into various consortia, associations, concerns.

In the modern practice of risk management, the following main directions of risk transfer have spread:

1. Transfer of risks by concluding a factoring agreement (factoring is a transaction of sale of receivables at a reduced price to a specialized factor company in order to receive funds).

2. Transfer of risks by forfeiting (forfeiting - export crediting by buying without paying the seller commercial bills of exchange, other debt claims on foreign trade transactions; a form of transforming a commercial loan into a bank).

3. Transfer of risk by entering into a contract of guarantee or the provision of a guarantee:

a) Surety.

b) Warranty (type of guarantor - bank guarantee).

4. Transfer of risks to suppliers of raw materials and materials.

5. Transfer of risk to the participants of the investment project.

Self insurance (domestic insurance). The mechanism of this direction of neutralization of financial risks is based on the reservation by the enterprise of a part of financial resources, which makes it possible to overcome the negative financial consequences of those financial transactions for which these risks are not related to the actions of counterparties. The main forms of this direction of neutralizing financial risks are: Formation of a reserve (insurance) fund of an enterprise. Formation of targeted reserve funds. Formation of reserve amounts of financial resources in the system of budgets brought to various centers of responsibility. Formation of a system of insurance stocks of material and financial resources for individual elements of the current assets of the enterprise. Using self-insurance as a risk reduction technique, it must be borne in mind that insurance reserves in all their forms, although they allow you to quickly recover the financial losses suffered by the entrepreneur, but they “freeze” a sufficiently tangible amount of funds, resulting in reduced efficiency of equity capital its dependence on external sources of financing. The most complex and dangerous in its financial consequences risks that cannot be neutralized by its internal mechanisms are subject to insurance.

Diversification is the distribution of investments between various activities whose results are not directly related. An enterprise, incurring losses in one type of activity, can make a profit at the expense of another field of activity. Diversification allows to increase the sustainability of the enterprise to changes in the business environment. Investment diversification presupposes the preference of several projects for a relatively small capital intensity over programs consisting of a single investment project that, having absorbed virtually all of the company's reserves, will not leave room for maneuver. The use of this mechanism is limited in the enterprise.

Insurance is the transfer of certain risks to the insurance company. Property insurance may have the following forms: insurance of contractual construction risk, equipment insurance, cargo insurance, etc. Accident insurance includes: general civil liability insurance and professional liability insurance. In the process of insurance, the company is provided with insurance protection for all major types of its financial risks. Financial risk insurance is one of the most common ways to reduce its degree. Financial risks that are most dangerous in their consequences are to be neutralized by insurance.

Such type of insurance is widely used as hedging - insurance of the price of goods against the risk of either an undesirable fall for the manufacturer or an increase unprofitable for the consumer. However, it requires certain costs for the payment of commission to brokers, premiums on options, etc. Nevertheless, the level of these costs is much lower than the level of costs for external insurance of financial risks.

## CONCLUSION

Thus, hedging is used by an entrepreneurial firm to insure a projected income level by transferring risk to the other party.

Depending on what types of production securities are used, there are several types of hedging financial risks:

1. Hedging with the use of options, which allows to neutralize the financial risks of transactions with securities, with currency, real assets.

2. Hedging using futures contracts. It characterizes the mechanism of neutralizing financial risks on commodity or stock exchange operations by conducting opposite transactions with various types of contracts.

3. Hedging using the swap. It characterizes the mechanism of neutralization of financial risks on operations with currency, securities, debt financial obligations of an enterprise.

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### **КӘСІПОРЫНДЫ ҚОЛДАУ ЖӘНЕ ТӘУЕКЕЛДЕРДІ АЛЫП ТАСТАУҒА АРНАЛҒАН ҚАРЖЫЛЫҚ МЕХАНИЗМ**

**Аннотация.** Ғылыми мақала кәсіпкерлік қызметті қаржылық ынталандыру және оны ынталандырудың жана әдістерін іздеу сияқты маңызды аспектілерге арналған. Қазіргі уақытта бұл мәселе жанадан бастағандарға да, белсенді кәсіпкерлерге де үлкен мән береді. Авторлар бизнесті ынталандырудың қаржылық әдістерін және нысандарын қарастырады, сондай-ақ оларды пайдалану бойынша практикалық ұсыныстар береді. Кәсіпкерліктің мақсаты тауарларды, жұмыстарды немесе қызмет көрсетулерді нарыққа шығару, сондай-ақ жұртшылықты тану, жеке тұлға ретінде оның маңыздылығын түсіну арқылы табыс алу болып табылады. Алайда, кәсіпкерлер нарығындағы бар тәуекелдер оларды азайту жөнінде шаралар қабылдауға мәжбүр. Компания өз әріптестеріне ортақ проблемаларды тарту арқылы өз тәуекелдерін төмендетуге қабілетті. Мұндай жағдайларда акционерлік қоғамдар, қаржылық және өндірістік топтар құрылуы мүмкін; кәсіпорындар акцияларды сатып алады немесе оларды өзара бөлісе алады, түрлі консорциумдарға, қауымдастықтарға, мүдделерге қосыла алады.

**Түйін сөздер:** қаржы, механизм, қолдау, кәсіпкерлер, тәуекелдер, хеджирлеу.

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### **ФИНАНСОВЫЙ МЕХАНИЗМ ПО ПОДДЕРЖКИ ПРЕДПРИНИМАТЕЛЕЙ И ХЕДЖИРОВАНИЕ ИХ РИСКОВ**

**Аннотация.** Научная статья посвящена такому важному аспекту, как финансовое стимулирование предпринимательской деятельности и поиск новых методов ее стимулирования. На данный момент этот вопрос имеет широкое значение как для начинающих, так и активно действующих предпринимателей. Авторы рассматривают финансовые методы и формы стимуляции бизнеса, а также дает практические рекомендации по их применению. Цель предпринимательства сводится к извлечению дохода через производство и поставку на рынок товаров, работ или услуг, а также к общественному признанию, осознанию своей значимости как личности. Однако, существующие риски на рынке предпринимателей вынуждают предпринимать меры по их снижению. Предприятие имеет возможность уменьшить уровень собственного риска, привлекая к решению общих проблем партнеров. В таких случаях могут создаваться акционерные общества, финансово-промышленные группы; предприятия могут приобретать акции или обмениваться ими между собой, вступать в различные консорциумы, ассоциации, концерны.

**Ключевые слова:** финансы, механизм, поддержка, предприниматели, риски, хеджирование.



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## ANALYSIS OF THE REAL SECTOR OF THE ECONOMY OF THE REPUBLIC OF KAZAKHSTAN AND ITS DEVELOPMENT PROSPECTS

**Abstract.** The real sector of the economy is the industrial production sector of the Republic, which includes a large number of enterprises of various sectors of economic development of the Republic of Kazakhstan. Analyze the real sector of the economy of the Republic of Kazakhstan and consider the prospects for its development. The article presents an attempt to describe and classify these enterprises, to determine their role in the development of the economy. In this article the authors analyzes the features of the development of the real sector of the economy of the Republic of Kazakhstan in the long term-from 1996 to 2017. The article also provides an analysis of the perspective directions of development of the real sector of the economy, as well as the main content and limitations of each of them. When conducting foresight studies, a combination of 10–15 forecasting methods is used. For visual systematization of Foresight methods by a specialist of the University of Manchester R. Popper, a scheme was developed, called the "Foresight-rhombus".

**Key words:** Economy, real sector, GDP, development, budget, economic growth.

**Theoretical and methodological approaches.** The real economy is the main source of economic growth in the Republic of Kazakhstan. The possibility of general socio-economic progress largely depends on how rationally organized the real sector of the economy is, how effectively its subjects function and how adequately they react to the regulatory signals of the state. In modern conditions and in the light of the requirements of economic and social modernization, issues of improving the management mechanisms of the real sector of the economy are of particular relevance and require special research efforts.

The real sector of the economy is a set of enterprises and other economic entities operating in the sectors of material production, which produce products, carry out work and provide services of production and economic nature. As a result of their activities, enterprises make a profit, from which taxes are paid and a regional and state budget is formed [1].

The real sector includes industry, agriculture, construction, transport and communications. It also includes inter-industry production and economic complexes, for example, the agro-industrial complex, the military-industrial (MIC), machine-building, fuel and energy (FEC), chemical-forest complex and others.

Over the past three decades, Kazakhstani society has been undergoing complex, dynamically proceeding social and economic transformations.

With the acquisition of sovereignty as a result of the collapse of the USSR in December 1991, Kazakhstan switched to fundamental changes in the real economy.

The enterprises of the real sector of the economy of Kazakhstan, for many years, developing in the conditions of a practical lack of competition and market mechanisms, with a focus on subsidized development mechanisms, were mostly not ready for effective activity in a market economy.

In the course of the implementation of economic reforms, such shortcomings in the activities of enterprises were particularly acute: inefficient use of resources, the slow introduction of modern technologies and science and technology into production processes, the low level of corporate culture and labor discipline, etc.

**The purpose and objectives of the article.** Analyze the real sector of the economy of the Republic of Kazakhstan and consider the prospects for its development.

**Statement of the main material of the study.** During the 90s, the real sector of the economy developed unstable. During the transition period, which was accompanied by the rupture of economic relations, the strengthening of financial problems until 1996 there remained a negative trend of decline in industrial production. From the second half of the 90s of the 20th century, industrial production began to increase, which led to a reduction in the decline compared with 1991 (Figure 1) [2].

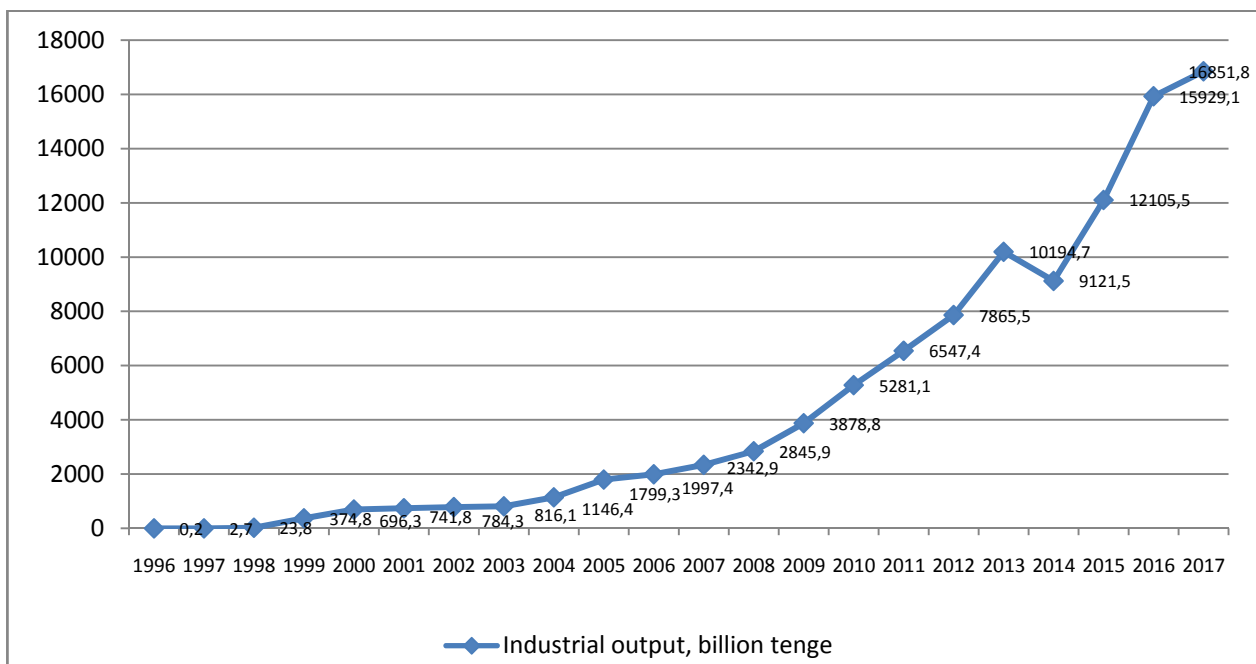


Figure 1 – Dynamics of industrial production in the Republic of Kazakhstan for 1996-2017

In 2017, Kazakhstan's economy showed relatively high growth rates. According to the Committee on Statistics, the gross domestic product at the end of 2017 amounted to \$ 203.5 billion, which is 5% higher than in 2016 at comparable prices.

Thus, for the first time, the main contribution to GDP growth was achieved not only at the expense of the extractive industries. The overall real GDP growth in 2017 compared to 2013 is 22.6%, compared to the planned 15% by 2020. In the structure of GDP, the share of production of goods amounted to 40.7%, services - 52.9%.

It should be noted that the sectoral structure of industrial production over the years of independence has undergone significant changes. If in 1996, of the total industrial production of the republic, 83.7% accounted for the manufacturing industry, 10.5% for the mining industry and 5.7% for the production and distribution of electricity, gas and water, then in 2017 the share of the processing industry accounted for 32.3%, mining - 60.8%, the production and distribution of electricity, gas, water - 6.9% (Figure 2) [3].

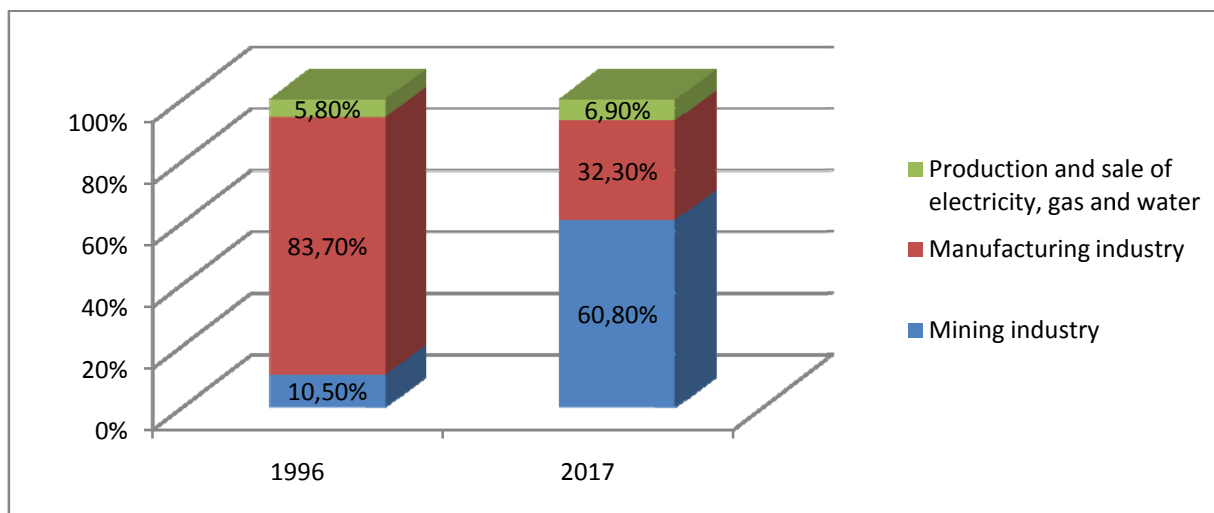


Figure 2 – Sectoral structure of industrial production of the Republic of Kazakhstan in 1996 and in 2017

A significant increase in the share of the mining sector is due to the enhanced development of the republic’s oil and gas and uranium reserves in response to growing demand in world markets.

A prerequisite for economic growth and the achievement of a strong competitive position of Kazakhstan in the global economy is the modernization and innovative development of the sectors of the real sector.

Since 2010, Kazakhstan has been implementing the State Program of Forced Industrial-Innovative Development, designed for the period up to 2020. The main objectives of the launch of the innovative (“new”) industrialization program were the centralization of the management of industrial investment projects and increasing the coordination of actions of individual ministries and departments to ensure the overall growth of the economy.

According to the results of 7 years of implementation, the government program on accelerated industrial-innovative development shows positive changes in the country's economy. Since 2010, there has been a trend of outpacing growth in the manufacturing sector compared with the mining sector. So, by the end of 2016, the growth of the manufacturing industry was 19.4% compared to 2012, mining - 15.6%. At the same time, in 2017 compared to the same period of 2016, there were negative changes - the growth rate in the mining industry is higher than in the manufacturing industry (Figure 3) [4].

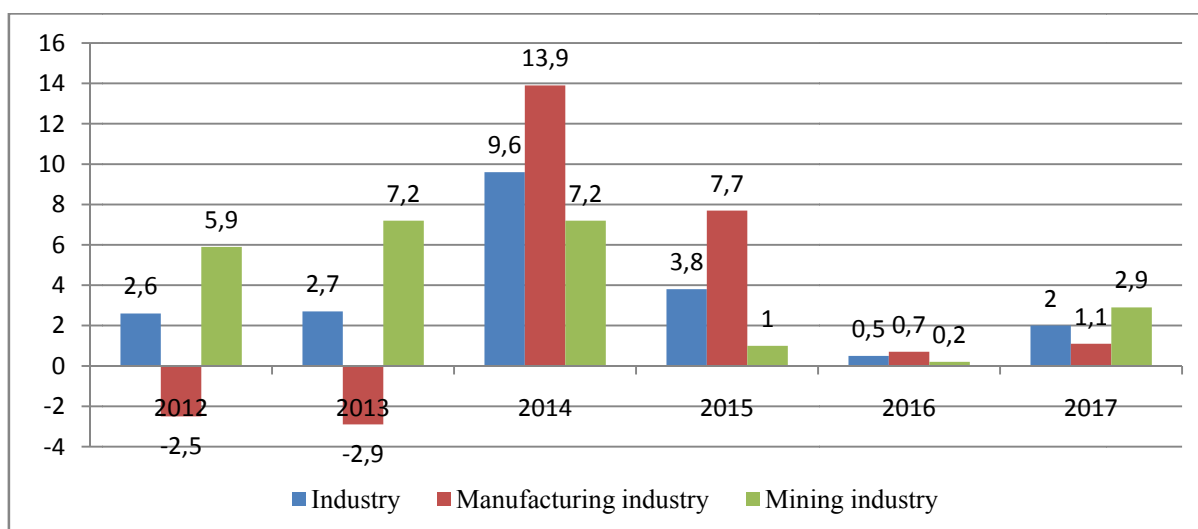


Figure 3 – Growth of IFI of Kazakhstan industry for 2012-2017

The decline in the growth rate of the manufacturing industry was affected by the fact that almost 40% of the domestic manufacturing industry is the production of industrial metals: copper, steel, aluminum and zinc. The demand for them in the world market is declining due to a slowdown in demand for these products from the current workshop in the world - China. As a result, the reduction of metal prices by 10–20% and a small reduction in production.

Thus, despite a number of positive trends in the development of the sectors of the real sector of the economy of Kazakhstan, the structural deformation of the economy remains, which is characterized by unevenness and disproportions in the development of the mining and processing industries.

It has to be noted that although the raw material orientation of the export policy of Kazakhstan is quite effective in ensuring high indicators of the country's economic growth at the present time with high energy prices, in the long term it is disastrous. The natural resource potential as a whole and especially the reserves of fuel and energy resources are not renewable and they are far from endless [5].

In addition, the majority of enterprises in the real sector of the economy of Kazakhstan have not yet been able to achieve compliance with international standards in terms of the optimal price-quality ratio.

Therefore, questions about the development of new and modernization of existing tools and mechanisms for introducing innovative technologies into industrial production, about increasing the innovation activity of organizations, about state support for the high-tech sector of the economy, attracting financial resources, and promoting high-tech products of Kazakhstan to the world market are highly relevant.

To effectively manage the innovative development of the real sector, it is necessary to have a set of adequate mechanisms. The mechanism for managing the innovative development of the real sector of the economy is a combination of means and methods by which the state influences the entire economic potential of industries, controlled external factors, taking into account the current situation, with a view to their constant and sustainable development. Such an approach implies the integrated functioning of all elements of the control mechanism, which include:

- The system of forecasting and program documents reflecting the results of the functioning of the national economic system;
- Forms of management - organizational and management structures;
- Management methods - tools, including methods, levers, technology processes to achieve the goal [6].

Under market conditions, a number of features appear, among which the need for interaction between state and market regulation is very important. In the management system, it is necessary to strive to optimize a combination of administrative, economic and socio-moral methods. It is now generally accepted that the market cannot solve all the problems, and the more imperfect the control mechanism, the more important the use of the entire set of methods.

The management mechanism of the real sector of the economy includes planning, organizational structures and management methods, as well as motivation. In the process of transformation, the priority is to improve the planning system at all hierarchical levels.

Currently, there are various institutions in the Republic of Kazakhstan and programs have been developed to support the modernization of enterprises in the real sector. A variety of government incentive instruments are applied, including tax breaks and grants. However, until now, the mechanisms for coordinating initiatives and their practical implementation have not been worked out sufficiently. The measures taken are aimed more at strengthening control over state-owned enterprises, although there are initiatives to optimize tax breaks, the use of public procurement mechanisms and coordination. For example, the program of supporting enterprises in the real sector “Productivity - 2020” provides for a whole range of tools - innovative grants, reimbursement of expenses for attracting highly qualified foreign engineering and technical personnel, design engineering organizations, for purchasing licenses, technical documentation, technologies, long-term leasing of industrial equipment with preferential rate [7].

Recent changes in legislation provide improved forecasting mechanisms for identifying priorities and providing a sound basis for government intervention. At the same time, modern economic conditions require a qualitative improvement in the methodology of scientific and technological forecasting for the long term.

Technological roadmaps, sectorial and regional forecasts should be important links in the integrated forecasting system. However, it is not enough just to accumulate various forecasts - their methodology must meet certain standards. The course on industrial-innovative development requires an unconventional approach for domestic practice, which allows defining “breakthrough” areas in which the Republic of Kazakhstan can achieve a real socio-economic effect [8].

Among the management tools that synthesize the positive aspects of a planned and market economy are the foresight technologies that are widely used in many developed and developing countries in the formulation of science and technology policy.

Foresight studies serve as a basis for selecting priorities implemented in the framework of large national and international programs of scientific, technical and innovative development, on their basis plans for technological modernization of large companies are formed, and prospects for the technological development of individual sectors of the economy are discussed. Today, Foresight has evolved from a tool aimed at identifying technological trends into an independent, actively developing scientific discipline, covering a wide range of research methods.

The emergence of new, more sophisticated scientific and technical policy tools that take into account the interests of various players (stakeholders), and the changing nature of innovation itself, associated with the increasing role of non-technological innovations, the spread of open innovation models, etc., put forward a non-trivial research agenda, tasks related to the identification of features and limits of application of individual policy instruments, the development of approaches to assessing their potential impact on the sphere of science and innovation, the economy and society.

When conducting foresight studies, a combination of 10–15 forecasting methods is used. For visual systematization of Foresight methods by R. Popper, a specialist at the University of Manchester, a scheme was developed, called the “Foresight-rhombus” (Figure 4).

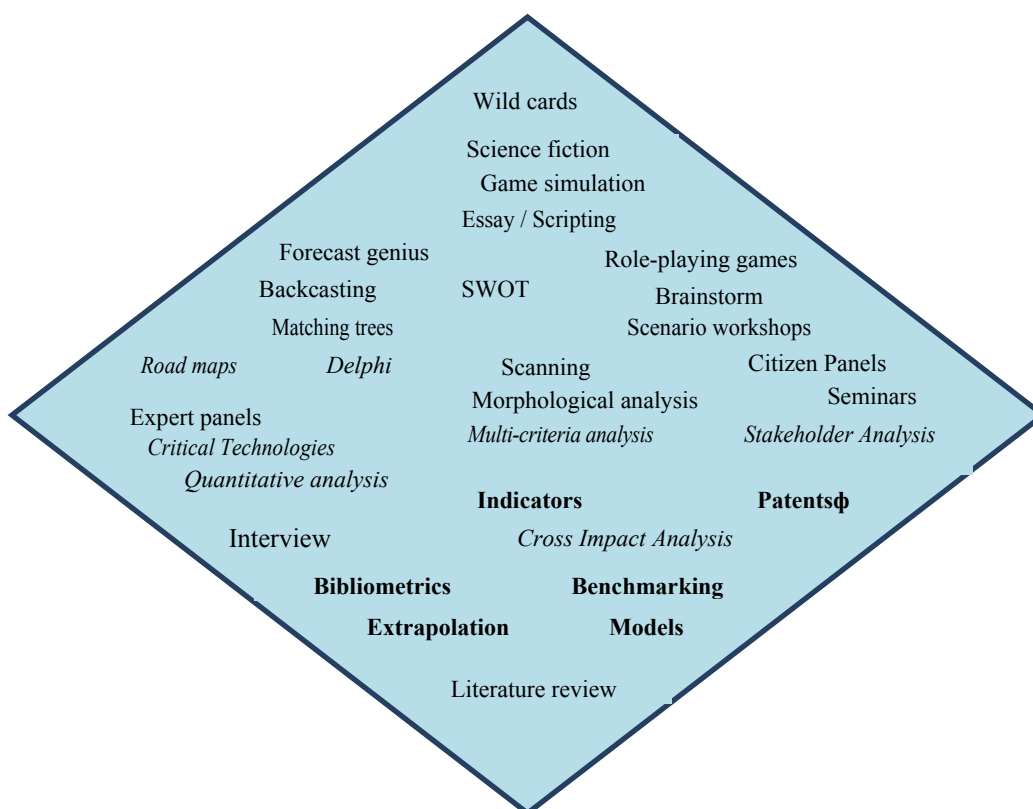


Figure 4 – Foresight methods rhombus

The stage of conducting foresight studies is determined by an algorithm that can be represented as a chain: the goal - the tasks - the state - the alternatives - the execution.

According to the results of foresight projects, road maps are created - a structured set of indicators and tasks, the achievement of which leads to the achievement of a common goal and allows you to track

the implementation of program activities. It contains a set of activities whose implementation results ensure achievement of target indicators, clearly defines the responsible executors, deadlines, describes the risks associated with the implementation of the proposed activities, and suggests a set of measures to respond to the implementation of a particular risk [1].

Road maps also determine:

- The range of possible participants, parties interested in the implementation of this roadmap (beneficiaries);
- Resources that can be attracted to solve the tasks defined by the roadmap, and restrictions on their involvement and / or use;
- The role of state institutions in the implementation of the roadmap;
- The order of coordination of efforts of all participants in the process.

For the Republic of Kazakhstan, foresight is a relatively new management tool. The first, unique in its content and tasks, the national scientific and technological foresight was conducted by JSC "National Agency for Technological Development" in the period 2010-2011. in order to determine the strategic directions of development of Kazakhstan until 2020. The country does not yet have a sustainable practice of developing long-term priorities in market conditions at all levels of government. When conducting foresight studies, the methodology provided by the leading institute in the field of planning and forecasting of South Korea KISTEP (Korean Institute of Scientific Technological Planning and Evaluation) was used [3].

In order to concentrate the available resources on the strategic priorities of the republic, within the identified priority technology areas, technologies were identified that will give impetus to the further development of industries and allow them to be brought to a new technological level. These technologies, after passing through technological analysis for their economic and strategic attractiveness and feasibility for Kazakhstan, were included in the list of technologies critical for the country.

Currently, foresight studies have been completed, 75 critical technologies have been identified in 7 key industries. A continuation of the work done was the development in 2012 of 10 pilot target technological development programs for the country's critical technologies, in the development of which experts from concerned business structures and scientific institutions took part. At the same time, the developed programs were discussed with the participation of a wide range of experts in the context of technological areas, as well as representatives of relevant government agencies.

In 2018, it is planned to hold another technological foresight, which will determine the horizons of innovation until 2030.

**Conclusions and prospects for further development.** In conclusion, it should be noted that for a full-fledged entry of the Republic of Kazakhstan into the number of developed, competitive countries of the world, it is necessary to give a new impetus to the development of such a specific instrument of state regulation as a foresight. It is necessary to create favorable opportunities for the practical transformation of Foresight into a tool of science, technology and innovation policy oriented towards a long-term perspective.

Enterprises are provided with service support. Today, companies involved in large projects are subject to strict requirements regarding the quality of their products, which must meet international standards. In this regard, the agency reimburses part of the costs of product certification and quality management systems in accordance with international standards under the program "Productivity 2020" [9].

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## ҚАЗАҚСТАН РЕСПУБЛИКАСЫ ЭКОНОМИКАСЫНЫҢ НАҚТЫ СЕКТОРЫН ТАЛДАУ ЖӘНЕ ОНЫҢ ДАМУ ПЕРСПЕКТИВАЛАРЫ

**Аннотация.** Экономиканың нақты секторы деп Қазақстан Республикасының экономикалық дамуының түрлі салалары кәсіпорындарының көп санын қамтитын республиканың өнеркәсіптік өндіріс секторы түсіндіреді. Қазақстан Республикасы экономикасының нақты секторы талданды және оның даму перспективаларын қарастыруға болады. Мақалада осы кәсіпорындарды сипаттауға және жіктеуге, олардың экономиканы дамытудағы



рөлін анықтауға тырысу ұсынылды. Бұл мақалада авторлар 1996 жылдан бастап 2017 жылға дейін ұзақ мерзімді кезең ішінде Қазақстан Республикасы экономикасының нақты секторының даму ерекшеліктерін талдайды. Сондай-ақ мақалада экономиканың нақты секторын дамытудың перспективалы бағыттарына талдау жасалады және олардың әрқайсысының негізгі мазмұны мен шектеулері талданады. Форсайт-зерттеулерді жүргізу кезінде болжаудың 10-15 әдістерінің үйлесімі пайдаланылады. Форсайт әдістерін көрнекі жүйелеу үшін Манчестер университетінің маманы Р. Поппермен "Форсайт-ромб" деп аталатын схема жасалды.

**Түйін сөздер:** Экономика, экономиканың нақты секторы, ЖІӨ-нің, даму, бюджет, экономикалық өсу

УДК 336.7.

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### **АНАЛИЗ РЕАЛЬНОГО СЕКТОРА ЭКОНОМИКИ РЕСПУБЛИКИ КАЗАХСТАН И ПЕРСПЕКТИВЫ ЕГО РАЗВИТИЯ**

**Аннотация.** Под реальным сектором экономики понимается сектор промышленного производства республики, включающий большое количество предприятий различных отраслей экономического развития Республики Казахстан. Проанализирован реальный сектор экономики Республики Казахстан и рассмотрены перспективы его развития. В статье была представлена попытка описать и классифицировать данные предприятия, определить их роль в развитии экономики. В данной статье авторами анализируются особенности развития реального сектора экономики Республики Казахстан в течение долгосрочного периода – с 1996 г. по 2017 г. Также в статье приводится анализ перспективных направлений развития реального сектора экономики и анализируется основное содержание и ограничения каждого из них. При проведении форсайт-исследований используется сочетание 10–15 методов прогнозирования. Для наглядной систематизации методов Форсайта специалистом Университета Манчестера Р. Поппером была разработана схема, получившая название «Форсайт-ромб».

**Ключевые слова:** Экономика, реальный сектор, ВВП, развитие, бюджет, экономический рост.

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kmaksat\_79@mail.ru, [saule\\_285@mail.ru](mailto:saule_285@mail.ru)**ORGANIZATIONAL AND ECONOMIC MECHANISM OF SUPPORT AND  
DEVELOPMENT OF THE FINANCIAL INDUSTRIAL GROUPS IN THE  
MINERAL AND RAW MATERIALS SECTOR OF KAZAKHSTAN**

**Abstract.** The purpose of the article is to develop an organizational and economic mechanism for the development of corporate structures in the mineral resource sector of Kazakhstan economy in the context of deepening market transformations. To achieve the goal, methods of a systematic approach, scientific abstraction, analysis and synthesis, as well as methods of multi-criteria economic-mathematical modeling, multi-criteria optimization, expert assessments, groupings were used. The study made it possible to develop a conceptual model of organizational and economic mechanisms for the formation and development of financial and industrial groups with the definition of four main blocks of mechanisms that are interconnected by elements and components. In addition, the work has systematized measures to support the formation and development of financial-industrial groups focused on import-substituting and export-oriented production in three areas: direct impact, indirect and indirect support.

The results of the study can be applied in the development of government measures to stimulate the development of financial and industrial groups not only in the mineral resource sector, but also in other sectors of Kazakhstan economy.

**Key words:** financial and industrial groups, integration, model, organizational and economic mechanism.

**Introduction**

The high level of financial and industrial groups (FIG) integration, its close connection with the global market make the study of the main factors and conditions of forming of mechanisms for FIG support and development in retrospective and prospective one of the most important tasks of the strategic analysis [1].

The factors and conditions revealed on the investigation level of forming and elaboration of FIG mechanisms, development and designing stipulating FIG development, and the estimation of its effect on its behavior, in future should allow formulating the main problems of forming and development of FIG and determine the main prerequisites for its solving.

The retrospective analysis based on the study of the main factors and conditions of forming and development of mechanisms to support the small and medium enterprises in the form of FIG in Kazakhstan on its relation to manufacture, way of effect, recurrence impact extension, and cover degree allow making a conclusion on noncompetitiveness of these enterprises [2].

Following the stated above, under the market conditions, the increasingly greater attention is given to the development of organizational and economic mechanisms to support the forming and developing of financial and industrial groups. At the present time there are a lot of different motives stimulating the entrepreneurs to make steps (decisions) leading to changing the FIG structure. The decisions, as rule, are based on aspiration to increase the welfare of FIG stockholders. Under these conditions it is especially important to elaborate the organizational and economic mechanisms on supporting and developing of FIG in rapidly changing environment for a long term.

### **Results and discussion**

It should be noted that the experience of the economic mechanisms elaboration on support and develop of FIG is poorly covered by publications. Nevertheless, it exists. The sectors where the FIG forming had enough attention at the beginning of thorough economic reforms show a definite success in manufacture and products sales.

The experience of financial and industrial groups forming in Kazakhstan shows that the main attention was paid to investing and financial sides of its functioning. The investment programs of participants organizing the FIG, mainly, served as umbrella to get some financial benefits (lower customs fees and some other taxes) without any attention to issues of manufacture, commercial cooperation, and competitiveness. This leads to preserving of low-effective mechanisms of FIG management [3, 4].

During the investigation process and substantiation of organizational and economic mechanisms for support and development of FIG on forming and development of processing and engineering manufactures at deeper levels of production we have elaborated the multi-criteria economic models of FIG forming and development basing on the application of mechanisms of FIG support and development.

The simulation (economic) approach in strategic management of FIG activity in view of organizational and economic mechanisms of FIG development allows the following to a person who makes an effective decision [4]:

- reveal and precise the priorities and development of FIG;
- make managerial decisions agreed with the accepted priorities avoiding logical errors in complicated and long chains of FIG management.

For example, the multi-criteria economic models of FIG strategic management elaborated on the base of organizational and economic mechanism of FIG support should represent the tasks clearly and structurally.

The specification and accuracy of economic model description of tasks of FIG strategic management depend on how deeply a person making a managerial decision understands the essence of support and functioning of FIG, on knowledge of possible economic consequences of alternative options of FIG forming and development, and if those were selected carefully, etc. In other words, if his ideas on forming and development of FIG are structured properly [5]. But, the necessity to apply the theoretical methods in managerial decisions making is stipulated by the fact that the tasks on FIG forming and developing are low-structured. So, the endless circle appears.

On the one hand, for the satisfactory solving of tasks on FIG forming and developing the clear and scientifically substantiated multi-criteria economic models describing in details the ideas of a making decision person are needed. On the other hand, the imperfective ideas on FIG forming and developing cause the necessity to elaborate multi-criteria economic models of prediction, strategic and tactic planning of production, and FIG products sale. It appears that the way out is only one – iterative approach to construction of economic models of FIG forming and developing in mining and metal sector. This kind of approach allows, in the process of creating and precision of economic models for FIG development, for simultaneous improve of ideas on the tasks of prediction, strategic and tactic planning of manufacture and sale of competitive FIG products [6].

In the process of iterative procedure implementation, at the first stage the multi-criteria economic models could be not very accurate and even controversial reflecting different unclear ideas of a managerial decision making person, i.e. poor functioning structure of FIG forming and developing. During the forming and investigating of economic prediction models development, strategic and tactic planning of manufacture and products sale, the ideas of a managerial decision making person become clear on the issue of optimal support and development of FIG, its relation to consequences of different solution options. This leads to precision of elements of multi-criteria economic models of FIG forming and developing, and all repeats again [7]. The iterative process continues until achieving a such variant of multi-criteria economic models of prediction, strategic and tactic planning of manufacture and product sale of FIG at which the ideas of a decision-making person, first, are described adequately, and, second, they are complete, clear, without controversies, and allow making a substantiated selection of an alternative variant of managing decisions on FIG support and development.

The important feature of multi-criteria economic FIG models development is the necessity to acquire the required information from people – a person making strategic managerial decision, or experts who are

specialists on the field of strategic management. This feature of FIG forming and developing requires special arrangement of the whole activity on developing the multi-criteria economic models on strategic management of FIG, its investigation, application of formalized methods of options comparison for FIG support and development in Pareto field. The arrangement of managerial decisions making process is a specific activity requiring special knowledge. Thus, during the process of elaboration and investigation of multi-criteria economic models of FIG forming and developing, together with a managerial decision making person (and between a consultant and experts, if necessary), a consultant arranges different procedures on acquiring and processing of necessary information, checks the received information, investigates its consistency, decides if additional information is necessary, determines its type, and, finally, elaborates and applies formalized methods for options comparing for support and development in Pareto field [8]. Thus, the procedure of elaboration and investigation of multi-criteria economic models of FIG development, in essence, is a dialogue iterative procedure to make managerial decisions on FIG support and development.

At the same time, the elaboration of methods on revealing the most preferred strategic managerial decisions on FIG functioning in mining and metals sector is impossible without application of accurate methods [9].

Thus, the model approach to solving the multi-criteria tasks of prediction, strategic and tactic planning implies that thoughtful ideas that cannot be subjected to strict formalization, and formalized models of prediction, strategic and tactic planning of manufacture and products sale should be used together. Only this kind of approach can lead to practically useful results.

Let's formulate the main points that should be taken into account while developing multi-criteria economic models of strategic FIG management in mining and metals sector. These points outline the most important specific features of multi-criteria economic models on FIG management in mining and metals sector [10]:

1. Multi-criteria economic models of manufacture and FIG products sale management are created by a researcher for structuring and précising of a decision-making person's preferences who participates directly in its elaborating.

2. Multi-criteria economic models of manufacture and FIG products sale management should be logically consistent.

3. Multi-criteria economic models should describe all most important elements of functioning and development of FIG while making strategic managerial decisions.

4. Economic prediction models of strategic and tactic planning of manufacture and FIG products sale should provide an opportunity to use real information on manufacture, sale of products of mining and metals sector given by experts and a strategic managerial decision-making person.

5. Economic models for FIG strategic management in mining and metals sector should be simple and convenient for strategic analysis and application by a strategic managerial decision-making person.

Thus, basing on the analysis of economic models application and the above stated points, we have developed a system of multi-criteria economic models of functioning and development of financial and industrial groups in mining and metals sector consisting of three stages. The first stage is devoted to elaboration of economic models of strategic management of FIG products sale on the base of analysis of value chain individual elements. For the economic models development the Poisson model and Laplace function are used [11].

At the second stage we develop the multi-criteria economic models of strategic management of mineral raw resources processing and final manufacturer issuing the end products. The economic models are developed on the base of value chain data: institute of research and development; institute of designing; raw materials processor; end manufacturer.

The third stage is devoted to the development of multi-criteria economic models of mineral and raw resources manufacture management on the base of individual constituents of the value chain at FIG forming, in particular, data of institutes of research, development and design, and raw material producer.

The system of organizational and economic mechanisms of FIG forming and developing elaborated by us for import-substituting and export-oriented manufactures includes four main blocks: organization and management, economic, legislative, information and analysis. The organization and management block is represented by administrative and managerial structures coordinating the market development to

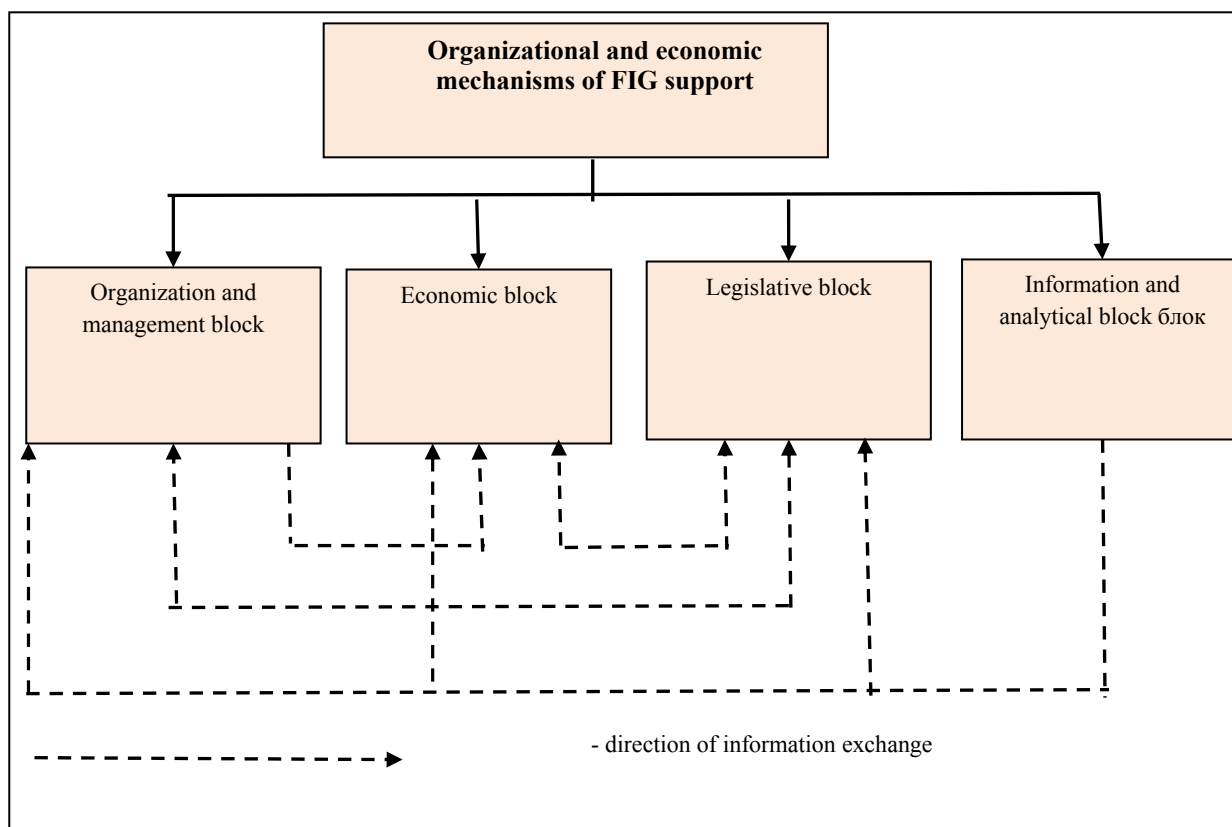
import-substituting and export-orienting production by price monitoring services, by the system of information and consulting centers, by the system of special credit offices, and integrated establishments.

The economic block functions through price, loan-financial, tax, and insurance levers [12]. This block allows allocating subsidies and budget loans, making leasing deals.

The information and analytical block represents a system of information processing, and consists of the following parts: subsystem of acquisition and sorting of information, subsystem of information storage, subsystem of search, subsystem of information analysis. The important role, in our opinion, in information resources provision for FIG supporting and developing belongs to the State [13]. In this regard, it is necessary to elaborate the state mechanisms on determining the priority directions to support the development of FIG.

The legislative block consists of such parts as: legal and other regulatory acts of the State forming a legal base and fiscal environment within which the FIG establishes an organizational and economic mechanism and supports forming and development of FIG; accounting policy of FIG, internal regulatory documents allowing for a common economic mechanism functioning within the FIG subdivisions.

Thus, the conceptual model of organizational and economic mechanisms of FIG forming and development was formed under four main parts of mechanisms shown in Figure 1.

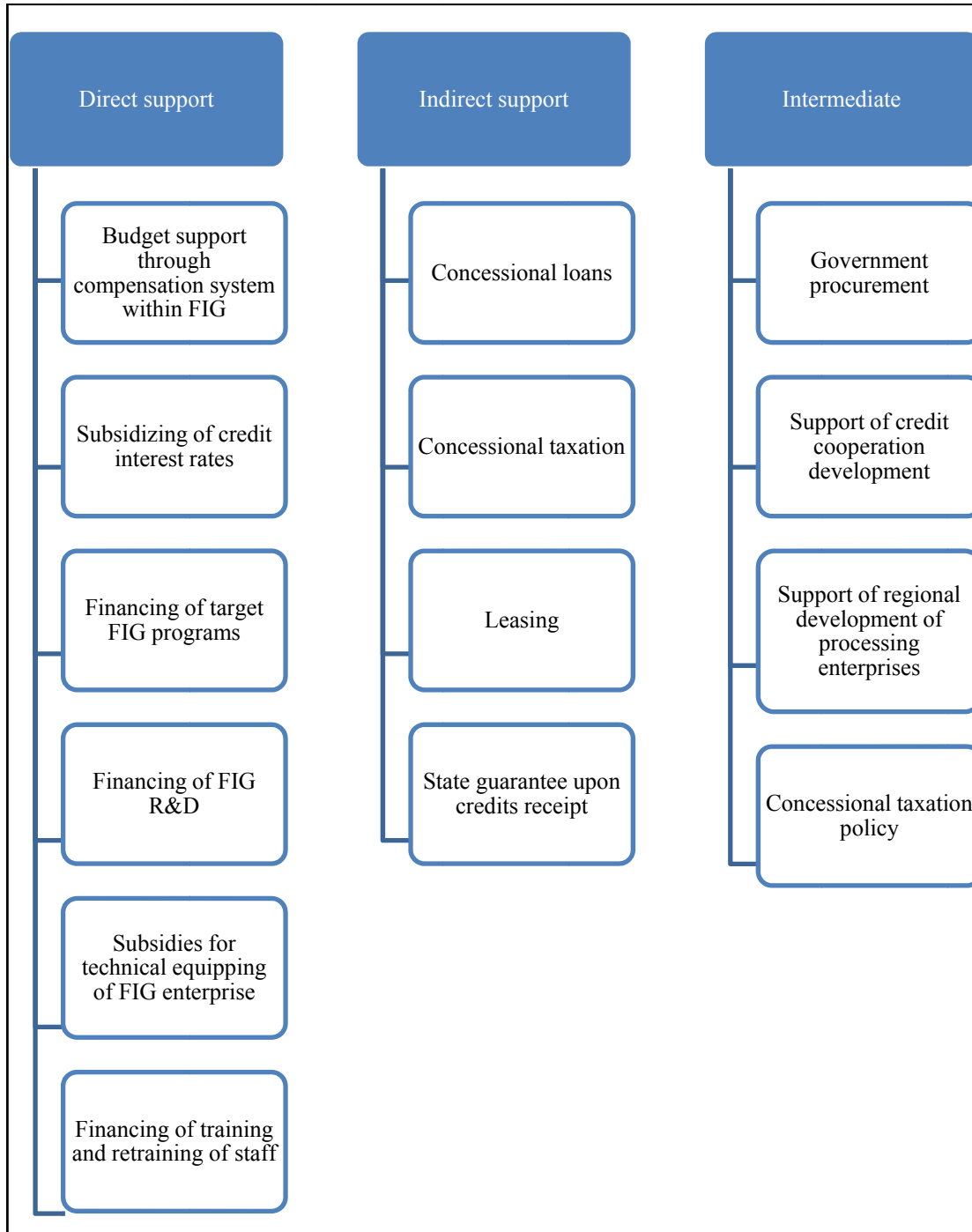


Note – made by authors

Figure 1- Conceptual model of organizational and economic mechanisms of FIG forming and developing

The described above four main blocks of organization and economic mechanisms of FIG forming and developing are interconnected by elements and components including scientific support, accounting and control of budget funds use, strategic analysis, and FIG development.

In contrast to the existing approaches, and basing on the methodological implication that the laws of market economy under the import-substituting manufacture do not act to the same extent as in real sectors of economy, we systematized the support measures for forming and development of financial and industrial groups oriented on import-substituting and export-oriented manufacture in three directions: direct effect, indirect and intermediate support (Figure 2).



Note – made by authors

Figure 2 – Support measures for FIG forming and developing

**Conclusion**

The systematized in the work support measures on forming and developing of financial and industrial groups are implemented through the organizational and economic mechanism of support of FIG forming and developing that requires additional systematization and improvement.

Basing on our researches the direct governmental support for forming and developing of FIG issuing the import-substituting and export-orienting products should represent a system of economic relations that includes the combination of forms and methods of multilevel forming of budget funds and its use on financing the target programs, R&D, compensations, budget funds, subsidies, and subventions.

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## ҚАЗАҚСТАННЫҢ МИНЕРАЛДЫ-ШИКИЗАТ СЕКТОРЫНДАҒЫ ҚАРЖЫ-ӨНЕРКӘСІПТІК ТОПТАРДЫ ҚОЛДАУ ЖӘНЕ ДАМУЫНДАҒЫ ҰЙЫМДЫҚ-ЭКОНОМИКАЛЫҚ ТЕТІКТЕРІ

**Аннотация.** Мақаланың мақсаты – нарықтық өзгерістердің тереңдеуі шарттарында Қазақстан экономикасының минералды-шикізат секторындағы корпоративтік құрылымдарды дамытудың ұйымдық-экономикалық тетігін әзірлеу болып табылады. Қойылған мақсатқа қол жеткізу үшін жүйелік әдіс, ғылыми абстракциялау, талдау және синтездеу әдістері, сондай ақ көпкритерийлі экономика-математикалық үлгілеу, көпкритерийлі оптимизациялау, сараптамалық бағалау, топтау әдістері қолданылды.

Жүргізілген зерттеу қаржы-өнеркәсіптік топтарды қалыптастыру мен дамытудың ұйымдық-экономикалық тетіктерінің тұжырымдамалық үлгісін әзірлеуге мүмкіндік берді, тетіктердің элементтері мен компоненттері арқылы өзара байланысты негізгі төрт тарапы анықталды. Одан басқа, жұмыста импортты алмастыруға және экспортқа бейім өндіріске бағытталған қаржы-өнеркәсіптік топтарды қалыптастыру және дамытуды қолдау бойынша шаралар үш бағытқа: тікелей ықпал ету, жанама және аралық қолдау бойынша топтастырылған.

Зерттеу нәтижелері тек минералды-шикізат кешенінде ғана емес, сондай ақ Қазақстан экономикасының басқа салаларында да қаржы-өнеркәсіптік топтардың дамуын ынталандыру бойынша мемлекеттік шаралар әзірлеуде қолданысын табуы мүмкін.

**Түйін сөздер:** қаржы-өнеркәсіптік топтар, ықпалдасу, үлгі, ұйымдық-экономикалық тетік.

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## ОРГАНИЗАЦИОННО-ЭКОНОМИЧЕСКИЙ МЕХАНИЗМ ПОДДЕРЖКИ И РАЗВИТИЯ ФИНАНСОВО-ПРОМЫШЛЕННЫХ ГРУПП В МИНЕРАЛЬНО-СЫРЬЕВОМ СЕКТОРЕ КАЗАХСТАНА

**Аннотация.** Цель статьи – разработка организационно-экономического механизма развития корпоративных структур в минерально-сырьевом секторе экономики Казахстана в условиях углубления рыночных преобразований. Для достижения цели использовались методы системного подхода, научной абстракции, анализа и синтеза, а также методы многокритериального экономико-математического моделирования, многокритериальной оптимизации, экспертных оценок, группировок. Проведенное исследование позволило выработать концептуальную модель организационно-экономических механизмов формирования и развития финансово-промышленных групп с определением четырех основных блоков механизмов, которые взаимосвязаны между собой посредством элементов и компонентов. Кроме того, в работе систематизированы меры поддержки формирования и развития финансово-промышленных групп, ориентированных на импортозамещающее и экспортоориентированное производство по трём направлениям: прямого воздействия, косвенной и опосредованной поддержки.

Результаты исследования могут быть применены при разработке государственных мер по стимулированию развития финансово-промышленных групп не только в минерально-сырьевом комплексе, но и других отраслях экономики Казахстана.

**Ключевые слова:** финансово-промышленные группы, интеграция, модель, организационно-экономический механизм.

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## **MODERN TENDENCIES OF DEVELOPMENT OF LEGAL SCIENCE AND LAW EDUCATION IN THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** The authors consider modern trends in the development of education in the Republic of Kazakhstan in the context of the reform of legal science.

The goal of Europeanization of national education is analyzed from different points of view, in particular, educational globalization, which causes the integration of educational systems and the unification of educational standards of Kazakhstan with European ones. The article presents some features of the implementation of the Bologna process. The main goal of legal education is the formation of a humanistically oriented person with a sense of self-worth, aware of the significance and value of democracy, freedom, civil and law-abiding, respectful of human rights and codes of rights and able to protect these rights, possessing the legal knowledge necessary the world.

**Keywords:** trends, jurisprudence, science, education, Bologna process.

### INTRODUCTION

Higher and postgraduate education in Kazakhstan is implemented in accordance with the Bologna process on the credit technology of education. Higher and postgraduate education is built on a three-level system: undergraduate, graduate and doctoral studies. Other required elements of the Bologna process are named. The author of the article notes problematic issues in modern training of lawyers and makes suggestions for their resolution. Attention is paid to the activities of the Republican educational and methodical section on the group of specialties "Law" of the Ministry of Education and Science of the Republic of Kazakhstan.

In modern conditions, the nature of relations between the state and the individual is changing. Citizens received real democratic freedoms, the opportunity to express themselves in the economic and political fields, to realize themselves as individuals. The development of market relations as a condition of success in life determines the priority of such personality traits as businesslikeness, enterprise, ability to correctly navigate social relations, act in accordance with their interests, without violating the law. The negative aspects of life include crime, drug addiction, the presence of corruption in government bodies at all levels.

### MAINPART

These factors determine the special significance of the system of legal education as a condition for the formation of a legal culture in society, which in turn consists of the following components:

1. Formation of a system of knowledge about the law, legal framework, legal measures to regulate social relations.

2. Fostering a sense of rejection of violations of the rule of law, setting a model of law-abiding behavior, focused on the social value of the law, fostering a sense of responsibility for influences.

3. Socially useful behavior of the individual, manifested in the conscious lawful behavior, the skillful realization of their rights and freedoms, the responsible attitude to the duties of the citizen, the willingness to act legally competently.



The training of legal personnel is closely related to organizational and legal measures. Kazakhstan is in dire need of specialists with a legal education of a new formation who could, on the basis of the adopted legal acts, effectively defend the rights, freedoms and interests of our citizens - skillfully and competently. Such an approach should be the basis for the training of legal personnel in Kazakhstan. As for the content of legal education, according to E.E. Usanova, "... legal education is a purposeful process of obtaining fundamental (deep, scientific, systematized, complex) legal knowledge by a person, corresponding to the modern level of development of legal theory and practice" [4, p. 12].

Today, changes in the socio-economic and legal areas of development of our state require increased attention to the formation of the personality of a modern lawyer-professional. The main task of higher legal education is that students can not only acquire knowledge in the field of jurisprudence, but also become specialists with a high general and professional culture, a high level of moral and business skills, can think critically and make decisions independently and bear responsibility for their actions.

When analyzing the personal qualities of future lawyers, it is necessary to solve the problem of identifying the professionally significant personal qualities of a specialist lawyer. There are two main components of the graduate model:

1) the professional competence of the future lawyer;

2) personal qualities of the future specialist, which in the aggregate are for a graduate of a higher educational institution an integral part of his general professional competence.

In the preparation of legal personnel issues of legal education are key, and they are closely related to the activities of the organizational and legal nature. The society and the state need legal cadres of a conceptually new formation, which are brought up and oriented exclusively towards the protection of the rights and freedoms of the person and citizen, the interests of society and the state. We can safely say that it is this approach that should underlie the system of legal education in our state.

There is a need to modernize legal education, the improvement of the main areas of which should be aimed at creating new educational technologies. This implies a reorientation of legal education from a predominantly informative type of education to learning, allowing to identify and develop the cognitive and creative abilities of students, nurture their volitional and professional personality traits, ensuring effective professional activity of lawyers.

Everyone knows that the content of professional legal education is formed not only in the traditional educational process. Educational and professional training, work on the development of various professional activities, the inclusion of real legal practice should become permanent components of education.

In order to ensure modern orientation and intensification of the educational process based on information technologies, it is necessary to provide for the inclusion of training courses using interactive and expert-training systems, decision support systems, etc.

Legal education is the basis of legal education and legal culture of all citizens. It is a condition for maintaining the efficiency of the system of law and order in our state.

Modern legal education is an integral part of the national education system and is a relatively independent field of education that has a strong influence on the foundations of the legal system of the whole country. The training of highly qualified professional lawyers and the quality of their activities influence the most diverse aspects of the development of Kazakhstan's society, including politics, economics, the social sphere, culture, that is, it shows the degree of high significance of the state of legal education in relation to the efficiency of the entire legal education system. Of course, this means that the perfection of the laws, the degree of their implementation and the dynamics of the evolution of the development of our national legal system and the effectiveness of its reform depend on the legal knowledge of legal specialists and all citizens of our state.

If we consider the traditional approach to legal education to learning, here we observe the process of acquiring a body of knowledge of a certain level through their direct transfer and assimilation by students. In modern conditions, the education system is implemented, when the student is given the right to independently choose the methods and options for gaining the level of competence in his chosen field of future profession. This gives the student the right to choose the trajectory of study due to his abilities and personal interest in the chosen specialty.

Today, the system of higher legal education is focused on the competence approach. This means that almost any university prepares and graduates a specialist who has the competences necessary for practical work in various areas of jurisprudence: rule-making, law enforcement, law enforcement, or research and teaching. Modern educational programs (especially in the legal professions) need to be developed and coordinated with future employers, for whom, ultimately, the university prepares students, i.e. The employer must directly take an active part in the formation of the catalog of elective disciplines in accordance with the need to acquire the skills of students for their further implementation.

Of course, one of the most important moments in improving the quality of training future lawyers is the widespread introduction of elective disciplines (training courses for the choice of students), which should have a high degree of relevance and compliance with educational standards. The development and preparation of these elective disciplines should be based on the results of the personal research of the faculty of the university (the quality and degree of relevance of the content of the disciplines are important). The annual update of the catalog of elective disciplines is a prerequisite for the work of teachers and will motivate them to constant scientific research, skills of classification and presentation of the results of their research. As a result, all this work expands the scientific erudition of the faculty, raises their professional level and makes it possible to give the basics of fundamental knowledge in various disciplines, making them interesting and informative for students. In order to create such courses or improve existing ones, teachers must engage in research in the field of topical legal problems, the results of which will ultimately be transferred and learned by students. The practical experience of universities shows that academic teachers who create a set of new knowledge, develop new pedagogical technologies, use new equipment. They are able to teach students and give them high-level knowledge, which ultimately shows the general level of national education and its compliance with international standards.

Thus, we can conclude that today a modern university graduate needs not only to have legal knowledge, but also be ready to put them into practice in the relevant field. In other words, when assessing the work of a university, the main indicators are the graduate himself, the degree of his demand in the labor market, the level of his residual knowledge, the degree of adaptation to modern market conditions, and readiness for further improvement of the completed education.

The system of higher legal education performs the functions of accumulation and preservation of its historical achievements and is a mechanism for improving legal knowledge and transferring it to subsequent generations of professional lawyers, as it is a direct source of professional legal awareness in the system of legal culture of society. In this aspect, higher legal education acts as one of the main forms of reproduction of the legal culture of society and shows the level of quality of education in the state.

Attention should be paid to the point of view of G.N.Serikov, who believes that “for the development of legal education it is important to determine the level of culture of university graduates. To determine the level of education of the identified triad of qualities, the following criteria are distinguished: awareness, consciousness, effectiveness and skill. At the same time, they serve as internal criteria for measuring and assessing the quality of one of the results of education - the formation of professionally significant personal qualities of a university graduate — a future lawyer”[3, 233].

Indeed, one can agree with the opinion of G.N. Serikov, indicating that “indicators of awareness and conscientiousness regarding future professionally significant personal qualities of future lawyers are the accuracy and completeness of knowledge and ideas about conscience, justice and responsibility as legal and ethical categories, as qualities required a lawyer in his professional activities; conviction in the correctness of their own interpretations of learned knowledge and ideas. An indicator of effectiveness is the activity of students in the manifestation of a sustainable positive attitude to conscience, justice, responsibility in the individual interpretation of the performance of professional competencies, and skill - reliance on the trinity of conscience, justice, responsibility in making professional decisions in situations of moral choice. The education of professionally significant personal qualities of future lawyers is carried out as part of the educational process at the university. The educational process aimed at fostering the professionally significant personal qualities of future lawyers is intended to achieve a kind of community, expressed in a coordinated pedagogical partnership, in a humane teaching and pedagogical interaction. The purpose of this interaction is to promote the change of certain properties of the participants in the education and the achievement by them of a certain level of education; promote self-realization of students

in socially acceptable manifestations; and also to give students a vector direction in the development of their spirituality as a prerequisite for further self-education) [3; 236].

The concept of the legal policy of the Republic of Kazakhstan for the period from 2010 to 2020. (hereinafter referred to as the Concept), approved by the decree of the President of Kazakhstan N.Nazarbayev dated August 24, 2009, aims to modernize legislation, strengthen the state, democratize the political system, implement the norms of ratified acts of international law. The document combines orientation towards the development of legislation and public administration with the continuity of legal policy, consistent implementation of the potential of the norms of the Constitution and legislation, provision of legal means to protect the rights and freedoms of citizens, national interests of the country, sustainable development of society [1; 86].

The new stage of development of the Kazakhstan legal system, associated with the approval of the Legal Policy Concept, was prepared and predetermined by both objective internal processes and the influence of external factors, including the impact on the legal mechanisms of Kazakhstan's society on new phenomena and trends that have emerged and acquired a fundamental character in more developed legal systems of the modern world, especially the Romano-Germanic legal family.

Taking into account the outlined features of law servicing of modern needs, development and modification of state functions in a continuously developing legal system, three groups of global branches (complexes) of a new generation law could be distinguished:

- established, universally recognized branches of law (environmental, information law, human rights law (humanitarian law in a broad sense), etc.);
- intensively emerging branches of law (law of peace, law of security, immigration law, law of sustainable development, etc.);
- outlining the general outlines of their development and causing further universalization of the branch of law (for example, economic law, social law) [12; 22].

## CONCLUSION

Thus, it should be noted that the Kazakhstan legal system is an independent, unique, mononuclear national legal phenomenon, which is defined by the Legal Policy Concept of the Republic of Kazakhstan, based on current trends in the development of the national legal system, accumulated domestic and international experience, scientifically based ideas about the prospects development of the Kazakhstan state and law. But at the same time, the legal system of Kazakhstan must exist and develop as an integral, sustainable, harmonious phenomenon. This affects the realization of the objectives of the law, in the whole legal system; is a condition for solving many legal, social, economic, political and other problems of the state. Optimistic forecasts of the development of the legal system in the future can only be built in the event that evolutionary changes affect all elements of the system, and it itself will respond adequately and timely to the challenges of the external environment.

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## ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ ЗАҢДЫҚ ҒЫЛЫМ ЖӘНЕ ЗАҢНАМАЛЫҚ БІЛІМ БЕРУ САЛАСЫНЫҢ ДАМУЫНЫҢ ЗАМАНАУШЫ ТЕНДЕНЦИЯЛАРЫ

**Аннотация.** Авторлар заңғылымын реформалау контексінде Қазақстан Республикасында білім беруді дамытудың қазіргі заманғы үрдістерін қарастырады. Ұлттық білім беруді европалдандырудың мақсаты әр түрлі көзқарастардан, атап айтқанда, білім беру жүйесін интеграциялауға және Қазақстанның білім беру стандарттары неуропалық деңгейге біріктіретін білім беру жаһандануынан талданады. Мақалада Болон процесін жүзеге асырудың кейбір ерекшеліктері келтірілген. Құқықтық білім берудің басты мақсаты адамгершілікке бағдарланған тұлғаны демократияның маңыздылығы мен құндылығын, еркіндікті, азаматтық және заңдылықты сақтауды, адам құқықтарын құрметтеуді және құқықтарды қорғау кодексін білуді, қажетті құқық білімдерін иеленуді білетін өзіндік сезіммен қалыптастыру болып табылады. әлем.

**Түйінді сөздер:** трендтер, юриспруденция, ғылым, білім, Болон процесі

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## СОВРЕМЕННЫЕ ТЕНДЕНЦИИ РАЗВИТИЯ ЮРИДИЧЕСКОЙ НАУКИ И ЮРИДИЧЕСКОГО ОБРАЗОВАНИЯ В РЕСПУБЛИКЕ КАЗАХСТАН

**Аннотация.** Авторами рассматриваются современные тенденции развития образования в РК контексте реформирования юридической науки.

Цель европеизации отечественного образования анализируется с разных точек зрения, в частности, образовательной глобализации, вызывающей интеграцию образовательных систем и унификации образовательных стандартов РК с европейскими. В статье представлены некоторые особенности реализации Болонского процесса. Главная цель юридического образования — становление гуманистически ориентированной личности, обладающей чувством собственного достоинства, осознающей значимость и ценность демократии, свободы, граждански активной и законопослушной, уважающей права и свободы человека и умеющей защищать эти права, обладающий юридическими знаниями, необходимые для нахождения своего места в окружающем мире.

**Ключевые слова:** тенденции, юриспруденция, наука, образование, Болонский процесс.

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**THE ANALYSIS OF THE INFLUENCE THE ECONOMY  
OF THE ATYRAU REGION ON THE ENVIRONMENT**

**Abstract.** This article discusses the socio-economic development of Atyrau region, the priority areas of economic development of the region and its impact on the environment. Atyrau region is the largest oil and gas field in Kazakhstan. In the region's economy energy, construction materials, agricultural and fishery industries are well developed. On this basis, new bases for sustainable development are being created: the social infrastructure improvement, the creation of new jobs, the maximal employment of local population, the preparation of qualified specialists.

However, the region is named as the most ecologically unfavorable region in the country. The ecological situation in the region is formed by climate, anthropogenic factors and intensive development of oil and gas production. One of the global issues is the oil production wastes polluting the environment. In this regard, much attention is paid to solving this problem now. This is because the pollutants mentioned above, besides the environment harm a human body and lead to the various diseases. The article analyzes the effects of oil products on the environment, on the health of the population, and the current state of the Caspian Sea.

**Keywords:** socio-economic development, industrial development, economic activity, oil and gas complex, ecological catastrophe, ecosystem status.

**Introduction.** Today, the development of a particular city, region, or the whole state embraces the development that satisfies ecological growth, reduces ecological burden on the environment, and satisfies the needs of society in a way that does not hurt future generations.

Priority directions of economic development of the Atyrau region are fuel and energy, processing, agro-industrial and fisheries, and construction materials. The big contribution in the structure of the industrial production is crude oil and gas production, oil pumping, electricity production and distribution. The region's economy is one of the most developed regions with a potential for further diversification.

The basis of the region's economy is the manufacturing sector, which accounts for half of the gross regional product. According to the results of the first nine months of 2017, the gross regional product (GRP) will reach 3842.1 bln. The share of the GRP in the GRP of the republic was 10.9%. The volume of industrial production in January-November 2017 in current prices was 5090,9 billion tenge, which makes 25,1% of the republican volume of production.

The actual index of production volumes was 121,4% to the corresponding period of 2016. The mining industry produced goods to the amount of 4588.5 billion tenge, the real volume index – 123,8%. The manufacturing industry output amounted to 446,6 billion tenge, the real volume index – 103,6%. The volume of investments into main capital in January-November, 2017 amounted to 2221,2 billion tenge or 115,2% to the corresponding period of 2016. Atyrau region ranks 1st in the country due to the share of investment in main capital (29.7%) [1]. Within the second Five-Year Plan of the State Industrial-Innovative Program Development 26 projects worth 3.1 trillion tenge 3528 workplaces are planned to be implemented in the region [2].

At the same time, there is a positive trend of active participation of entrepreneurs in the state programs. As part of the business support map, 23 projects are being implemented at the local level with a total value of 69,8 billion tenge, with the creation of 1471 jobs. Of them, 13 projects totaling 25,8 billion tenge were commissioned in 2015-2016 year, 788 jobs were created.

In 2017 year, 5 projects worth 5 billion tenge, with the creation of 344 workplaces were implemented. As of November 1, 2017, the number of registered small and medium-sized businesses amounted to 55,101 units, which is 0,4% more than in the previous year, including the number of operating small and medium-sized enterprises - 43,153 units, increasing by 6,4% many. The volume of production of small and medium business entities in January-June 2017 amounted to 655,1 billion tenge, an increase of 53,3% to the corresponding period of 2016, an average of 124,2% in Kazakhstan [2]. Following the results of the regional development level of 2017, the region took the 1st place.

Table 1- Number of employed population by types of economic activity

Years	2012	2013	2014	2015	2016
<b>All the people</b>					
The employed population - total (person)	277 323	279 495	286 127	296 490	296 368
including:					
Agriculture, forestry and fish household	13 301	11 900	12 759	11 008	10 712
Industry and Construction	90 485	89 156	81 059	82 589	89 440
Service area	173 537	178 439	192 309	202 893	196 216
<b>Men</b>					
The employed population - total	145 492	141 886	149 497	152 680	154 617
including:					
Agriculture, forestry and fish economy	7 629	7 401	7 449	6 370	7 016
Industry and Construction	63 163	58 980	55 270	54 879	58 901
Service area	74 700	75 505	86 778	91 431	88 700
<b>Women</b>					
The employed population - total	131 831	137 609	136 630	143 810	141 751
including:					
Agriculture, forestry and fish economy	5 672	4 499	5 310	4 638	3 696
Industry and Construction	27 322	30 176	25 789	27 710	30 539
Service area	98 837	102 934	105 531	111 462	107 516
Note: Databases: Statistics Agency of RK [8].					

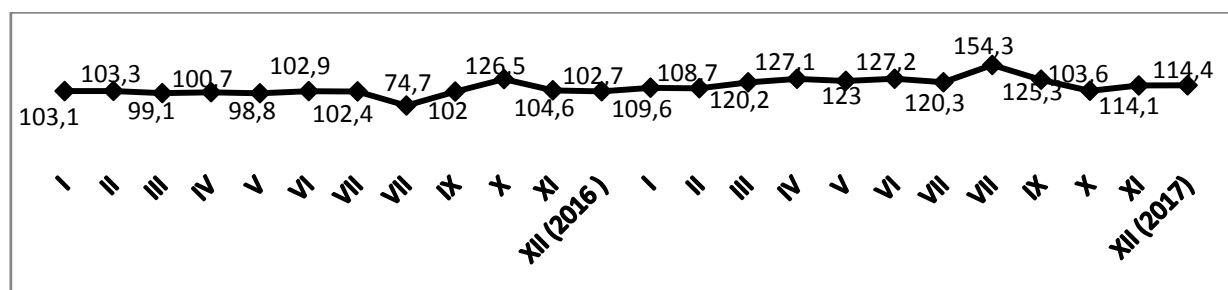
**Research methods.** In the course of the research, the methods of analysis and compilation were used to achieve the objectives. The methods of environmental research in the region have been analyzed by means of observations and surveys. Comparative table-based comparisons of general official statistical data were conducted.

**Results and discussion.** Atyrau region with its huge economic potential plays a special role in socio-economic development of Kazakhstan. Every year the number of companies with foreign participation is increasing. Today the region cooperates with about 1000 companies from 50 countries of the world.

This cooperation attracts modern management and technology to the region, the latest innovative world research, and contributes to the development of business tourism. It is one of the most developed regions and it is a potential region for further diversification of the economy[12].

For the further development within the Eurasian Economic Union it is possible to use the great opportunities considering the proximity of large Russian industrial regions. Petrol-chemical, machine building, food industry and construction industry are developed. The average monthly wage for January-

September, 2017, was 259834 tenge. In comparison with January-September 2016 decreased by 2,4%. The budget of Atyrau region has increased fourfold in the last ten years. A large-scale work is underway in the region to upgrade the communal and social infrastructure and improve the comfort of the population [3]. All population are gasified and accessible drinking water in all settlements has doubled.



Note - Source: this information is obtained from the Official Internet Resource of Atyrau region government [3].

Figure 1-The volume of industrial production in Atyrau region for 2016-2017 (in percent).

The development of Atyrau region is very important for Kazakhstan. This is due to the concentration of oil and gas resources that will allow improving the lives of the people living in the Caspian region and the quality of life of the whole Kazakhstan population, and attracts some investment in the development of hydrocarbon resources. The largest exporting companies in the region are Atyrau Refinery LLP, Embamunaigas, Agip KCO, Tengizchevroil LLP, Atyrau Neftemash LLP, Rauan Nalco LLP, Chevron MunaiGas Inc.

However, in terms of socioeconomic development Atyrau region is one of the leading regions, it occupies a special place among the regions and ecological disaster areas in Kazakhstan. The ecological situation here is formed under the influence of natural and anthropogenic factors, the most important of which is the increase of the level of the Caspian Sea and intensive development of the oil and gas complex. Increasing sea level is associated with damage to vegetation in shallow waters, As oil and gas wastes are exposed to water, the zone is polluted with sulfur and hydrogen.

Increased oil and gas production, high concentrations of extracted raw materials impact on air pollution, surface and underground water pollution, and due to these factors heavy metals, radionuclides and petroleum products damage the soils and vegetation[10].

Atmospheric air pollution remains one of the leading factors that adversely affect the environment. Atmospheric emissions of industrial enterprises of the region exceed 158 thousand tons a year, the main share of which is owned by oil and gas sector enterprises. In 2016, 12 oil and gas companies have extracted 9 billion cubic meters of associated gas from associated gas over 9.2 billion cubic meters.

Currently, four of the 12 oil and gas companies in Atyrau region, namely Tengizchevroil LLP, NCOC, Manash Petroleum, and Embamunaigas, use their associated gas as their own torches. In 2016 these oil companies burned 189 million cubic meters of associated gas [6].

Table 2- All pollutants emitted into the atmosphere in Atyrau region

Years	2013	2014	2015	2016	2017
Total (tons)	133 067,7	138 351,1	109 055,1	110 667,1	167 051,4
Hard	1 785,8	2 260,6	2 280,2	3 032,5	3 217,1
HP 10 (hard particles 10 mkm in diameter)	14,7	97,8	135,7	165,2	128,3
HP 2,5 (hard particles 2,5 mkm in diameter)	1 673,1	442,4	853,3	772,2	651,5
Gas and Liquid	131 282,0	136 090,5	106 774,9	107 634,6	163 834,2
Hydrocarbons (volatile without organic compounds)	49 383,6	25 538,8	16 949,9	12 553,8	9 561,9
Cushioned Organic compounds	15 786,6	24 066,2	19 232,6	9 496,2	8 627,2
Others	4 232,1	86 485,5	3 877,9	13 597,1	1076,5

Note - Source: the program of territorial development of Atyrau region for 2016-2020 [4].

In Atyrau air there are many pollutants in comparison with the countryside. As a result of radiation cooling in the streets and buildings, especially in the city center, the upper layer of the city air is warmed up, the temperature changes. Due to the weather changes, a dome-like cloud closes over the city, which affects the human body.

For example, on April 10 this year, the Atyrau Department of Ecology together with Kazgidromet received sampling criteria for atmospheric air to determine the sources of hydrogen sulfide. Atyrau region branch of "Kazgidromet" has received three dimensions of the gas turbine: Atyrau-Uralsk: methane-76,1 mg / m<sup>3</sup>; Atyrau-Uralsk, ANU Substation: sulfur dioxide - 0,0004 mg / m<sup>3</sup>; Atyrau - Russian highway, Tuhlaya balka: hydrogen sulfide was -2.01 mg / m<sup>3</sup>. In general, in 2017, 357 cases of high pollution and 75 cases of extremely high levels of hydrogen peroxide have been registered in Atyrau [7].

At the same time, man-made disasters are the predominant types of soil anthropogenic degradation, as a result the complete or partial removal of soil cover. They are connected with the uncontrolled movement of vehicles, exploration and development of oil and gas fields, construction of communication and power lines, various construction and assembly works, alienation of industrial and domestic wastes, storage of quarries.

Atyrau is located on the coast of the major water reservoir, in the context of unfounded environmental policy, it leads to an increase in pollution of the sea shore and destroys the marine ecosystems and thus adversely affects people's health.

The problem of pollution the Caspian Sea with oil and oil products, which is connected with the proximity of oil fields, is the main one. Particularly, contamination is due to leakage of the Edil and Ural rivers. Annually, 77,000 tonnes of hydrocarbons flow from the Edil river into the sea. Coastal pollution by oil wastes badly affects plankton, flora and fauna.

The pollution of the Caspian Sea leads to the death of many rare fish and other living organisms. Mass deaths of water birds and seals have become widespread. The health of residents of the oil-producing regions is seriously damaged. On the coast of the Kazakhstani part of the Caspian Sea there is massive desertification, there are strong and very strong desertification in the oil fields.

Mass death of birds in the Kazakh sector of the Caspian Sea was registered in October 2013. Then on the artificial islands of the Kashagan field, migratory birds - sloppy dogs, cobbles, bulls, quails - died for unknown reasons. Agip KCO paid for one million and a half million volts for dead birds.

Massive Caspian seals mass deaths have occurred due to the use of many drilling rigs around the Caspian Sea and pollution of marine water with harmful emissions as a result of exploration drilling on the seafloor. In April-June 2000, the massive Caspian seals' catastrophic crash took a wider role compared to last century.

Dead animals were first discovered in the basins of the island and in the waters of the North Caspian Sea and then in the western part of the Middle and Southern Caspian. According to ecological organizations, the number of dead seals in the North Caspian islands, the coastal zone of Kazakhstan, Russia (Dagestan) and Azerbaijan is about 25-30 thousand. Since then, the destruction of seals, as well as the destruction of sturgeon, birds, and fish have been repeated every year.

More than two thousand sturgeon fish and 337 seals flowed to the coast of Mangistau region. Experts say that another 10 percent of the oil pollution in the North Caspian Sea may cause to damage the ecosystems in the region. Kazakhstan part of the Caspian Sea is an ecological system that is vulnerable and sensitive to external factors. The impact of pollutants on the ecosystem here is 100 times stronger than the rest of the sea.

Kazakhstan is obliged to take special measures to restore sturgeons, caspian seals, migratory birds. On the lower banks of the Ural river, the level of natural reproduction of sturgeons is inadequate. In recent years, the number of sturgeon has been decreasing as a result of increased fisheries, breeding cases and expansion of poaching.

Most people in Atyrau region are workers who have no professional relationships with oil and other toxic and carcinogenic chemicals that affect the environment and the people health. As a result of demographic problems, the negative impact of oil and oil products on human organisms can be several times higher[11].



According to recent demographic surveys, the birth rate, death rate and population growth rates have deteriorated: the number of Atyrau region population on January 1, 2018 was 620551 people, including rural 323660 (52.1%), urban population - 296891 (4.9%).

The number of patients due to the increase in emissions of harmful substances in Atyrau region increases. 2011-2017 due to the dynamics of population morbidity in Atyrau and Atyrau region, respiratory diseases, circulatory system organs, digestive organs, genital organs diseases, and infectious diseases are dominant.

According to the results of 2017, the incidence of diseases, diseases of the circulatory system, respiratory system, urogenital system has increased as compared with 2016. There is an increase in blood and blood flow diseases in the region's population. The most common infectious diseases are "A" viral hepatitis, acute intestinal infections, tuberculosis. At the same time, tuberculosis morbidity remains high.

Table 3 - Main diseases of the population for 2011-2017 (per 100 thousand people):

Name of classes and individual illnesses	2011 y	2012 y	2013 y	2014 y	2015 y	2016 y	2017 y
All diseases	31953,3	31753,7	29481,6	28451,4	28780,3	31203,8	32356,6
Including:							
Blood circulatory system diseases	2229,7	2115,8	1722,7	1610,1	1679,6	2140,6	2308,2
Diabetes mellitus	136,0	190,7	182,5	175,2	140,6	141,6	147,9
Tuberculosis	107,5	102,0	90,6	84,7	78,6	66,2	63,2
Cancer	133,2	124,4	145,9	163,9	178,7	138,6	139,1
Muscle-muscular system diseases	546,7	447,2	478,2	527,4	546,3	605,7	679,6
Injury and poisoning	2172,6	2420,9	1917,9	1835,6	1896,3	2085,0	2169,2
Note - Source: Ministry of Health of the Republic of Kazakhstan Atyrau region Department of Medical Payment Services» account data [5].							

In addition, the prevalence of diseases among children and adolescents is widely analyzed. The structure of common diseases is related to the ecological situation. Comparing the infant mortality rate in Atyrau and Aktau shows that the total number of sick children in Atyrau is much higher than in Aktau. The pathology of children under the age of 14 includes respiratory diseases, parasitic diseases, diseases of the skin and subcutaneous tissue, nervous system and taste organs, digestion, as well as injuries and poisonings.

**Conclusion.** According to many researchers, the state of ecosystems in Atyrau region is characterized by a crisis. In the absence of a set of safeguards, the region may have an ecological catastrophe not only for this region, but also at the global level.

In order to provide the needs of the present generation and to preserve these opportunities for future generations, it is necessary to move towards sustainable development of the city, industry, energy, agriculture, transport, create and implement high-performance environmental protection techniques and tools. The transition to a sustainable development model is a long and complicated process that is caused by many conflicts.

Thus, in order to ensure sustainable development of the Atyrau region, it is necessary to work systematically to improve the economy, the environment, public health and social welfare of society.

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#### **АТЫРАУ ОБЛЫСЫНЫҢ ЭКОНОМИКАСЫНЫҢ ҚОРШАҒАН ОРТАҒА ӘСЕРІН ТАЛДАУ**

**Аннотация.** Аталған мақалада Атырау облысының әлеуметтік-экономикалық дамуы, аймақтың экономикалық дамуының басым бағыттары және оның қоршаған ортаға тигізетін әсері туралы мәселелер қарастырылған. Қазақстан бойынша Атырау облысы ірі мұнай және газ кен орнымен ерекшеленеді. Облыстағы экономикада басым сала энергетикалық, құрылыс материалдары, агроөндіріс пен балық өндіру саласы жақсы дамыған. Осы негізде тұрақты дамуға жаңа базалар құрылуға: әлеуметтік инфрақұрылымды жақсарту, жаңа жұмыс орындарын құру, жергілікті тұрғындарды максималды жұмыспен қамту, кадрлар дайындау жұмысы атқарылуда. Алайда облыс республикадағы экологиялық қолайсыз аймақ қатарында ерекше аталады. Аймақтағы экологиялық жағдайды табиғи климаттық, антропогендік факторлар мен мұнай және газ өндірісінің қарқынды дамуын қалыптастырады. Әлемдік деңгейдегі мәселелердің бірі – мұнай өндірісінен пайда болатын қалдық

өнімдерінің қоршаған ортаны ластауы. Осыған орай, бұл мәселені шешуге, бүгінгі таңда үлкен назар аударылуда. Себебі, жоғарыда айтылып кеткен ластаушы көздер қоршаған ортаға әсерімен қатар, адам ағзасында туындайтын қайтымсыз әсерлерге, түрлі ауруларға шалдықтырады. Мақалада аймақ бойынша мұнай өнімдерінің сыртқы қоршаған ортаға тигізетін зардаптарына, тұрғылықты халықтың денсаулығына тигізетін әсеріне, Каспий теңізінің қазіргі жағдайына талдау жасалған.

**Түйін сөздер:** әлеуметтік-экономикалық даму, өнеркәсіптік даму, экономикалық қызмет, мұнай-газ кешені, экологиялық апат, экожүйе жағдайы.

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### АНАЛИЗ ВЛИЯНИЯ ЭКОНОМИКИ АТЫРАУСКОЙ ОБЛАСТИ НА ОКРУЖАЮЩУЮ СРЕДУ

**Аннотация.** В статье рассматриваются вопросы социально-экономического развития Атырауской области, приоритетные направления экономического развития региона и его влияние на окружающую среду.

Атырауская область - крупнейшее нефтегазовое месторождение Казахстана. В экономике региона хорошо развиты энергетика, производство строительных материалов, сельское хозяйство и рыболовство. На этой основе создаются новые основы устойчивого развития: улучшение социальной инфраструктуры, создание новых рабочих мест, максимальная занятость местного населения, подготовка квалифицированных специалистов. Однако регион назван самым экологически неблагоприятным регионом страны. Экологическая ситуация в регионе формируется климатическими, антропогенными факторами и интенсивным развитием нефтегазодобычи. Одной из глобальных проблем является загрязнение окружающей среды отходами нефтедобычи. В связи с этим сейчас уделяется большое внимание решению этой проблемы. Это связано с тем, что загрязняющие вещества, упомянутые выше, помимо окружающей среды наносят вред организму человека и приводят к различным заболеваниям. В статье анализируется влияние нефтепродуктов на окружающую среду, на здоровье населения и состояние Каспийского моря.

**Ключевые слова:** социально-экономическое развитие, промышленное развитие, экономическая деятельность, нефтегазовый комплекс, экологическая катастрофа, экосистема статус.

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ATTRACTIVENESS OF ALMATY**

**Abstract.** Modern conditions of reproduction, increased competition among regions for resources have sharply increased the importance of the issues of investment support for the development of the regional economy. The problem of forming a mechanism of regional investment policy, increasing investment activity and attractiveness, improving the investment climate is one of the key issues in the field of regional economy and regional economic policy of the Republic of Kazakhstan. The authors note that the government of Kazakhstan pays considerable attention to investing in the regional economy, leveling out inter-regional differences, overcoming crisis phenomena and the backlog in the economic development of individual regions. The reasons for the investment attractiveness of Almaty are listed, problems arising on the path of improvement and methods for their solution are proposed.

**Keywords:** investment, attractiveness, innovation, activity, conditions.

**INTRODUCTION**

In recent years, efforts to ensure sustainable economic growth and stabilization of macroeconomic indicators have yielded good results, which gives grounds to include Kazakhstan among those countries where the reform of the economy is quite successful. In the Message of the President of the Republic of Kazakhstan to the people of Kazakhstan “Kazakhstan’s Way - 2050: Common Goal, Common Interests, Common Future” noted:

“Attracting foreign investment should be fully used to transfer knowledge and new technologies to the country” [1].

By the criterion of “investment attractiveness”, Kazakhstan in 2018 in the Doing Business rating (Doing Business), compiled by a group of analysts from the World Bank, ranks 36th (10 indicators) among 190 countries. It would seem that the country has reached a certain growth, taking measures to improve the performance in the specified rating, but not all foreigners know or are aware of Kazakhstan.

There is no reason to talk about the country's reforms, competitive advantages and the investment attractiveness of its economy. This is evidenced by the occupation of our state in the International Trade indicator, in the rating of “Doing Business” (“Doing Business”) of the 123rd place. We are not the best in the Corruption Perceptions Index published by Transparency International, in 2018 Kazakhstan ranked 122nd (where on a scale of 100 points means the lowest) ...

Almaty is the largest city and the largest economic center of Kazakhstan. It is one of the most investment-attractive regions of the country. In January-June 2018, the city provided a fifth of GDP (20.3%) across the country, which is the highest among other regions of the country, also provided about half of the volume of wholesale (48%) and more than a quarter of retail operations (30%).

**MAINPART**

The adopted new investment strategy of the Republic of Kazakhstan focuses on the development of innovations, the transfer of advanced technologies, the promotion of industry digitalization and standardization. It clearly defines the tasks: where and how much we need to attract investors. At the same

time, it is important that today all regulatory legal acts regulating investment activity in our country are translated into English. This greatly facilitates work with investors who have a more complete picture of the investment climate of Kazakhstan and the advantages that are available here.

Over the years, Kazakhstan has demonstrated high rates of FDI attraction, especially in the extractive industries. At the same time, for the implementation of the country's large-scale plans to diversify the economy, FDI is needed, which implies not only financial investments, but also knowledge transfer, high-tech equipment and the provision of opportunities for the development of human resources. For investors with high mobility on an international scale, the decision to choose a location for investment depends mainly on the stability, transparency and predictability of the business environment, proximity to markets, availability of infrastructure and skills. The development of specific industry policies is becoming an increasingly important factor for meeting these key requirements of the business community.

The adopted legislative acts and organizational measures contributed to the strengthening of the investment attractiveness of the country and, accordingly, the inflow of foreign investment in the Kazakh economy. As a result, Kazakhstan was the first among the CIS countries to receive an international investment grade rating.

The industrial zone was created to provide state support to private entrepreneurship and is intended, first of all, for the development of priority industries in the city of Almaty - these are engineering, food, light, pharmaceutical, chemical industries and the production of building materials. At the same time, preference is given to investment projects aimed at the redeployment of industrial enterprises from residential areas of the city, the release of technological, innovative products, import substitution.

Table 1 - Distribution of regions of the Republic of Kazakhstan by groups depending on the level of investment attractiveness

Group	Characteristics of the investment climate	Region
Group 1	High potential and high risk	Karaganda and East Kazakhstan regions
Group 2	Limited investment potential combined with lowest risk	Astana, Aktobe, Zhambyl, Western Kazakhstan, Kyzylorda, Mangystau, North Kazakhstan and South Kazakhstan
Group 3	High investment potential combined with moderate risk	Pavlodar, Atyrau and Almaty

In its investment policy, Kazakhstan is focused on creating favorable conditions for investors. An investor can either invest in more profitable areas located in a region with increased investment risks, or in less efficient projects, but in more “quiet” regions for an investor. Finding the "investment optimum" will help the distribution of the regions of Kazakhstan by groups presented in table 2.

As can be seen from the table, all the regions of Kazakhstan are divided into three main groups. Each of these groups is different peculiar investment climate. Optimal for the conditions of Kazakhstan is the position of the group, which includes the Pavlodar, Atyrau and Almaty regions. They are characterized by a combination of sufficiently high potential and moderate risk.

In Kazakhstan, despite signs of growth, the unevenness of regional development is preserved and, moreover, there is a lack of effective regulators of the concentration and distribution of investment resources. As a result, most regions of the Republic of Kazakhstan need both to attract large-scale investments and effective mechanisms for managing investment processes, taking into account local business conditions and potential in the region.

In our opinion, in the near future, major changes will occur in the volume of investment activities in areas with a developed agricultural sector: Kostanay, North Kazakhstan, Akmola regions are the main producers of agricultural products. The growth rates of investments in the Almaty region, whose agrarian potential is currently substantially under-utilized, are foreseen at a faster pace. It also has an important role to play in reducing the region's import dependence in food, in providing food to the largest metropolis of the country. The results of the analysis of the main parameters of the investment attractiveness of the regions of Kazakhstan show that the Atyrau and Mangystau oblasts, as well as the cities of Almaty and Astana, by most criteria, are more preferable for carrying out investment activities. In other regions, work is to increase their attractiveness to private investors. Foreign capital preferred and prefers to go to those industries that produce products that are of strategic importance to it in the long run, since its

implementation is guaranteed by relatively stable demand in the world market. In Kazakhstan, the geography of investment activity due to foreign sources of financing (18% of the total investment) almost completely coincides with the location of the most important hydrocarbon deposits in the Atyrau, West Kazakhstan, Mangistau regions.

An essential condition for stable business development is the provision of infrastructure. To this end, the Industrial Zone operates in Almaty, where manufacturing projects can receive land with a ready-made infrastructure on favorable terms. For high-tech companies, there is a special economic zone “Innovation Technology Park”, where tax and customs privileges are granted to residents. In Almaty, about a thousand projects are supported by programs of concessional lending to SMEs. The Industrialization Map includes 100 projects with the creation of 12 thousand jobs. At the same time, a strategy was developed to increase the investment attractiveness of the city.

The developed strategy for attracting investments includes four areas: "Improving the quality of the institutional environment", "Improving the quality of business infrastructure", "Image promotion and informational support" and "Attracting investment in priority sectors through proactive project targeting."

Almaty is still in the position of the most sought-after city of the republic for doing business. The number of registered legal entities in the city is a significant proportion of the country. About 7,500 companies operate with the attraction of foreign investors.

Non-resource economy prevails in Almaty, where a large share falls on services and trade (86% in GRP), as well as infrastructure projects. When forming the list of niche projects, National Company Kazakh Invest JSC is based on the priority sectors indicated in the National Investment Strategy Investment Promotion Program.

A very significant moment in the duality of the most stable in their positions in the ranking of regions of Kazakhstan. On the one hand, these are diversified and progressive cities of republican significance Astana and Almaty, and on the other hand, these are extremely inflexible both economically and socially, Mangistau and Kyzylorda oblasts. Further to the extremes, there is a progressive and effective, but highly specialized and highly concentrated Atyrau region, or a capacious, but not effective Karaganda region. And for the last five years the dynamics of changes in this plane is absent.

In addition to improving legislation and introducing new technologies, an important factor in the attractiveness of the city for private investment, including foreign investment, is a comfortable urban environment, developed service and high quality of human capital.

Based on the analysis of the inter-regional ranking of investment attractiveness in the framework of the forecast of positive regional development, we can draw the following conclusions and recommendations:

- The state needs to pursue a policy aimed at attracting foreign and private investment by providing tax incentives and preferences for various activities to encourage the development of poorly developed regions;
- it is necessary to develop a new effective model for the development of the country's regions, taking into account the long-term development of the regions in accordance with their current specialization;
- a necessary condition is cluster interaction between regions, their mutual cooperation.

Most of the investors surveyed in Kazakhstan expressed confidence that the country has significant potential, and its leadership has a long-term vision. Foreign investment plays an important role in the implementation of large-scale government initiatives aimed at the further development of the economy.

Our task is to make Almaty comfortable, convenient, to improve the quality of life for each person. To do this, the city must be provided with an annual economic growth of at least 5% on average, an increase in labor productivity by 2 times, an increase in the GRP per capita over 15 years by 1.5, and over 30 years - by 3 times. The key condition for this is a systemic change in the structure of the economy. Experts predict that by 2035 the population of Almaty will be more than 3 million people. That is, the growth of the economically active population of 700 thousand people is necessary to provide jobs in the sectors of IT, education, health care, engineering, high-tech industry, art and tourism. For this, a comfortable, innovative, environmentally friendly environment should be created, and high quality education and health care should be ensured following the example of OECD countries.

The construction of intrasectional roads, cable channel for laying electrical lines, the second stage of water supply and gas supply networks, crossings for connecting to the main sewage collector, distribution

railway station, administrative complex, storm sewer network. Design estimates are under development for the construction of distribution networks for sewage, gas supply, railway tracks, fire depot, low-voltage networks and dispatching.

The main directions of the new investment policy are: improving the efficiency of investments in order to stabilize and grow the economy, strengthen its social orientation; finding and implementation of the most profitable forms of ownership and options for the development of market relations using scientific developments; the acceleration of technical re-equipment of production with the introduction of advanced technical and technological systems, in particular, for the deep processing of raw materials and accumulated waste in heavy industry, an increase in the production of consumer goods; attracting foreign investment on a mutually beneficial basis in priority sectors of the economy; the creation of a scientific system of motivations and sanctions, which in the conditions of market relations reduce the time and cost of construction.

Also in Kazakhstan, the conditions for attracting foreign labor have been revised; a Specialized Judicial Panel on Investment Disputes has been established under the Supreme Court. The work on concluding international agreements on the promotion and mutual protection of investments has been improved.

## CONCLUSION

The position of our state as a major interregional transport center requires the establishment of a more liberal regime for foreign investment. This will allow us to attract the necessary flow of finance and knowledge, to develop our capabilities and regular trade exchanges with foreign countries. An open and liberal investment policy with clear, effective and strictly enforced laws enforced by an impartial administration is the most powerful incentive to attract foreign investment. The development of such a policy should be one of our main objectives, since it is difficult to imagine how Kazakhstan can achieve rapid economic growth and modernization without foreign capital, technology and experience.

Kazakhstan's investment policy is designed to ensure a favorable investment climate and will be based on the principles of economic pragmatism: profitability, return on investment and competitiveness, as well as ensuring the growth of economic potential through the development of new points of economic growth and the identification of new market niches. For Kazakhstan, attracting investments is a top priority. It is complicated by the fact that competition for direct investment is growing both in Central Asia and around the world.

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## АЛМАТЫ ҚАЛАСЫНЫҢ ИНВЕСТИЦИЯЛЫҚ ТАРТЫМДЫЛЫҒЫН ЖЕТІЛДІРУ

**Аннотация.** Репродукцияның қазіргі жағдайлары, өңірлер арасындағы ресурстар үшін бәсекелестіктің өсуі аймақтық экономиканы дамыту үшін инвестициялық қолдаудың маңыздылығын арттырды. Аймақтық инвестициялық саясат механизмін қалыптастыру, инвестициялық белсенділікті арттыру және инвестициялық тартымдылықты арттыру, инвестициялық ахуалды жақсарту проблемасы аймақтық экономика мен Қазақстан Республикасының аймақтық экономикалық саясаты саласындағы негізгі мәселелердің бірі болып табылады. Авторлар Қазақстанның үкіметі өңірлік экономикаға инвестиция салу, аймақаралық келіспеушіліктерді жою, дағдарыстық құбылыстарды жеңу және жекелеген өңірлердің экономикалық дамуындағы артта қалу мәселелеріне үлкен көңіл бөледі деп атап көрсетеді. Алматы қаласының инвестициялық тартымдылығының себептері, жақсарту жолында туындайтын проблемалар келтірілген, оларды шешу әдістері ұсынылған.

**Түйін сөздер:** инвестициялар, тартымдылық, инновация, қызмет, шарттар.

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### СОВЕРШЕНСТВОВАНИЕ ИНВЕСТИЦИОННОЙ ПРИВЛЕКАТЕЛЬНОСТИ Г.АЛМАТЫ

**Аннотация.** Современные условия воспроизводства, обострение конкуренции между регионами за ресурсы резко повысили значимость вопросов инвестиционного обеспечения развития региональной экономики. Проблема формирования механизма региональной инвестиционной политики, повышения инвестиционной активности и привлекательности, улучшения инвестиционного климата является одной из ключевых в сфере региональной экономики и региональной экономической политики РК. Авторы отмечают, что правительство Казахстана уделяет значительное внимание на инвестирование экономики регионов, выравнивание межрегиональных различий, преодоление кризисных явлений и отставания в экономическом развитии отдельных регионов. Перечислены причины инвестиционно-привлекательности г. Алматы, проблемы возникающие на пути совершенствования и предложены методы их решения.

**Ключевые слова:** инвестиции, привлекательность, инновации, активность, условия.

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## **VISUALIZATION BASED ON COMPUTER METHODS FOR PROCESSING INFORMATION**

**Abstract.** Human-centered visualization of information requires reliable and appropriate user research that improves the system or confirms its benefits. New methods, information visualization approaches are usually evaluated by taking a lot of time and money, if they constitute minimal resources, this leads to results that may be invalid. If, the number of participants is usually limited and does not allow to get a reliable assumption about the results. Thus, performance indicators play a key role in the visualization of information, the existing web survey tools are not convenient. In this article, the authors present new ways to evaluate information visualization systems via the Internet. In general, the visualization of information plays an important role in ensuring the possibility of data assimilation and the transformation of raw information into actionable ideas.

**Keywords:** Information visualization, user research, human perception, assessment methods, information processing.

### INTRODUCTION

Our channel of visual perception can perceive and process information much faster than other channels. A person can easily determine the difference and / or patterns in the data, if you present the correct visual presentation of the data. This is what visualization seeks to achieve, that is, to transform or display data into their proper visual presentation, to allow knowledge detection and decision-making assistance. Visualization is an active and popular area of research in the field of data and a suitable technique for almost any real-world application. Methods from computer science, mathematics, cognitive science and the science of perception, and physics often adapt to different tasks of visualization.

Information visualization is the process of presenting data in a visual and meaningful form so that the user can better understand them. Dashboards and scatter plots are typical examples of information visualization. By displaying the overview and displaying the corresponding links, information visualization allows users to efficiently and effectively obtain information from abstract data.

Information visualization plays an important role in enabling data digestion and the transformation of raw information into actionable ideas. It relies, in particular, on the areas of human-computer interaction, visual design, computer science and cognitive science. Examples include world map-style views, line graphs, and three-dimensional virtual building projects or city plans.

### MAIN PART

The process of creating information visualization usually begins with an understanding of the information needs of the target group of users. Qualitative research (for example, user interviews) can show how, when and where visualization will be used. By accepting these ideas, the developer can determine what form of data organization is needed to achieve user goals. Once the information is organized in a way that helps users understand it better and helps them use it to achieve their goals, the visualization techniques become the following tools that the designer uses. Visual elements are created (for example, maps and graphics) along with corresponding labels, and visual parameters such as color,



contrast, distance, and size are used to create the corresponding visual hierarchy and visual information path.

Information visualization is becoming more interactive, especially when used on a website or in an application. Thanks to the interactivity, users can manipulate visualization, which makes it very effective for meeting their needs. Through interactive visualization of information, users can view topics from different perspectives and manipulate them until they achieve the desired understanding. This is especially useful if users need a research experience. Visualization, sometimes called visual data analysis, uses a graphical representation of the data as a means of gaining an understanding and understanding of the data.

The main aim is to uncover the problems and ease the issues in visualization of Big Data and at the same time the objective of finding valid solutions for the problems in Big Data Visualization remains. The sections mentioned below elaborates the present tools, techniques and platforms which can be used for Visualization in Big Data. We reveal disadvantages of currently existing visualization methods based on the results. Based on the results, a not so common approach is proposed: the capabilities and methods of virtual and augmented reality could be implemented to achieve Visualization of the big data. We also discuss about the applications of AR and big data and fields where it is used. Further in later sections we discuss about the user interface with presence of tangibility, advantages and disadvantages of trending technologies, such as VR and AR displays on the Big Data visualization.

The use of modern information visualization technologies in modern computer practice in physics allows us to consider physical processes, objects and phenomena from within and at any level of complexity. Openness, i.e. modifiability, allows you to add new features, to consider new, more complex tasks. A computer physical workshop is not independent of other forms of training; moreover, working with it requires preliminary acquaintance with theoretical material and the ability to solve analytically the simplest problems for these cases. For a qualitative understanding of the results, useful and, in some cases, physical analogies from other branches of physics are necessary.

Table 1 - Use of information theorists

Information and theoretical basis for visualization	Information and theoretical metrics in visualization, for measuring	Information and theoretical algorithms
<ul style="list-style-type: none"> <li>- visualization subdomains, such as volume visualization, network visualization, machine learning through visualization, interaction in visualization, and empirical research in the field of visualization;</li> <li>- perception and cognition in visualization;</li> <li>- visualization of uncertainty;</li> <li>- confidentiality visualization</li> <li>- Distributed data management and visualization.</li> </ul>	<ul style="list-style-type: none"> <li>- abstraction;</li> <li>- aesthetics;</li> <li>- Data complexity, visualization, tasks and user spaces (alphabets);</li> <li>- economic efficiency of visualization processes;</li> <li>- visibility or similarity of visual objects (for example, glyphs);</li> <li>- saving information (or loss) of visual display;</li> <li>- difference in visualization;</li> <li>- uncertainty in visualization;</li> <li>- visualization capabilities.</li> </ul>	<ul style="list-style-type: none"> <li>- filtering and screening (for example, isosurface, seeding);</li> <li>- grouping and clustering (for example, the union of edges);</li> <li>- layout (for example, minimizing interference);</li> <li>- browsing optimization;</li> <li>- Extraction and tracking functions;</li> <li>- time-varying data;</li> <li>- multidimensional visualization;</li> <li>- visualization in place;</li> <li>- visualization of the ensemble;</li> <li>- transfer function design.</li> </ul>

The holistic nature of information-theoretic reasoning has allowed many visualization applications, including the placement of a light source, the choice of the type when rendering a grid, the choice of the type when rendering a volume, the focus of attention when rendering a volume, three-dimensional rendering with multiple resolution, the selection of objects in an unstable multipole visualization, the allocation of functions in visualization of time-varying volume, design of transfer function, combining multimodal data, estimating isosurfaces, measuring throughput with aids in observation, measurement of

the content of information in multidimensional data, and confirmation of the mathematical feasibility of visual multiplexing. Perhaps one of the most interesting applications is the ability to use information theory to support the visualization discipline, that is, to explain some or all of the observed phenomena or events in visualization.

Increasing the capabilities of computing technology is today a stimulus for expanding the potential of visualization, which has become an integral part of many branches of human activity.

As you know, the idea presented in a visual graphic form significantly increases its strength - that is why the new trends observed today in visualization technology are of particular interest. In addition to the qualitative changes in the presentation of information today, new developments are noticeable in the visualization, such as integration with various applications from other areas, interactive technologies of visualization and animation of large sets of multidimensional data sets in real time, advanced methods for building the interface, and much more. Of great importance for the visualization of information is the efficiency of the technology, since the visualization itself does not solve the problem, but serves as an auxiliary set of tools and concepts with its own object world.

Since the transformation of data into accurate and meaningful images is an extremely difficult process, the visualization of scientific data is in itself an area of complex and important scientific research. Algorithms, computer architecture and visualization systems are constantly being improved to provide the ability to perform more detailed and detailed analysis of large amounts of data. Research is being conducted to improve the analysis, which makes it possible to identify characteristics and track parameters, and to consider a number of other issues that are crucial for enhancing visualization capabilities.

The main models that allow for a comprehensive analysis of data: analysis and preliminary processing of source data, the clustering model, the classifier construction model, the associative rules construction model. For each of the models, adequate methods for visualizing the results were selected and implemented.

Preliminary data analysis. This stage is very important. If necessary, you can pre-convert the data using different filters. For example, sample data. This is necessary for some algorithms, such as building association rules that cannot work with quantitative data. The accuracy of the further results depends on a competent analysis of the initial data and the choice of an adequate processing model.

Depending on the type of source data (processing of quantitative and qualitative features is allowed), linear graphs or histograms are constructed, respectively. For quantitative attributes, it is possible to display a moving median and a moving average with a given window. It also provides the ability to display dependencies between different attributes. Similar dependencies are displayed using linear and point graphs. Particular attention is paid to the display of changes in parameters over time. Using linear graphs, polynomial and exponential models of the original features are presented.

With the help of computer graphics, the sampling process becomes simple and fast, allowing you to view preliminary results at any time.

Such methods allow you to visually provide the source data itself, the dependencies between the various data.

Classification methods. Often, when analyzing, it is required to determine which of the known classes the objects under study belong to, i.e. classify them. In Data Mining, the classification task is considered as the task of determining the value of one of the parameters of the object being analyzed based on the values of other parameters.

The results of classification methods are also presented in a structural form and in the form of graphs. The creation of classifiers is carried out on the basis of algorithms for constructing decision trees (hereinafter simply "trees").

Methods for constructing associative rules. Finding association rules is one of the most popular Data Mining applications. The bottom line is to define frequently occurring sets of objects in a large variety of such sets. This task is a special case of the classification problem.

The application of methods for constructing associative rules is possible only to qualitative attributes. It is convenient to display methods for constructing associative rules in three-dimensional space. The OX axis and the OY axis are deferred, respectively, the values of variables located in the left and right sides of the rule, and the OZ axis defers the validity of the rule.

Clustering methods. The task of clustering is to divide the studied set of objects into groups of “similar” objects, called clusters. The word cluster [4] of English origin (cluster) is translated as a clot, bundle, group. Related concepts used in literature, class, taxon, condensation.

Clustering can be used in almost any industry where research of experimental or statistical data is necessary.

Four different ways of visualizing the results of cluster analysis have been implemented, which can greatly facilitate the work of an expert in the analysis of identified similar groups of objects. The distribution of raw data across clusters can be analyzed using dotted graphs. The essence of the method: the values of the selected attributes are plotted along the axes of the chart, the belonging of objects to different clusters is displayed on the chart in different colors. Effective ways to reduce the space of the original features are the main component algorithms and multidimensional scaling. They allow us to present the distribution of the initial data by clusters in the space of two main components; this helps to visually evaluate the grouping of the studied data and the clusters found. Histograms are used to display the probability distribution of the results obtained by clusters.

The visualization subsystem developed in the framework of the analysis software package has made it possible to significantly simplify the interpretation of information obtained in the data analysis process.

Thus, we were once again convinced of the convenience and necessity of visualizing processes when working with data.

The presented visualization methods were implemented in the telemetry information processing software package.

Before embarking on visualization, a search for graphic libraries was carried out. The following libraries were considered: JSCi, JFC, JFreeChart.

The JSCi library almost immediately revealed serious shortcomings that did not allow it to be used for visualizing large amounts of data. For example, the color palette is limited to 8 colors.

The following graphic library is standard in Java, JFC (Java Foundation Classes) is easy to use, universal, but the image quality is inferior to the JFreeChart library.

After reviewing graphic libraries that provide 2D graphics, the JFreeChart library was chosen [5].

The advantages of this library: high quality images; It is possible to scale the image and save graphs in the format \* .png, etc. The main advantage is the presence of a large selection of different types of graphs, which made it possible to expand the set of data visualization methods. The library does not have a tight binding to the system, which allows it to be used in various operating systems. This makes the software product multi-platform. And this is not an important aspect at the present time.

With 3D libraries everything is much more serious. Huge selection of different libraries. After the analysis, the choice was stopped on OpenGL. The reason for choosing OpenGL, not DirectX, is in the multi-platform library. A search was made for libraries working with OpenGL. As a result, the main libraries were allocated: LWIGL and JOGL.

We also paid attention to the education system. Our analysis of psychological, pedagogical and methodological literature devoted to the problem of visualization of educational material using computer tools allowed us to state the following:

- there are no approaches to the interpretation of the concepts of “visualization” for various disciplines of general professional training, each of the authors explains the essence of these concepts with particular examples that reveal only some of their aspects;

- the theoretical foundations of visualization with the help of information technologies are not sufficiently developed, their methods of setting, examples, methods, forms, etc., have not been identified and described;

- the methodological features of using a computer in visualizing and implementing the principle of visibility in the process of using mathematical packages have not been disclosed [3–6].

The results of our survey of students of physical and mathematical faculties of pedagogical universities show the need for systematic use of computer in studying mathematical disciplines, as they activate learning activities, increase learning efficiency, develop students' visual, mathematical, functional and research thinking, increase the visibility of learning, the ability to see the method "From the inside." Educational mathematical information is a system of signs - words, formulas, tables, diagrams, graphs, illustrations. It is aimed at mastering the content of mathematical theory and its practical applications. So,

in order for a student to master the ability to visualize information, it is necessary to know the laws of its transformation into a convenient way of presenting information in a particular software environment. In relation to a particular course, a student must first of all know the theoretical foundations of the method of solving a problem to realize this; secondly, the possibilities of the mathematical package for the implementation of the method, and should also be able to illustrate knowledge, clearly presenting one or another method.

## CONCLUSION

The library is multi-platform, which allows you to develop visualization projects on many modern operating systems.

To visualize the analyzed data of various processing and forecasting projects, the widespread introduction of computer graphics will make it possible to present the results of solving problems by various methods and algorithms fairly quickly, visually and with minimal cost. Graphics is becoming not only a way to visualize the results, but also a complete tool for working with the results. This direction is promising and developing. Already today, many methods can be more clearly demonstrated in three-dimensional space, for example, methods for constructing associative rules.

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## ӨНДЕУ МӘЛІМЕТТЕРІНЕ КОМПЬЮТЕРЛІК ҚОЛДАНУ НӘТИЖЕЛЕРІНЕ КӨРСЕТУ

**Аннотация.** Ақпаратты адамға бағытталған визуализациялау жүйені жақсартатын немесе оның артықшылықтарын растайтын сенімді және лайықты пайдаланушы зерттеулерін талап етеді. Жаңа әдістер, ақпараттық визуализация тәсілдері, әдетте, аз уақытты және ақшаны алып, егер олар минималды ресурстар болса, бұл жарамсыз нәтижелерге әкеледі. Егер қатысушылардың саны әдетте шектелген болса және нәтижелер туралы сенімді болжам жасауға мүмкіндік бермесе. Осылайша, өнімділік индикаторлары ақпараттық визуализацияда шешуші рөл атқарады, қолданыстағы веб-сауалнама құралдары ыңғайлы емес. Осы мақалада авторлар Интернет арқылы ақпараттық визуализация жүйелерін бағалаудың жаңа әдістерін ұсынады. Тұтастай алғанда, ақпараттық визуализациясы деректерді игеру мүмкіндігін қамтамасыз етуде және шикізат ақпаратын тиімді идеяларға айналдыруда маңызды рөл атқарады.

**Түйін сөздер:** Ақпараттық визуализация, пайдаланушылық зерттеулер, адам қабылдау, бағалау әдістері, ақпаратты өңдеу

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## ВИЗУАЛИЗАЦИЯ НА ОСНОВЕ КОМПЬЮТЕРНЫХ МЕТОДОВ ОБРАБОТКИ ИНФОРМАЦИИ

**Аннотация.** Ориентированная на человека визуализация информации требует достоверных и надлежащих пользовательских исследований, которые улучшают систему или подтверждают их преимущества. Новые методы, подходы визуализации информации обычно оцениваются, занимая много времени и средств, если они составляют минимальные ресурсы, то это приводит к результатам, которые могут быть недействительными. Если, количество участников обычно ограничено и не позволяет получить достоверное предположение о результатах. Таким образом, показатели производительности играют ключевую роль в визуализации информации, существующие инструменты веб-опроса не удобны. В этой статье авторы представляют новые пути, которые позволят оценивать системы визуализации информации через Интернет. В целом, визуализация информации играет важную роль в обеспечении возможности усвоения данных и превращения необработанной информации в действенные идеи.

**Ключевые слова:** Визуализация информации, исследование пользователя, восприятие человека, методы оценки, обработка информации.

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**STAGES OF FORMATION AND DEVELOPMENT OF THE NATIONAL  
CURRENCY OF THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** Under the government's strict financial policy that followed the creation of the national currency, market institutions have been gradually formed and matured in the novel macroeconomic environment. The introduction of our own legal tender laid the foundation for our economic successes that came later. This is evidenced by the active development of the financial and credit sector and the Tenge's stability. Tenge is not the first native money in our country. Money was used on the territory of ancient Kazakhstan centuries back. The Turkic rulers in Syrdarya, near Otyrar, and the Turkic peoples in Semirechye produced their own money in VII-VIII centuries. Coin houses operated in Otrar and Isfidjab. The mid-X and VIII centuries witnessed a rapid growth of cities, commodity production and trade. In retail, mostly copper fulus (coins) were used. Gold was also in circulation, not only in coins, but also traded by weight, ie, broken into pieces as needed. In late XIVth century Amir Temir's coins were introduced to Kazakhstan. In addition, Samarkand, Bukhara and Tashkent coins, predominantly copper dinars, were widely used in Kazakh cities. Thus was the history of money in Kazakhstan. Facilitating the country's industrial-innovative development, building on the current achievements, preserving the value of the national currency and achieving financial stability are the most important opportunities for all Kazakhstan citizens.

**Keywords:** tenge, currency, finance, money, trade, commodity, exchange, credit, bank, securities.

One of the most important events in Kazakhstan's new sovereign chronicles was the issue of Tenge in November 1993. It was a historic step required to implement the radical socio-economic reforms to strengthen the country's independence. Under the government's strict financial policy that followed the creation of the national currency, market institutions have been gradually formed and matured in the novel macroeconomic environment.

The introduction of our own legal tender laid the foundation for our economic successes that came later. This is evidenced by the active development of the financial and credit sector and the Tenge's stability. Tenge is not the first native money in our country. Money was used on the territory of ancient Kazakhstan centuries back. The Turkic rulers in Syrdarya, near Otyrar, and the Turkic peoples in Semirechye produced their own money in VII-VIII centuries. Coin houses operated in Otrar and Isfidjab. The mid-X and VIII centuries witnessed a rapid growth of cities, commodity production and trade. In retail, mostly copper fulus (coins) were used. Gold was also in circulation, not only in coins, but also traded by weight, ie, broken into pieces as needed. In late XIVth century Amir Temir's coins were introduced to Kazakhstan. In addition, Samarkand, Bukhara and Tashkent coins, predominantly copper dinars, were widely used in Kazakh cities. Thus was the history of money in Kazakhstan.

In the 20th century Kazakhstan became part of the unified ruble zone. This was the case until November 1993, by which time Kazakhstan had become an independent state. On July 26, 1992, Russia announced that with the introduction of its own currency, it was separating itself from the financial systems of other countries, including those in the "ruble zone" such as Kazakhstan, Uzbekistan, and Tajikistan. Also, the Central Bank of Russia offered Kazakhstan to issue a ruble with Kazakh symbols.

However, they put forward the following requirements: first, in order to use the ruble Kazakhstan should enter Russia as a subject of the Russian Federation; secondly, over \$ 700 million in gold and foreign exchange reserves accumulated in the first years of independence, had to be handed over to the central bank of Russia. In short, they suggested trading the ruble for Kazakhstan's independence. At that time, the USSR rubles still remained in circulation in Kazakhstan, and the inflow of money from other ruble regions was not limited. Finally, the ruble was further devalued and the rate of inflation exceeded 2900 percent. These were some of the negative events that led to the release of Kazakhstan's own currency [1].

In 1992, a decision was made to introduce a new national currency immediately. A special commission was formed, which included highly qualified specialists Mendybay Alin, Timur Suleimenov, Akymaly Duzelkhanov and Khairulla Gabzhalilov, and began working on the development of a new currency.

The look of new currency was laid out by designers in Almaty in exceptionally secretive conditions. Apart from designers, only a few people in the government leadership knew about it. There were also some suggestions for the new currency name. President Nursultan Nazarbayev offered the name "Altyn". Then it was decided to call new money "Tenge". The word "Tenge" derives from the silver money of the Turkic states of the Middle Ages called "Denge", "Tanga". It should be noted that the Russian word for money - *dengi* - has the same etymology.

Tenge as a national currency played a part in the history of our country as the economic basis of independence. On the other hand, Tenge is a complete part of our history, a form of its own, "- said N. Nazarbayev [2].

The drawings on the first Tenges were born in the dacha of writer Olzhas Suleimenov. The Head of the State recalls in his book "Kazakhstan's Way" the Tenge operation: "Every evening I would travel to the countryside where our team was working. We would have a big disagreement about the name of money. They suggested that it be called "Som", "Money" or "Tenge". I liked the name "Altyn". Finally, from the medieval history, we picked "Tenge" name as homage to the molten "Tanga" money that was circulating in the Kipchak steppes. Indeed, the words "dengi" and "tenge" were the same [3-4].

On August 27, 1992, the group of designers who approved the Tenge samples in the National Bank, traveled to England, since there was no money-printing plant in our country. Even the funds needed for printing the new legal tender were scarce. The President of Kazakhstan, Nursultan Nazarbayev, recalled at that time that he had no money to rent an airplane and rent an airport for an international visit. During this period, a financial reform was being carried out in the country and the necessary financial infrastructure of the national currency was being established. Tenge was printed at a mint factory in the UK called Harrison & sons, while the first metal coins were developed in Germany.

After that, According to Nazarbayev, "We managed to raise seven million dollars and paid for the remainder of our printed money. We rented four IL-76 planes and imported 60 percent of the money supply. It was a very confidential operation. Documents stated: "Property necessary for the development of the Presidential residence." Prior to that, we had underground warehouses built in the regions. Four aircraft made eighteen flights per week, from London to Uralsk and to the regions. I declared November 12 as the date of the national currency issue. We had about twenty days left. I had all the leaders of the National Security Committee engaged in the operation. The most difficult thing was to deliver the money to all the regions and to all the banks. It took eight days. Perhaps, there has never been an introduction of new money in the world so fast and successful," President recalled of 1993 [5-6].

On November 1, 1993, the National Bank's branches in the regions received secret envelopes to be opened on "Day X". And three days after the Presidential Decree a State Commission for the introduction of the National Currency Tenge was created. The State Commission established by the Presidential Decree on November 3, 1993, prepared a concept for the introduction of the national currency. This document defined the terms, the method of introducing new currency and delivering it to exchange offices, the coefficient and limits of cash conversion, exchange rate formation and other important issues. On November 12, 1993 the Presidential Decree "On introduction of the national currency of the Republic of Kazakhstan" came out. It read as follows: "On November 15, 1993, from 08.00 am, the national currency of the Republic of Kazakhstan - Tenge - shall be put into circulation on the territory of the Republic of Kazakhstan as a legal tender instrument. Tenge consists of 100 Tiyns (coins). Money in circulation in the Republic of Kazakhstan shall have the form of banknotes and coins". The first exchange rate was 4.75

Tenge per US dollar. Each Tenge converted to 500 rubles. Thus, on November 12, 1993, a decision was made to introduce the national currency on the territory of Kazakhstan, and on November 15-18, measures were taken to convert the USSR rubles issued in 1961-1991 to the national currency Tenge [7-8].

On November 13 all newspapers provided images of the new currency. National and regional press covered the procedures for the exchange of notes and paper Tiyns. A time frame of November 15 - 20 was allowed for Rubles to be converted to Tenge. In just six days, people had to convert their money into the currency of an independent country. Citizens who saved paper money now stood in queues for the Tenge. Everyone remembers the days. Those who had collected and stored the frayed "grass money" marveled at the new banknote for days. The images of the enlightener Al-Farabi, Kuishi Suychinbai, scientist Shokan Valikhanov, poet Abai, Abylkhair khan, were taken in by the people. The regional office of the National Bank, 12 branches of 2-tier banks and cash offices were exchanging the money up to 19 hours per day. The old money was counted overnight and prepared to be sorted and dispatched. The most difficult work was done in the cash-desk office of the regional center. This team received 8 billion rubles in six days. About 362 thousand residents visited within those days. The population had accumulated 19.6 billion Rubles. 20 tons of Rubles loaded in 770 bags were burned. On November 22, 1993, pensions and wages started paying in Tenge. Currency exchange offices opened throughout the country. In Almaty a banknote factory of the National Bank and a mint in Ust-Kamenogorsk were put in operation. Over time Tenge's design has changed. Today, the banknotes are able to compete with the currency of developed countries. Anniversary and memorable coins are used in the republic along with coins in circulation. Anniversary and memorable coins can pay as per the value they have, but they have mostly cultural and educational meaning. They are issued in strictly limited amounts and are intended for sale at the collection value in Kazakhstan and abroad.

The first Tenge banknotes were able to deeply reflect the history of our country. The fronts of the Tenge carried the images of historic persons who have left an indelible mark in the cultural and political life of the country, as well as the architectural masterpieces and the beauties of our vast expanse. However, during the design of the banknotes, once the historical figures to be featured were picked, the artists faced the second issue - finding the real depictions of these individuals. The challenge was that there were no pictures of most of them. For example, nobody knows what Al-Farabi looked like. At the time, the picture presented was a standard one approved by the USSR Academy of Sciences. However, it was difficult to find his real depiction in the academic archives. The image of Abulkhair khan was found in the work of the English tourist Atkinson. The image of Ablai-khan was taken from the Russian sources. Suinbay's face came off the paintings of the founder of the modern Kazakh art Abilkhan Kasteyev[9].

In 2006, the national currency was radically changed. The images of the glorious people who had been in the previous model were removed. The new banknotes are made in a uniform style, the pictures are basically vertical on the face and horizontal on the back. In general, the design reflects modern images of Kazakhstan, including all state symbols, architectural structures and country landscapes. On the front side of the banknotes is the monument "Astana-Baiterek", as a symbol of the success of modern Kazakhstan architecture, design and engineering thought, a project of independent Kazakhstan. In 2010, memorial 1000 Tenge banknotes were issued to mark Kazakhstan's chairmanship in the OSCE, 2000 Tenge banknotes for the VII Asian Winter Games 2011, 1000 Tenge banknotes for Kazakhstan's chairmanship in organization of the Islamic Conference on May 25, 2011, 10000 Tenge banknotes dedicated to the 20th anniversary of Independence of the Republic of Kazakhstan on July 4, 2011, 5 000 Tenge for The Kazakh Eli monument on December 30, 2011, 2000 Tenge banknote depicting the map of Kazakhstan featuring the Irtysh River on March 29, 2013, and a 1000 Banknote for the Turkic inscription "Kultegin" on December 12, 2013 [10].

The Kazakhstan Tenge Mint presents highly appreciated coins at the prestigious Mint Exhibition in Berlin, and the popularity of its coins among experts and collectors has been growing day by day. The Kazakhstan Mint has introduced the quality management system ISO-9001: 2000 and has received coin manufacturing certificates and state awards. The awards for the enterprises are the finest examples of jewelry that meet the best world standards. In addition to the orders received from other central banks for coin manufacturing, KTM was invited to participate in several international coin programs, including the Olympic Games and the World Football Championship. The most recent achievements are the acquisition of bi-color coins, enameled extra-proof silver coins, silver and gold coins worth 50 000 Tenge weighing 1



kg for the 15th Anniversary of Tenge. The banknote factory, which began its construction in Almaty in 1993, was fully completed in 1995. It officially opened on May 19, 1995. Nursultan Nazarbayev will present the first million Tenge banknote printed here. Nowadays, independent Kazakhstan manufactures its currency on its own. The rims of the national currency are decorated with Kazakh ornaments. The first page depicts the famous Kazakh people. On the other side there are ornaments, landscapes and emblems. The images of the 1992 designs were approved. Our first Tenge notes presented the portraits of famous historical figures, and images of Alatau and Kokshetau, Khoja Ahmed Yassau Mausoleum, and stones found in Mangistau. In particular, the 1 Tenge banknote featured Abu Nasr al Farabi, 3 Tenge - Suyunbay, 5 Tenge - Kurmangazy, 10 Tenge - Shoqan, 20 Tenge - Abay, 50 Tenge - Abulhair Khan and 100 Tenge - Abylaykhan [11].

Due to not being ready to issue metal coins immediately, the Kazakhstan Mint first manufactured paper Tiyns, but one year later they switched to metal coins. In 1994 the paper coins were exchanged for copper coins.

The Tenge symbol was introduced in 2007. In 2007, the International Monetary Fund recognized 10,000 Tenge as the "Best Banknote in the World". The following denominations are in circulation: 200, 500, 1000, 2000, 5000, 10000, 20000 among banknotes Tenge, and 1, 2, 5, 10, 20, 50, 100 Tenge among coins. The National Currency Day, which was introduced on 15 November 1993, was declared by the President in 1997 as the "National Currency Day".

Gradually, a tradition of celebrating this day as a professional holiday of financiers and bankers was established. In the history of sovereign Kazakhstan the birth of the national currency proved to be a turning point. On the 15th of November, 1993, due to the introduction of Tenge, the state has embarked on actual economic and financial independence. The introduction of the sovereign currency was the starting point for a large-scale economic endeavor, an opportunity to pursue an independent financial and credit policy, taking into account the existing structure and peculiarities of the economy.

After gaining independence, the state had a coat of arms, anthem, flag, but no money. It is still in the people's memory: the way the Russian Ruble was failing us and we were looking at Moscow. It was clear from that point that the economy would not rise. There were many who barely withheld tears of joy, at least the first time President Nursultan Nazarbaev announced Tenge's creation on television, and Al-Farabi, Abylay Khan, Abulhair Khan, Shokan, Abai, Suyunbay, were first seen on the face of the national money. Of course, this is a significant moment in the history of the country.

In 2016 the banknote of 20000 Tenge was put into circulation. The design will present the modern image of Kazakhstan, representing state symbols, architectural forms and natural landscapes of our country. For convenience, the numerical and written symbols are printed with large fonts. For those who are visually impaired, the banknotes contain high relief elements characteristic of each individual nominal.

Next, let us take a closer look at this path spanning 25 years in terms of the dynamics of the Tenge current exchange rate, the price of oil, GDP and the rate of inflation during 1993-2018 (Table 1).

On November 15, 1993, by a decree of the President of the Republic of Kazakhstan, the exchange rate was set at 4 Tenge 75 Tiyn for one US dollar and it was decided that the exchange rate would float within the range established by the National Bank of Kazakhstan. However, as can be seen from Table 1, at the end of 1993, i.e. 1.5 months after the introduction of the national currency, 1 Dollar cost 45 Tenge, and in 1995 the average annual exchange rate was already 61 Tenge, that is, the Tenge depreciated 13 times against 1993 [12].

In his Address to the Nation titled "Growth of Kazakhstan's Prosperity: Improving the Quality of Life and Incomes" of October 5, 2018, the President said: "We need to strengthen the role of the financial sector and ensure long-term macroeconomic stability in order to boost the real economy. The rise in prices, access to finance, and the stability of banks - these issues are of great interest to many now. The National Bank, jointly with the Government, should seek systematic solutions to the issues of improving the financial sector and real sector and developing an integrative anti-inflation policy. It is crucial to increase the economy, especially the processing sector and small and medium-sized businesses. It is also necessary to increase the effectiveness of managing pension assets and the social insurance system, as well as to develop alternative financial instruments - the securities market, insurance and other industries. The Astana international financial center has to play an important role in providing businesses with foreign investments and capital. It has established a separate court, a financial regulator, and a stock exchange. All

government agencies and national companies should actively use this platform and contribute to its rapid development and development".

Table 1 - Macroeconomic indicators of Kazakhstan for 1990-2018

Years	Annual exchange rates of Tenge to Dollar (KZT)	Annual average oil price (USD)	Average annual exchange rate of the Russian Ruble to Dollar (RR)	Nominal GDP (bln USD)	GDP growth, %	Inflation %
1990				26,9		
1991				24,9	-7,6	
1992			288,00	24,9	0,1	
1993	5,25	17,1	931	23,4	-6,0	1662,3
1994	35,64	16	2203	21,3	-9,2	1402,0
1995	60,95	17,2	4554	20,4	-4,1	176,3
1996	67,3	20,8	5124	21,0	3,2	39,1
1997	75,44	19,1	5785	22,2	5,4	17,4
1998	78,3	12,8	9,70	22,1	-0,1	7,3
1999	119,52	17,9	24,62	16,9	-23,8	8,4
2000	142,13	28,4	28,14	18,3	8,4	13,3
2001	146,74	24,5	29,17	22,2	21,1	8,4
2002	153,28	25	31,35	24,6	11,2	5,9
2003	168,79	28,8	30,69	30,8	25,2	6,6
2004	136,04	38,1	28,81	43,2	39,9	7,1
2005	132,88	54,4	28,3	57,1	32,4	7,9
2006	126,09	65,1	27,17	81,0	41,8	8,6
2007	122,55	72,5	25,58	104,9	29,4	10,8
2008	120,3	97	24,86	133,4	27,3	17,2
2009	147,5	61,5	31,83	115,3	-13,6	7,4
2010	147,35	79,5	30,36	148,0	28,4	7,1
2011	146,62	111,3	29,39	192,6	30,1	8,3
2012	149,11	111,6	31,08	208,0	8,0	5,1
2013	152,13	108,6	31,85	236,6	13,8	5,8
2014	179,19	99	38,61	221,4	-6,4	6,6
2015	221,73	51,2	61,07	184,4	-16,7	6,6
2016	342,16	41,9	66,08	123,2	-30,5	14,6
2017	326,00	56	58,29	126,3	2,5	7,1
2018	370,00	83,4	65,46			

Source: Obtained from the data of the National Bank of Kazakhstan [Electronic resource <http://www.nationalbank.kz/>]

Along these lines, on November 9, 2018 an international scientific and practical conference was held at the LN Gumilyov Eurasian National University covering the following topics:

- Issues of financial sector development in Kazakhstan and national currency stability;
- The role of the national currency given the structural changes in the economy;
- Developing Kazakhstan's accounting system within the context of sustainable economic development and digitization;
- The main directions of public audit in the context of Kazakhstan's economic modernization;
- Managing the national economy in the context of the Fourth industrial revolution: new development possibilities;
- Tourism - a factor in ensuring the economic modernization in the context of globalization, etc.

The ideas, recommendations and issues raised by the participants of the conference were topical, laying the grounds for national socio-economic development, as well as the establishment of fruitful partnerships between financial institutions and foreign organizations.

Also, the conference was organized in a practice-based format, with the professionals from the National Bank of Kazakhstan, second-tier banks, the Accumulative Pension Fund, micro-credit organizations and other financial institutions sharing their views and suggestions in concise reports. In order to justify the confidence of the President, we have always been at the forefront of scholarly research,

enhancing our ability to use the information and data acquired to further develop the innovative knowledge. Facilitating the country's industrial-innovative development, building on the current achievements, preserving the value of the national currency and achieving financial stability are the most important opportunities for all Kazakhstan citizens.

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**ҚАЗАҚСТАН РЕСПУБЛИКАСЫ ҰЛТТЫҚ ВАЛЮТАСЫНЫҢ ҚАЛЫПТАСУ  
ЖӘНЕ ДАМУ КЕЗЕҢДЕРІ**

**Аннотация.** Төл теңгеміз пайда болғалы жүргізіліп келе жатқан мемлекеттің тізбекті қаржылық саясатының негізінде елімізде нарықтық институттар макроэкономикалық тұрғыдан тұрақталып, біртіндеп қалыптаса бастады. Өз ақша бірлігімізді енгізу – бүгінгі таңда қол жеткізген экономикалық табыстардың негізін қалады. Мұның дұрыстығы қаржы-несие секторының белсенді дамуымен және теңгенің тұрақтылығымен айқын дәлелденді. Теңге еліміздегі алғашқы ақша емес. Ежелгі Қазақстан аумағында ақша бұдан бірнеше ғасырлар бұрын қолданыста болған. Сырдарияда, Отырар маңында түркі билеушілері, ал Жетісуда түргештер VII-VIII ғасырларда өз ақшаларын шығарған. Отырар мен Исфиджабта монет сарайлары жұмыс істеген. X ғасырлардың ортасы мен VIII ғасырларда қалалар тез өсіп, тауар өндірісі мен сауда көлемі ұлғая түсті. Ұсақ бөлшек саудада көбіне мыс фельстер қолданылған. Алтын монеталар да айналымға түсті, бірақ ол саудада дара түрінде ғана емес, салмағына қарай пайдаланылды, яғни монетаны қажетіне қарай кесектеп сындырған. XIV ғасырдың соңынан бастап Қазақстанда Әмір Темір монеталары айналымға енді. Бұдан басқа Қазақстан қалаларында саудада Самарқанд, Бұхара, Ташкент монеталары, негізінен, мыс динарлар қолданылды. Қазақстан ақшасының бұрынғы тарихы міне, осындай. Егемен еліміздің индустриалдық-инновациялық дамуын жалғастыру, бүгінгі қол жеткізген жетістіктерді нығайта түсу, ұлттық валютамыздың құндылығын сақтау және қаржылық тұрақтылыққа қол жеткізу – барша қазақстандықтар үшін аса жауапты мүмкіндік.

**Түйін сөздер:** теңге, валюта, қаржы, ақша, сауда, тауар, айырбас, несие, банк, бағалы қағаз

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**ЭТАПЫ СТАНОВЛЕНИЯ И РАЗВИТИЯ НАЦИОНАЛЬНОЙ ВАЛЮТЫ  
РЕСПУБЛИКИ КАЗАХСТАН**

**Аннотация.** На основе последовательной финансовой политики государства, в которой происходило появление собственных тенге, рыночные институты в стране стали макроэкономически стабилизироваться и постепенно формироваться. Внедрение собственной денежной единицы заложило основу экономических

успехов, достигнутых на сегодняшний день. Об этом свидетельствуют активное развитие финансово-кредитного сектора и стабильность тенге. Тенге не первые деньги в нашей стране. На территории древнего Казахстана деньги использовались несколько веков назад. В Сырдарье, вблизи Отырара тюркские правители и в Семиречье тюркские народы выпускали свои деньги в VII-VIII веках. В Отыраре и Исфиджабе работали монетные дворы. В середине X и VIII вв. города быстро росли, увеличивались объемы производства товаров и торговли. В мелкой розничной торговле чаще всего использовались медные фельсы. Золотые монеты также были в обращении, но они использовались не только в розничной форме, но и по весу, т.е. по мере необходимости раламывали монеты на куски. С конца XIV века в Казахстане были введены в обращение железные монеты Амира. Кроме того, в других городах Казахстана монеты Самарканда, Бухары и Ташкента использовались в основном медные динары. Это прежняя история казахстанских денег. Продолжение индустриально-инновационного развития суверенной страны, укрепление достигнутых успехов, сохранение ценности национальной валюты и достижение финансовой стабильности являются важнейшими возможностями для всех казахстанцев.

**Ключевые слова:** тенге, валюта, финансы, деньги, торговля, товар, обмен, кредит, банк, ценные бумаги

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AS IMPORTANT COMPONENTS OF THE STATE BUDGET**

**Abstract.** The authors draw attention to the problem of inefficiency of taxation, as there is a numerous tax inspectorate, tax police, departments of the Internal Affairs Directorate to combat economic crimes, and yet the result of the work leaves much to be desired. Lists the problems of unskilled staff of these bodies, the inability to competently conduct support, audit, often many legal entities and individuals easily escape responsibility for tax evasion. However, the state budget includes revenues and expenditures and is a unity of the main parts of the financial system: government spending, taxes, state credit and a separate economic category, reflecting the financial relations of the state with individuals and legal entities regarding the redistribution of national income when using the budget fund, which is intended financing of national economy, social and cultural events, the needs of public administration and us.

**Keywords:** taxation, social payments, state budget, policy.

**INTRODUCTION**

Tax regulation is the purposeful influence of the state on the behavior of economic agents through the use of various methods and instruments of tax policy to achieve the desired socio-economic results. The theoretical aspects of the content of tax regulation are summarized, the tasks and tools of tax regulation are highlighted in order to identify the main directions of further tax regulation by the state.

State tax policy has not only fiscal goals, but also regulates the economy through taxes. Tax policy and tax regulation correlate as a whole and private, and tax regulation is a separate, and very important, direction of tax policy. An objective basis for the use of taxation as one of the most important levers of state economic policy is the regulatory function inherent in taxes.

**MAINPART**

Tax regulation tools:

1. The general level of taxation as a system regulator. Increasing the tax burden is, as a rule, a factor constraining economic activity and accumulation processes that contribute to the accelerated development of the shadow economy. Reducing the tax burden often helps to revive all economic processes and reduce the level of the shadow economy, but it is accompanied by a temporary reduction in the budget revenue for the period until a corresponding increase in tax bases.

2. The structure of the current tax system in the country as a system regulator. Changing this structure can be done in two main ways: first, by introducing new or canceling the applicable taxes and fees, and secondly, by changing the ratio of effective tax rates for different tax groups, which can be realized through the coordinated application of elementary instruments of tax regulation.

The most important structural indicators of the tax system are: the ratio of direct and indirect taxes (reducing this indicator generally allows shifting the center of gravity of taxation from the producer to the consumer and stimulating savings and investment, and its increase reduces the incentives for production

and income, but reduces the urgency of the problem of accommodation taxes); correlation of corporate and individual taxes (by regulating this ratio, the state can significantly stimulate business activity, influence the structure of investments and change in production volumes. Increasing this ratio contributes to the growth of real incomes of the population and reduction of the scale of the shadow economy (due to legalization of income payments to individuals) At the same time, there is also an indirect regulatory impact on consumption due to an increase in net income, which remains At the same time, an excessive increase in the tax burden for legal entities leads to such negative consequences as an increase in prices, a decrease in domestic sources of investment and a loss of competitive positions by producers of goods (works, services).

3. The use of alternative tax systems as a system regulator. Such systems include: a taxation system for agricultural producers, a simplified taxation system, a taxation system in the form of a single tax on imputed income for certain types of activities.

As a rule, alternative systems are aimed at stimulating the development of individual sectors of the economy and priority forms of entrepreneurial activity. The alternativeness of these tax systems in most countries using such a regulator is due to the following circumstances: the transition to one of these tax systems (subject to the restrictions) is determined in most cases by the decision of the taxpayer; the same activity carried out by an economic agent may be taxed on only one tax system - ordinary or alternative; each of these systems is an alternative to the general taxation system, i.e. limits the corresponding list of taxes and fees that are mandatory to pay. At the same time, the choice of one of these systems exempts the payer from paying a number of the most fiscally significant taxes and fees, which are provided for by the common system.

4. Special territorial tax regimes as a comprehensive regulator. This regulator includes all the variety of special (free) economic zones (FEZ).

The use of such tools can be aimed at addressing the priority tasks of economic development of those regions that have significant potential in the relevant field (foreign trade, recreational zones, high-tech zones or technology parks) or aims at leveling regional development by increasing the investment attractiveness of depressed regions, which allows solve and their inherent social problems. Distinctive features of special tax regimes, as complex tools of tax regulation, are the following: within each special regime, a set of interdependent and applied tax incentives are applied, which relate to various taxes and fees. In most cases, they relate to VAT, income tax, customs duties, and some types of property taxes (primarily land tax); special tax regimes are introduced for a period defined by the relevant legislative act; Special regimes are aimed at stimulating the development of regions or regions by creating appropriate conditions for intensifying investment and innovation (mainly within technoparks) activities.

Other tax incentives (for example, stimulating the production of certain types of goods, creating favorable conditions for certain social groups of taxpayers, etc.), which are solved by the use of elemental (local) tools, are not inherent in special tax regimes; For each special tax regime, priority types and special conditions for carrying out entrepreneurial activities are established (for example, the minimum amount of investment is limited), which determines the coolness of the subjects of such special regimes; for the means of tax regulation of this group, the combination of tax incentives proper with other measures of non-tax regulation of business activity is characteristic.

Tax reform, under which, unlike separate amendments to the existing tax system, is meant a radical revision of its conceptual and methodological foundations - a complexly organized economic system. It is a lengthy, dynamically developing, multivariate and multi-purpose process that has a specific set of similar-type, specific in execution and decision-making successive stages, which are its subsystems and consisting, in turn, of a number of primary elements - stages. Normally, there are three such stages in total: preparatory, direct universal introduction of new legislation and significant. The sequence and economic classification of all elements of tax reform is in the aggregate a complete hierarchical series, each subsequent stages and stages of which, according to their final result, are somehow coordinated with the previous ones.

Sources of income:

- taxes;
- government loans (securities, treasury bills, etc.);
- issue (additional issue) of paper and credit money;

- loans from international organizations.

The structure of the budget expenditure in developed countries:

- social needs (at least 50% of all expenses);
- maintaining the country's defense (approximately 20%);
- public debt service;
- provision of subsidies to enterprises;
- infrastructure development (roads, communications, transport, external energy supply, landscaping, etc.).

If we recognize that the state exists to ensure the well-being of its citizens, the government can choose one of the following two strategic lines: either to collect high taxes and assume, respectively, high responsibility for the well-being of its citizens, or to charge low taxes, bearing in mind that citizens themselves must take care of their well-being, not relying on state support. At the same time, the level of the needs of the population is important, and in accordance with this, at the initial stages of economic development, the states are subject to relatively low taxes;

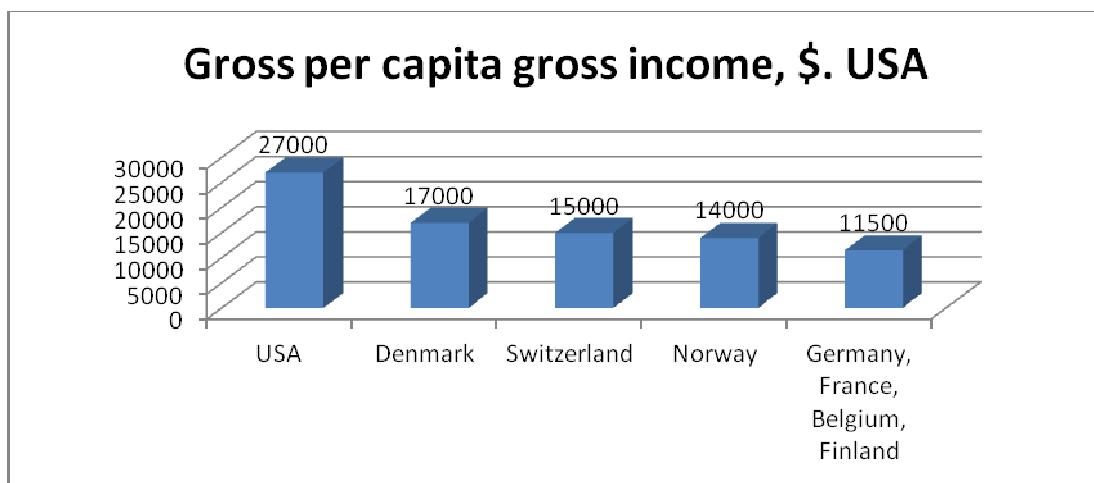


Figure 1 - Gross – per capita gross income of developed countries

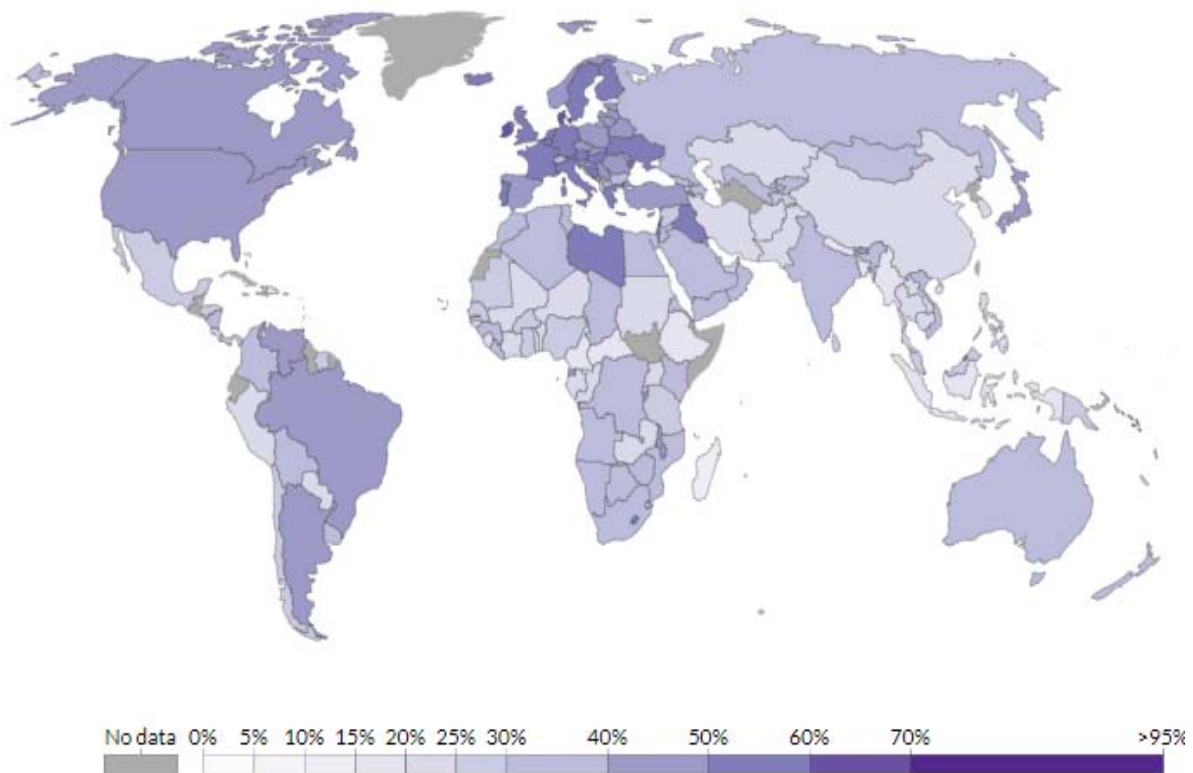
Among the first mainly developed countries with the level of average per capita gross income in the range of 25-30 thousand US dollars, their tax exemptions amount to very significant amounts: in Dacia - 17 thousand dollars per capita (the share of taxes in GDP - 51%), in Switzerland - about 15 thousand dollars (the share of taxes in GDP is about 33%), in Norway - 14 thousand dollars (the share of taxes in GDP - 42%), in Germany, France, Belgium, Finland - in the range of \$ 11-12 thousand. (The share of taxes in GDP is 40%, 45%, 46.5% and 47% respectively).

Based on the analysis of international experience, it can be concluded that the most effective and complex social protection systems usually include the following main elements:

- government benefits;
- compulsory social insurance;
- accumulative pension provision;
- social help.

So, at the end of the 19th century, European countries spent less than 10% of GDP through the government. In the 21st century, this figure exceeds 50% in many European countries. The increase in absolute terms, and not in the relative figures shown, is much greater, since the level of GDP per capita has increased significantly during this period.





Source: IMF Fiscal Affairs Departmental Data, based on Mauro et al. (2015)

Figure 2 - The growth of social spending in the second half of the 20th in countries with early industrialization

The above visualization shows that government spending in countries with early industrialization increased significantly in the 20th century. The following visualization shows that this was the result of growth in social spending.

The sharp increase in social spending in the second half of the 20th century was largely due to the expansion of state funding for health and education.

However, within the framework of this general trend, different states build their financial systems in different ways: some consider it possible to withhold taxes (including all types of tax and obligatory payments, including social insurance contributions) up to 50% of society's total income, based on concepts of higher efficiency in the use of financial resources under the control of state structures than in the hands of private individuals; others do not share this belief and limit their tax appetites to only 25-30% (of GDP).

An important element of social protection of the population is the program of employment and re-qualification. With the introduction of these programs involved the state and entrepreneurs. For example, in America, firms annually spend about \$ 30 billion on these measures. The state spends most of the money on re-qualification programs. By the end of the 1990s, about 50 million people had been retrained in the USA. In order to create new jobs, the state also took upon itself the execution of such public works as road construction, sewage, etc. During the economic crisis, the state increases investment in state-owned enterprises. Employment programs are also carried out through preferential taxation of companies that create jobs. On a national scale, the modern state, in order to reduce the army of the unemployed, is trying to regulate wages at such a level that its growth rates are lower than the growth of labor productivity. To do this, the "income policy", active monetary policy, etc. are implemented. Such tactics are used by private firms, trying to make it so that the level of labor productivity outpaces the growth of labor remuneration.



## CONCLUSION

To ensure social protection of the rural population, it is necessary to: create economic conditions for the growth of wages and other monetary incomes of workers in rural areas; strengthening the TSA for the rural population, the introduction of cards for the registration of low-income citizens in all settlements; stage-by-stage repayment of all types of social payments, pensions and wages, which they have not seen for years; provision of targeted social support for rural inhabitants.

If the financial resources that make up the excess of expenditure over income are directed to the development of the economy, they are used to develop priority sectors, i.e. are used efficiently, in the future the growth of production and profit in them will more than compensate for the costs incurred and society as a whole will only benefit from such a deficit. If the government does not have a clear economic development program, and the excess of expenditures over revenues allows for the purpose of patching "financial holes", subsidizing unprofitable production, then the budget deficit will inevitably lead to an increase in negative aspects in economic development.

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**САЛЫҚ САЛУ ЖӘНЕ ӘЛЕУМЕТТІК ТӨЛЕМДЕРДІ МЕМЛЕКЕТТІК  
БЮДЖЕТТІҢ МАҢЫЗДЫ КОМПОНЕНТТЕРІ РЕТІНДЕ АРТТЫРУ**

**Аннотация.** Авторлар салық салудың тиімсіздігіне назараударады, себебі көптеген салық инспекциясы, салық полициясы, ішкі істер басқармасының экономикалық қылмыстармен күресу бөлімдері бар, алайда жұмыс нәтижесі төмен. Бұл органдардың біліктілігі жоқтығын тізімдейді, аудиттісауаттыжүргізеалмайды, көбінесе көптеген заңды тұлғалар мен тұлғалар салық төлеуден жалтарғаны үшін жауапкершіліктен оңай босады. Алайда, мемлекеттік бюджет кірістер мен шығыстарды қамтиды және қаржы жүйесінің негізгі бөліктерінің бірлігі болып табылады: халық шаруашылығын, Әлеуметтік және мәдени іс-шараларды, мемлекеттік басқару мен қорғанысқа жеткіліктерін қаржыландыруға арналған бюджет қорын пайдалану кезінде ұлттық табысты қайта бөлу мәселелері бойынша мемлекеттің жеке және заңды тұлғалармен қаржылық қатынастарын көрсететін мемлекеттік шығыстар, салықтар, мемлекеттік кредит және жеке экономикалық санат.

**Түйін сөздер:** салық салу, әлеуметтік төлемдер, мемлекеттік бюджет, саясат

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**СОВЕРШЕНСТВОВАНИЕ НАЛОГООБЛОЖЕНИЯ И СОЦИАЛЬНЫХ ВЫПЛАТ  
КАК ВАЖНЫХ СОСТАВЛЯЮЩИХ ГОСУДАРСТВЕННОГО БЮДЖЕТА**

**Аннотация.** Авторы обращают внимание на проблему неэффективности налогообложения, так как существует многочисленный аппарат налоговой инспекции, налоговой полиции, отделов УВД по борьбе с экономическими преступлениями и тем не менее, результат работы оставляет желать лучшего. Перечислены проблемы низкой квалификации кадров этих органов, неумения грамотно провести поддержку, ревизию, зачастую многие и юридические и физические лица легко уходят от ответственности за сокрытие налогов. Однако государственный бюджет включает доходы и расходы и представляет собой единство основных частей финансовой системы: государственных расходов, налогов, государственного кредита и отдельную экономическую категорию, отражающую финансовые отношения государства с физическими и юридическими лицами по вопросам перераспределения национального дохода при использовании бюджетного фонда, который предназначен для финансирования народного хозяйства, социальных и культурных мероприятий, потребностей государственного управления и обороны.

**Ключевые слова:** налогообложение, социальные выплаты, государственный бюджет, политика

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**D.Kuatova<sup>1</sup>, A.Zhakupova<sup>2</sup>, Zh. Malgaraeva<sup>3</sup>**

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[k.dilmina@mail.ru](mailto:k.dilmina@mail.ru); [al.zhakyp@gmail.com](mailto:al.zhakyp@gmail.com); [zhanat.malgaraeva@narxoz.kz](mailto:zhanat.malgaraeva@narxoz.kz)**PROFESSIONALISM OF THE TEACHING STAFF AS THE  
SYNONYMOUS OF QUALITY OF EDUCATIONAL SERVICES**

**Abstract:** This article sets out the criteria of professionalism of the teaching staff are outlined for use by state authorities, university management and consumers of educational services; measures are proposed to improve the professionalism of the teaching staff and thereby improve the quality of higher education.

Purpose – identification of professionalism criteria of the teaching staff of a higher school and development of improvement ways.

Methodology – methodological basis for the study are research works of home and foreign experts in the field of professional competence of university teachers, regulations and guidance documents governing the activities of a higher school in the Republic, results of student surveys.

Originality/value – results of the study can be used by the teaching staff and the management of universities to develop measures aimed at improving the quality of teaching in higher educational institutions.

**Keywords:** higher education, quality of education, professionalism of the teaching staff, criteria of professionalism, professional competence.

**Introduction**

Nowadays rapid changes are occurring in organizational and economic conditions of higher educational institutions. They are caused by a crisis in the economy, increase of competition in the market of educational services and labor market, as well as the reformation of the education sector of the country for the purpose of compliance with international standards. Under these conditions, requirement of a society for quality education rise.

First of all, the concept of quality starts with a personality of a human. Therefore, the quality of educational services directly depends on the professionalism of the teaching staff of a higher school. In particular, a teacher is a key figure at university. Formation of professional reasoning skills and the extent of professional training of future experts are directly dependent on a teacher's professional competence. Ultimately, all this is reflected in the ranking of a university and the students' desire to learn from a teacher.

Under the conditions of raising stringent requirements for professionalism of the teaching staff, the criteria for its determination are still blurred, indistinct and the means for their achievement are not always clear. In this regard, the relevance of this article emerges, in which the author tried to work out some improvements in this direction, without claiming for full completeness and comprehensiveness.

**Main part**

Professionalism of the teaching staff of a university is undoubtedly identified with the quality of educational services. Quality can be defined as the compliance of higher education to socio-economic needs: ones of a separate individual and interests of a society and the state. On this basis, the criteria of professionalism bear multiple characteristics and are nominated by: 1) direct consumers of educational services, i.e. students and their parents; 2) management of higher education institutions; 3) the state on behalf of the Government and, in particular, the Ministry of Education and Science.

Traditionally, the evidence of professionalism of a teacher at a Kazakhstani university in terms of university-employer relations (and therefore the Ministry of Education and Science) is served by the

possession of a scientific degree (doctors and candidates of sciences and more recently PhDs) and academic status (professor and associate professor). An academic title is awarded to a teacher possessing a scientific degree, work experience, written articles, textbooks, manuals or monographs. Therefore, it is assumed that its presence is an indication of real achievements of a teacher in the realm of research, methodological and pedagogical activities. And that is associated with professionalism. For those who do not hold a degree and academic status, presently there is a requirement of holding an academic Master's degree in order to be able to work in higher schools. According to the "Model qualification characteristics of positions of pedagogical employees and those equated to them" approved by the Order № 338 of the Minister of Education and Science of the Republic of Kazakhstan dated July 13, 2009, one of the basic requirements for the qualification of a teacher is the evidence of experience in research-educational activities and / or practical work experience in the majoring specialization (Table 1).

Table 1 – Qualification requirements to a teacher according to "Model qualification characteristics of positions of pedagogical employees and those equated to them" in the Republic of Kazakhstan

Position	Qualification requirement
Professor	Higher (or postgraduate) education, possession of an academic degree, academic title of a "professor" and work experience of at least 5 years in research-educational activities
Associate Professor	Higher (or postgraduate) education, possession of an academic degree and work experience of at least 5 years in research-educational activities
Senior Lecturer	Higher (or postgraduate) education, or possession of an academic Master's degree, work experience of at least 3 years in research-educational activities, including at least one year as a teacher or presence of practical experience for at least 2 years in the majoring specialization
Lecturer (assistant)	Higher (or postgraduate) education, work experience for at least 3 years in the majoring specialization and / or possession of an academic Master's degree

No doubt, possession of academic degrees and titles by a teacher is an important criterion of professionalism. They are assigned by the corresponding state agency (formerly - Higher Certifying Commission, and now - the Committee for Control of Education and Science, Ministry of Education and Science of the Republic of Kazakhstan) one time and for entire life. However, they may not always reflect the possession of teaching skills by a teacher. This is especially true of a scientific degree, as it is awarded for certain research achievements in highly specialized fields of expertise. Each teacher annually submits a report of work completed in order to confirm the obtained qualifications. Implementation of educational, methodical, research, educational, vocational guidance and training activities are reflected in this report. Such a report is prepared when a teacher is competing to fill a certain position.

Apart from that, each teacher is ought to hold an open session during an academic year, which allows to theoretically identify the degree of pedagogical skills and knowledge of a subject. Thus, there is a number of evaluation criteria of professional suitability for a teacher of a Kazakhstani university.

At Kazakh Economic University named after T. Ryskulov, in accordance with the Model qualifying characteristics [1], the following scope of different activities are determined for a teacher for the upcoming academic year: 1) academic; 2) educational-methodical; 3) scientific-research; 4) educational; 5) vocational guidance; 6) improving pedagogical skills and academic qualifications. Starting from 2013-2014 academic year, organizational, methodological and socio-managerial activities were added as well.

It is clear that academic work implies conduction of direct teaching activities, i.e. lecturing, conducting practical and other types of classes, supervision of coursework, dissertations, masters' theses, various internships, holding exams etc. According to the "Instructions for planning the workload for the teachers of the JSC "Kazakh Economic University named after T. Ryskulov", 21 types of academic teaching activities are outlined [2]. These are the essential educational services, which are offered to students in any educational institution as a market entity. In addition to that, 26 types of educational-methodical and 15 types of organizational-methodical activities are distinguished as well. The list of scientific-research and scientific-organizational work includes 16 and 8, educational and vocational guidance – 11 and socio-managerial – 27 types of activities respectively. In total, there are 103 types of activities, without the inclusion of direct workload in teaching.

Certainly, a hypothetical teacher may not be able to perform all types of activities, but it is obligatory to fulfill a substantial part of them. List of types of activities and tasks that face the teaching staff, shows

that a higher school teacher must possess the abilities of a researcher, an organizer, a speaker, a psychologist, be a highly qualified expert both in a specialized subject area and an erudite in other areas of expertise. No other occupation does not possess such an expanded qualification characteristics. Mastering the profession of a university teacher requires certain natural abilities and talents, enormous mental, physical, emotional and time-consuming commitment [3].

Based on the above-explained quantitative characterization of a teacher at the university, one can say that academic work, i.e. direct pedagogical activities are only a small part of a teacher's activities.

It is worth saying that the annual teaching workload of a Kazakhstani teacher in absolute terms by itself has never been small. In many universities of Kazakhstan planned academic teaching workload is calculated to be in the range of 700-800 hours per year. For comparison, for a professor of an American university it is only 250 hours [4]. It becomes clear that such a situation is not conducive to the achievement of high quality teaching.

In KazEU named after T. Ryskulov under the conditions of implementation of a pilot project in 2013-2014 academic year, annual teaching (pedagogical) workload for a teacher was reduced and varies in the range from 480 to 720 hours per year depending on the category of the teaching staff. However, fixed standard hours for other types of activities were introduced. As a result, entire annual workload for a teacher is expressed in hours and it is obligatory that they to accomplish it. It is clear that most types of teaching activities are of creative character. It is quite difficult to develop standard hours for them. So sometimes undeservedly little time is allocated for their achievement. For example, only 15 minutes instead of prior 3 hours are given to guide the writing of course works, including submission and defending; 12 minutes for examining the written paper works of distance learning students. This is definitely not sufficient when considering it in terms of realization and quality. The same can be claimed for allocated standard hours for a textbook and study guide preparation. For these purposes, 200 and 300 hours were designated respectively. So in order to complete the planned workload fully and fruitfully, a teacher is forced to reallocate time between different types of teaching. Consequently, it is usual that a teacher struggling to complete the plan finds little or no time and strength for creative approach to teaching, which sometimes affects the quality and, ultimately, the image of a higher school.

Since the Soviet times, it was considered that the “department with staff professors and teachers within a 6-hour working day was obliged to ensure that all types of educational and methodical activities were performed as dictated by the academic curriculum. Whereas the scope of academic activities which are prescribed by the curriculum must be considered as a maximum, exceeding of which is unacceptable” [5]. In actual practice, the workload is often not just over-fulfilled by a teacher, but unplanned activities such as opposition to dissertations and reviewing, advising students to sit for External Assessment of Academic Achievements, supervising exams and dormitories, writing various reports, memos, etc. are common to arise. The latter deserves more explanation. Preparation of large number of various reports and memos distracts from actual teaching work. Apart from that, it is worth to say that the work schedule of a teacher may not be always organized due to unforeseen circumstances: the schedule is sometimes compiled in such a way that a teacher is obliged to be on duty from 8-00 in the morning until 18-00 in the evening. In addition to this, there may be only 3-4 academic hours, with long gaps being in between, which are not always effectively utilized. All this, of course, detracts a teacher from the main job, which is teaching, in the truest sense of the word. Moreover, it is not reflected on the remuneration of a teacher. Generally, it is not a secret that currently the remuneration level of a teacher in a Republican higher school teacher is often not in line with the social usefulness of such work and does not provide incentives to increase the efficiency of the work.

The wages of a Kazakhstani teacher cannot be even compared with those of their colleagues' at foreign universities. For example, the newspaper "Moscow News" presented comparative data on wages of teachers of state universities from 28 countries, published in the book named “[Paying the Professoriate. A Global Comparison of Compensations and Contracts](#)”. The wages were assessed by the criterion of purchasing power and it was found that it was best to be a professor in Canada, Italy, South Africa, India, the United States, Saudi Arabia and the United Kingdom. While the worst conditions for teaching at a university are in Ethiopia, China, Russia and Armenia [6]. It is believed that for obvious reasons, the situation with a Kazakhstani teacher in this sense is not very different from a Russian or Armenian one.

A university teacher in the United States comprises a combination of an academic expert in a specific professional area and a teacher: a requirement for securing an academic profession of a university teacher is the possession of a Doctor of Philosophy (PhD) degree or a Master's degree (MD). At the same time, many experts of American higher schools note that a large part of teachers at American universities do not conduct significant scientific research works. Most of those who are involved in scientific research rarely publish the results of their work [7]. For example, according to the survey conducted among US higher school teachers holding PhD degrees in 1989 by the Carnegie Foundation, showed that 28% of the surveyed have never had any scientific publications, 26% of have not published anything in the last 5 years, 57% of university teachers have never published monographs or books. Over 50% of the surveyed admitted that teaching is their main activity in a higher school, 27% were more inclined to teaching and only 6% said that research is their dominating activity at university. As it turned out, most of the university teachers were not able to engage in global scientific research due to substantial academic workload [7].

All these data allow us make an important conclusion that is associated with a focus on improving the professionalism of the teaching staff: the dominating majority of American teachers of higher education are "pure" teachers rather than researchers. At the same time, the combination of a high teaching workload of a home teacher and the necessity of planning other more activities and the fact of not always justified standard hours for their execution is not conducive to improving the quality of the educational process. This will lead to an even greater "atomization" of a teacher, who already "lives to work but not works to live".

It follows that the presented requirements imposed often distract a teacher from the educational process itself and are do not facilitate to fully enhance the professionalism and quality of education.

Having considered the criteria of professionalism of the teaching staff, based on which assessment is performed by university management and the state, let us pay attention to the criteria put forward to a teacher by direct consumers of educational services, i.e. students.

In order to define what professionalism of a teacher is from the view of students, the students of the 3<sup>rd</sup> and 4<sup>th</sup> year of study of certain professions at KazEU named after T. Ryskulov were asked to identify the criteria (requirements) which must be met by higher school teachers. As it turned out, there are quite a number of such criteria, namely sixteen of them (Table 2).

Table 2 – Criteria for teacher’s professionalism from the view of students at KazEU named after T. Ryskulov

No	Criteria for teacher’s professionalism from the view of students
1	Comprehensiveness and clarity of presenting a subject (a teacher is able to clearly and thoroughly explain a subject)
2	Logical and systematic presentation of a subject
3	Competence (knowledge of a subject and possession of up-to-date information on it)
4	Control over an audience (ability to attract the attention of students, induce and maintain interest in a subject, ensuring discipline in a classroom)
5	Conducting classes with a focus on the practical aspect of applying knowledge in a discipline of future profession (confirmation of theoretical calculations with actual practical examples)
6	Using different forms of conducting classes (in the form of trainings, business games, case studies, etc.)
7	Using computer or video demonstrations (presentations, training films, etc.)
8	Objectivity and impartiality in the assessment of students' knowledge (a teacher is demanding but fair, does not require more than presented, makes no distinction between the students)
9	Loyalty (patience, generosity on assessments; understanding of life situations faced by students)
10	Ability to listen to a student, answers questions, "does not dodge" from questions
11	Clear eloquent speech, diction (no monotony in the voice, liveliness of presentations of subjects, inspiration)
12	Kindness, tactfulness, respect for a student
13	Desire to share knowledge with students
14	Use of visual aids and handouts during practical sessions of (quizzes, flashcards for independent work, etc.)
15	Clear organization of the educational process, compliance with the timing of classes’ schedule (a teacher is accurate and responsible in timing)
16	Individual approach to each student

After the formulation of the criteria they were laid to the basis of the questionnaire. Students were asked to identify five most important criteria and rank them in the order of importance by means of

anonymous survey. The first rank was assigned to those criteria, which are the most preferred characteristics of professionalism of a teacher.

The results of the survey are presented in Table 3.

Table 3 – Ranking by students at KazEU named after T .Ryskulov of teacher professionalism criteria in the order of importance (the fractions of students who preferred a specific criterion in the total number of surveyed students are given in percentages)

Criteria for teacher's professionalism from the view of students	Rank				
	1	2	3	4	5
Comprehensiveness and clarity of presenting a subject (a teacher is able to clearly and thoroughly explain a subject)	60	15	10	15	–
Logical and systematic presentation of a subject		15	5		
Competence (knowledge of a subject and possession of up-to-date information on it)		10	20	15	
Control over an audience (ability to attract the attention of students, induce and maintain interest in a subject, ensuring discipline in a classroom)	10	5	10	5	20
Conducting classes with a focus on the practical aspect of applying knowledge in a discipline of future profession (confirmation of theoretical calculations with actual practical examples)		20	10	5	19
Using different forms of conducting classes (in the form of trainings, business games, case studies, etc.)		5		5	5
Using computer or video demonstrations (presentations, training films, etc.)			5		5
Objectivity and impartiality in the assessment of students' knowledge (a teacher is demanding but fair, does not require more than presented, makes no distinction between the students)	10	20	5	15	–
Loyalty (patience, generosity on assessments; understanding of life situations faced by students)		10	5		5
Ability to listen to a student, answers questions, "does not dodge" from questions			15	15	10
Clear eloquent speech, diction (no monotony in the voice, liveliness of presentations of subjects, inspiration)					
Kindness, tactfulness, respect for a student	15	10	15		15
Desire to share knowledge with students	5	5	5	5	
Use of visual aids and handouts during practical sessions of (quizzes, flashcards for independent work, etc.)		5		5	5
Clear organization of the educational process, compliance with the timing of classes' schedule (a teacher is accurate and responsible in timing)					5
Individual approach to each student		5		10	5

The results of the students' survey show that:

1) the vast majority, namely 60% of students, put the quality of both comprehensiveness and clarity of presentation on the first place of importance. Although 15% of the surveyed ranked it as the second or even the fourth. Other 15% of the surveyed prefer to all criteria kindness, tactfulness and respect for a student;

2) opinion on the second most important criterion of professionalism of the teacher got split: 20% of students believe that, secondly, a teacher should be demanding but fair; does not require more than presented; makes no distinction between the students, i.e. objective and impartial in the assessment of students' knowledge. Other 20% of the surveyed wish that comprehensiveness of a study subject is enforced by conducting classes with a focus on the practical aspect of applying knowledge in a discipline of future profession. We are talking about the importance of real-life practical examples for a better understanding of the theory. 15% of the surveyed see consistency and systematic teaching of a subject as the second most important criterion of professionalism. Almost the same fraction, as mentioned above, believe that a teacher should be able to comprehensively and clearly explain a subject;

3) the third "prize" place with 20% of the students (and this is the greatest fraction) chose competence, which means knowledge of a subject and possession of up-to-date information on it. 15 percent expressed that the third criterion by importance is the ability to listen to a student, answer questions and "not dodge" from questions;

4) on the fourth important criterion, opinions got split substantially: groups of 15% of the surveyed each chose one of the following as the fourth criterion:

- comprehensiveness and clarity of presenting a subject;
- competence;
- objectivity and impartiality in the assessment of students' knowledge;
- ability to listen to a student, answer questions and “not dodge from questions”;

5) in respect of the fifth rank, it can be said that the majority of students (20%) assigned it to the ability to control an audience, 19% - approach of a teacher to focus on the practical aspects of applying knowledge in a discipline; 15 percent of the surveyed outlined kindness, tactfulness and respect for students.

It should be noted that one of the five important chosen characteristics of professionalism of a teacher was control over an audience. By this, students understand it as the ability to get their attention, to cause and maintain interest in a subject, ensuring discipline in the classroom.

Thus, the survey allowed us to sketch a portrait of a teacher: he should be able to simply and clearly present knowledge in a discipline, with an emphasis on the practical aspect and this is the result of the competence, at the same time being demanding but friendly, objective, have a sense of tactfulness and respect to students.

Then, in order to identify the accordance of the teaching staff members at KazEU named after T. Ryskulov to the sketched by the students a portrait and satisfaction with the quality of teaching, they were asked to answer the question: "What do you not like in a teacher most?"

In this context, students expressed their dissenting opinion about the lectures. They noted that they do not like when a teacher does it literally, i.e. lecturing from a paper material, dictates from it to students and conducts classes with the help of obsolete materials. Alternatively, when a teacher uses the so-called presentation, which is a plain text in Word, but not an actual presentation in Power Point. A teacher explains it just by her reading, but does not always stress on the main points and does not provide illustrative examples from practice. It is known that "nowadays there is no single course presented at American universities without the help of PowerPoint or Black Board technology ... PowerPoint does not simply place pictures on a display or on a big screen, it requires a completely new perspective on the concept of lectures, their structure, bullet point character material presentation, including voice files, videos, etc. Most lectures are evaluated by students primarily visually, and therefore higher ratings are given to those teachers who are more successful at visual presentation of their courses" [4].

In addition, it should be noted that the use of presentations is encouraged by students, but the board must also be used actively, especially in the demonstration of practical examples. This allows students to follow the logic and track the course of problem solving process.

Most of the surveyed students indicated that they did not like the fact that not all teachers are demanding. Such a behavior is often a characteristic of poorly trained teachers. They become not demanding, too loyal and "kind".

Students are also not content with the situation when a teacher requires much more knowledge than actually shared. In this case, students may get an impression of a lack of training of a teacher. This is also evidenced by the opinion that some teachers do not like when students ask questions. In response, students may hear a confused puzzled monologue, or a refusal from a teacher to answer a question. As per student's understanding, this may mean that a teacher is not in the possession of actual information and a question causes difficulty for a teacher. As a result, students no longer motivated not to only ask questions, but even lose interest in the study of a subject.

Some students noted that it is important that a teacher should not enter a classroom in a bad mood. According to students' statements, sometimes it is felt that a teacher takes on to them his discontent, including dissatisfaction with the job, sometimes dropping out phrases about the inequality of teachers' salaries to the efforts, which are being made. Thus, a student is sometimes forced to see indifference, lack of interest in work by a teacher.

The survey was not aimed at specifically outlining such a criterion as the outer appearance of a teacher. However, students additionally noted that the appearance of a teacher bears considerable importance as well. In practice, a teacher with an unpleasant appearance, causes not just irrespective attitude from students, they may even lose interest in a subject and the learning process itself.



One of the comments in survey questionnaires was the statement of students was that they sometimes do not understand the importance and the need of a particular taught discipline for their future professional activities. This fact does not contribute to the perception of a subject and interest in learning. Therefore, an enquiry was expressed that a teacher as a professional should emphasize the importance of a subject and demonstrate the necessity of mastering knowledge in a subject in terms of its importance for future career. A teacher should mainly focus on the practical aspect of presenting knowledge. It is necessary that a teacher supports theoretical knowledge with good examples occurring in reality and also conduct classes in the form of practical training.

This is very important in the time of a crisis in the economy, rising unemployment and labor market competition, which consequently reduce the possibility for a young fresh expert - a former student, to find a decent job in the majoring specialty. Therefore, every teacher should be aware of this, as well as of competition in the educational market and build the process of teaching in this context.

Students generated the following idea: less theory, more practice and practical solutions. Practical orientation of teaching a discipline, development of practical skills in the classroom allow stimulate the activity of students, enforce interest in independent work. This occurs especially if its implementation implies not only receiving positive marks in the learning process, but also opportunities for student creativity. This is possible in the form of participation in competitions, internships in companies and organizations, apprenticeships and even taking up paid employment (e.g., consulting firms, research and business projects, tutoring schoolchildren). All this creates preconditions for successful employment in the future.

The vast majority of students indicated that the survey using the above-mentioned questions would help to undertake work aimed at improving the professionalism of the teaching staff. This would in turn contribute to improvement of the quality of educational services.

Thus, the results of the survey among students can reflect the degree of professionalism of a teacher, as they receive the direct impact of it.

We believe that the professionalism of teachers in higher education schools for each criterion should be assessed according to the scale used in the survey of Togliatti State University [8]:

- 5 marks – quality is demonstrated almost always;
- 4 marks – quality is demonstrated frequently;
- 3 marks – quality is demonstrated at the level of 50%;
- 2 marks – quality is demonstrated rarely;
- 1 mark – quality is demonstrated almost never;
- 0 mark – unable to assess.

It should be added that almost all students said that it did not matter to them who conducts classes: a professor, an associate professor or a teacher without any academic degree or academic title. The main attribute is the ability of a teacher to pass knowledge to students. Prejudice of a society that a great teacher is a successful researcher and award-winning professor who can a priori clearly and intelligibly present an educational material is not always the truth. Therefore, number of scientific papers, publications, their citation indices (which is very fashionable today to demand from a teacher), number of doctoral students trained, i.e. all indicators that are taken into account for certification and increases the rating of a university, is not a reliable indication of the professionalism of a teacher and is not a criterion for a student and his parents.

From all what was previously, it follows that the criteria to be met by the professionalism of the teaching staff by various subjects of market interest are ambiguous. The management of universities-employers and the relevant state authorities require the accomplishment of all types of work activities from a teacher. Students and their parents welcome such qualities as the knowledge of a subject, its logical and comprehensive presentation and ability to interest students, strengthen their independence and give the level of knowledge that will allow a student to develop as a specialist. Indeed, this is really what is called professionalism – “high level of psycho-pedagogical and subject scientific-research knowledge and skills combined with appropriate cultural and moral character, providing in practice socially demanded training of future specialists” [9].

### **The obtained results (conclusions)**

I believe that, in order to meet the demands of students on the professionalism of teachers and focus on the systematic achievement of its growth is possible through the implementation of the following measures:

1) for the purpose of further development and improvement of the quality of training and the training sessions, it is necessary to reduce the individual workload of a teacher and establish effective control over the quality of his classes work;

2) implement individual approach to the determination of work duties, the scope of different types of activities performed by each teacher. It should be based on the objectives of a university and the reasonable and efficient use of a teacher, accounting for his habitudes, abilities to bring great benefits. It is more efficient to allocate some teachers for more academic work, others for research, and the rest for writing textbooks and manuals. Accordingly, the criteria of certification of teaching staff should be clarified and it is necessary to pay attention to important academic work and its direct support (preparation of textbooks, teaching aids, teaching materials, introduction of innovative technologies);

3) as the professionalism of a teacher assumes availability of many competencies, it requires constant work on their broadening and the acquisition of new ones. In this regard, it is necessary to provide a systemic and continuous process of training and control over that must be taken by the management of universities. Teachers must be directed to choose relevant courses, perform careful selection of both organizations providing similar services and candidate instructors for training. Such an approach is necessary to ensure that they can later share with and transfer new knowledge to colleagues;

4) revise certain standard hours for performing various activities by teachers for higher objectivity, reliability and validity;

5) facilitate the implementation of a clear and effective organization of work of a teacher by preparing a flexible schedule of classes, eliminating large breaks and unnecessary distractions for other types of activities;

6) implement a thorough selection of candidates for the position of a teacher on the basis of special tests and evaluation of an open trial lesson;

7) in order to retain existing and attract new qualified teaching staff, it is strongly recommended to reconsider the system of motivation for work. Work remuneration and stimulus must be performed in a realistic, tangible and systematic way, without plain standardization, accounting for each significant contribution to improving the professionalism. This will allow raise the status of a teacher at a university and the quality of education;

8) in order to improve pedagogical skills and ensure professional growth of young teachers, mentoring system must be established in a serious way and make it truly effective, as well as consider the implementation of such a mechanism and the remuneration system;

9) make public the results of students' survey to determine their satisfaction with the pedagogical activity of teachers. Today, a teacher is unable (and perhaps unwilling) to see their individual results in order to react and take actions to improve their professionalism;

10) in order to bring the content and quality of Kazakhstani education to international level, it would be reasonable to invite foreign teachers to run master classes in conducting various types of training undertaken in foreign higher schools.

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### **ПЕДАГОГИКАЛЫҚ ҚЫЗМЕТКЕРЛЕРІНІҢ ПРОФЕССИОНАЛИЗМІ БІЛІМ БЕРУ САПАСЫНЫҢ СИНОНИМЫ РЕТІНДЕ**

**Аннотация:** Осы мақалада мемлекеттік органдар, университеттің басшылығы және білім беру қызметтерін тұтынушылар үшін оқытушылар құрамының кәсібилігі критерийлері келтірілген; профессорлық-оқытушылық құрамның кәсібилігін көтеру және сол арқылы жоғары білім сапасын арттыру жөнінде шаралар ұсынылады.

Осы мақаланың мақсаты - жоғары мектептің профессорлық-оқытушылық құрамының кәсібилігін анықтау және оны жетілдіру жолдарын дамыту. Зерттеудің әдіснамалық негізі университеттің оқытушы-

ларының кәсіптік құзыреттілігі саласындағы отандық және шетелдік сарапшылардың, елдегі университеттің қызметін реттейтін нормативтік-әдістемелік құжаттардың, студенттердің сауалнамаларының нәтижелерін зерттеу болып табылады.

Зерттеу нәтижелерін жоғары оқу орындарында білім беру сапасын жақсартуға бағытталған іс-шараларды әзірлеу үшін университеттің профессор-оқытушылар құрамы мен басшылығы пайдалана алады.

**Түйін сөздер:** жоғары білім, білім беру сапасы, профессор-оқытушылар құрамының кәсібилігі, кәсібилік критерийлері, кәсіби құзыреттілік.

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### ПРОФЕССИОНАЛИЗМ ПЕДАГОГИЧЕСКОГО ПЕРСОНАЛА КАК СИНОНИМ КАЧЕСТВА ОБРАЗОВАТЕЛЬНЫХ УСЛУГ

**Аннотация:** В данной статье изложены критерии профессионализма преподавательского состава, для использования органами государственной власти, руководством университета и потребителями образовательных услуг; предлагаются меры по повышению профессионализма преподавательского состава и, тем самым, повышению качества высшего образования.

Целью данной статьи является выявление критериев профессионализма профессорско-преподавательского состава высшей школы и разработка путей совершенствования. Методологической основой исследования являются научно-исследовательские работы отечественных и зарубежных специалистов в области профессиональной компетентности преподавателей вуза, нормативные и методические документы, регламентирующие деятельность вуза в республике, результаты опросов студентов.

Результаты исследования могут быть использованы преподавательским составом и руководством университетов для разработки мер, направленных на повышение качества обучения в высших учебных заведениях.

**Ключевые слова:** высшее образование, качество образования, профессионализм преподавательского состава, критерии профессионализма, профессиональная компетентность.

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## **FINANCIAL MECHANISM OF MANAGEMENT OF THE PUBLIC DEBT OF THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** The financial mechanism is an active element in the system of governance, economics and finance in society. In any state for the implementation of financial policy, its successful implementation is used, as an element of management and regulator of economic relations, a financial mechanism. It is a combination of ways of organizing financial relations used by society in order to ensure favorable conditions for economic and social development.

The financial mechanism includes the types, forms and methods of organization of financial relations, methods for their quantitative determination. The financial mechanism is considered in action, it is active and includes complex elements, has a subsystem.

The complex system of economic mechanism, its links, levers, elements is in constant change, interaction in accordance with the tasks put forward and solved at a certain stage in the development of society, its production relations, or part of these relations associated with the development of a particular sphere, branch of the national economy.

**Keywords:** finance, mechanism, innovation, budget, development, national debt.

### **MAIN PART**

In a market economy and the deepening of market relations, such concepts as incorporation, dividends, licenses, currency funds are introduced into practice, new types of taxes, targeted cash transfers are approved. The financial mechanism becomes complicated, mutual requirements and obligations in the sphere of taxes, dividends, etc. are increasing. The above-mentioned components of the economic mechanism used in the practice of managing and managing the economy are designed to activate the activities of enterprises and firms not to deepen contradictions in society, but to satisfy common interests all market participants.

The tasks of improving the financial mechanism at the present stage of economic development of the Republic of Kazakhstan, taking into account international experience, are associated with the broad democratization of production, the introduction of commercial principles, market regulation, and the strengthening of economic interest in business results. The combination of private and public ownership, the presence of private business is governed by the activity of the financial mechanism throughout the country.

Through the rational use of cash income, savings and funds, the financial mechanism influences the final results of production, the formation of financial resources, the functioning of the financial market.

The financial mechanism reveals a complication of relations if its levers and incentives are used incorrectly. For example, unacceptable tax rates, large and cumbersome taxation, failure to pay dividends due to low income, imposing restrictions on the financial interest of business entities, lead to a denial of the active role of the financial mechanism in society, and vice versa, the financial mechanism becomes a brake. Only an objective economic, financial, public policy based on legal norms can correctly realize the possibilities of a financial mechanism. Financial policy acts as a conductor of the financial mechanism, and financial law is the basis for developing the actions of the financial mechanism.

The financial mechanism, as well as the economic mechanism as a whole, has an internal, inherent structure. To characterize it, it is advisable to use such concepts of system analysis as a subsystem, block, element.

The subsystem (part) of the financial mechanism represents the most significant driving forces of the financial mechanism - financial planning, financial leverage and incentives, organizational structure, legal regime of the financial system, financial control. If there is a logical relationship between the planning of financial resources based on the development of clear guidelines with high organization of financial work and control, then the financial mechanism manifests itself in the framework of objective requirements.

The block (link) of a financial mechanism is a set of homogeneous interconnected elements united on the basis of a common share orientation. The block includes: financial forecasts, plans and balance sheets, financial indicators, funds for financial support of reproduction and stimulation, legislative and regulatory acts governing financial relations. Composite blocks only explain the concept of a financial mechanism more broadly. However, forecasts and plans, if they are unfounded, lead to distorted financial indicators, and this leads to a hasty decision-making, various amendments.

The element of the financial mechanism is the simplest economic form through which the interests of the participants in social production are manifested in a specific way. The interests of the state are aimed at the formation of state finances, at the financial support of state programs in the economic and social spheres, and the interests of economic entities are aimed at maintaining financial stability and economic stability. Mutual counter-interests of the participants are satisfied through a financial mechanism [4, 119].

Characteristic features of the financial mechanism are its dynamism, continuous improvement, close interaction with the links of the economic mechanism. The action of the components of a financial mechanism must be considered with the conjugate components of other economic mechanisms, when they interact in specific conditions, taking into account the combination of the interests of society, the primary cost-accounting unit, and individual employees.

In formulating financial policies, one should proceed from specific historical conditions. They must take into account the specifics of each stage of development of society, the peculiarities of both the domestic and international situation, the real economic and financial possibilities of the state.

The purpose of financial policy is the most complete mobilization of financial resources necessary to meet the urgent needs of the development of society. In accordance with this financial policy is designed to create favorable conditions for the revitalization of business activities. Much attention is paid to the definition of rational forms of withdrawal of enterprises' incomes in favor of the state, as well as the share of the population's participation in the formation of financial resources. Great importance is attached to improving the efficiency of the use of financial resources by distributing them among the spheres of social production, as well as concentrating them on the main directions of economic and social development.

The Ministry of Finance of the Republic of Kazakhstan, together with the Ministry of Economy and Budget Planning of the Republic of Kazakhstan, needs to create a single information database on government debt.

To the Ministry of Economy and Budget Planning of the Republic of Kazakhstan to improve the mechanisms of interaction and coordination of budget and debt policy with the coordination of monetary policy.

Table 1 - Public Debt Management System

The main elements of the system	Authorized bodies responsible for the functioning of the elements of the system.
1. Assessment of the status and forecast for the medium term state and guaranteed state borrowing.	MEiBP together with National Bank and MF RK
2. Assessment of the state and forecast of public and publicly guaranteed debt.	
3. Determination of the limit of government debt and the limit of state guarantees.	MEiBP RK
4. Determination of volumes, forms and conditions of borrowing by the Government, volumes of repayment and servicing of government debt, approved in the republican budget for the relevant financial year.	MF RK
5. Implementation of state loan registration.	
6. Monitoring the receipt, repayment and servicing of government loans.	
7. Monitoring public debt.	
8. Preparation and implementation of measures to optimize the debt structure.	
9. Restructuring of public and publicly guaranteed debt.	
10. Debt refinancing.	
11. Management of the risks of state and state-guaranteed borrowing.	MEiBP RK

In order to improve the Kazakhstani public debt management system, the following untypical features of the debt and economic status of Kazakhstan should be subject to mandatory accounting for developed countries:

- prevalence in the structure of public debt liabilities to foreign creditors;
- dominance in the debt structure of non-market debt, formed mainly as a result of attracting related and conditional loans from foreign governments and international financial organizations and active management of which based on market mechanisms is at least problematic;
- the presence in the debt portfolio of a significant amount of previously restructured liabilities, which indicates the poor quality of this portfolio and the unsatisfactory credit history of the borrower;
- the continued strong dependence of the solvency of Kazakhstan on the conjuncture of world energy and raw materials markets;
- lack of sustainable access to the market for derivative financial instruments at acceptable financial conditions [1].

The improvement of the existing public debt management system should be based on the unconditional provision of state security in the field of finance and compliance with the following basic principles:

- unconditional fulfillment of debt obligations in accordance with the existing payment schedules, elimination of “failures” when transferring funds to repay and service public debt;
- compliance of decisions made with the economic and financial situation of Kazakhstan, its credit rating, stimulation of the process of raising the sovereign credit rating;
- phasing, consistency and strict sequence of measures to reform the system [2].

The republic continues to implement programs to deepen market reforms, including these areas with the development of appropriate financial policies and mechanisms for its implementation.

So, based on the tasks assigned to financial policy, leading economists divide the latter into three types: the policy of economic growth, the policy of stabilization and the policy of restricting business activity.

Under the first, that is, the policy of economic growth understand the system of financial measures aimed at increasing the actual volume of gross national product and increasing employment. This stimulating financial policy includes:

- the growth of government spending;
- reduction of tax burden.

In other words, if there is currently a balanced budget, financial policies should move towards a budget deficit during a recession or depression.

If the government uses fiscal and public expenditure policies, trying to keep output at its typical level for the country in question and to maintain price stability, it is considered that the government is pursuing a stabilization policy. At the same time, it would be wrong to assume that the stabilization policy replaces the stimulating and restraining financial policies in their quest for equalizing the economic situation in the state, since there are serious differences between these concepts. For example, the policy of economic growth can be pursued by the state even in the period when the volume of production peculiar to a country has already been exceeded and production tends to its potential level, while the stabilization policy has no right to pursue such goals.

In turn, the policy of restricting business activity, on the contrary, is aimed at reducing the real volume of GNP compared to its potential level and is applied by the government during the boom or boom period in order to avoid an overproduction crisis and inflation arising along with excess demand.

A deterrent policy implies:

- reduction of government spending;
- increase taxes.

In other words, fiscal policy should focus on the positive balance of the government budget, if the economy is faced with the task of controlling inflation.

Now, having considered what types of financial policy the government applies in one or another situation that has developed in the national economy, it is necessary to dwell in greater detail on the mechanism itself of the impact of financial policy on the country's economy.

So, the implementation of financial policy is carried out in three stages:

1. The development of scientifically based concepts for the development of finance, which is formed on the basis of studying the requirements of economic laws, a comprehensive analysis of the prospects for improving production and the state of the needs of the population.

2. Determination of the main directions of the use of finance for the future and the current period, that is, the development of a strategy and tactics of financial policy. Here, based on the goals set, they take into account the growth and decline of financial resources, as well as external and internal political and economic factors.

3. Actually the implementation of practical actions aimed at achieving the goals.

Naturally, the direct influence of financial policy on the economy begins only at the third stage, but it is determined by the content of the two previous stages. However, this mechanism is only partially correct, since it does not take into account all the possibilities of financial regulation.

It is known that there are two types of financial policy:

a) discretionary policy or policy pursued directly by the government;

b) non-discretionary financial policy, that is, built-in stabilizers.

The method of implementing financial policy described above undoubtedly belongs to its first type. For the second, it will be absolutely wrong, which is explained by the peculiarities of the latter.

Under the non-discretionary financial policy understand a number of the tax system's ability to self-stabilize, that is, some of its features that allow you to regulate economic activity in the country without the direct intervention of any governing bodies.

## CONCLUSION

Public finances play an important role in the redistribution of national income, the development of social reproduction, the formation of the economic structure of society, and the improvement of production forces. Financial resources of the state are used for the implementation of social programs, the maintenance of the state apparatus and the armed forces, the implementation of foreign economic activity.

Central to the public finance system is the state budget.

Public debt is caused by the use of government loans as a form of attracting financial resources for expanded reproduction and meeting social needs. The state debt is repaid by the state at the expense of the state budget.

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## ҚАЗАҚСТАН РЕСПУБЛИКАСЫ МЕМЛЕКЕТТІК МІНДЕТІ МЕНЕДЖМЕНТІНІҢ ҚАРЖЫЛЫҚ ТЕХНИКАСЫ

**Аннотация.** Қаржы тетігі - қоғамдағы басқару, экономика және қаржы жүйесіндегі белсенді элемент. Қаржылық саясатты жүзеге асыру үшін кез-келген мемлекетте оны табысты іске асыру, экономикалық қатынастарды басқару және реттеу, қаржы механизмі элементі ретінде қолданылады. Бұл қоғамның экономикалық және әлеуметтік даму үшін қолайлы жағдайларды қамтамасыз ету үшін пайдаланатын қаржылық қатынастарды ұйымдастырудың көптеген жолдары.

Қаржылық тетік қаржы қатынастарын ұйымдастырудың түрлері, нысандары мен әдістерін, олардың сандық анықтау әдістерін қамтиды. Қаржылық тетік қолданыста қаралады, ол белсенді және күрделі элементтерді қамтиды, шағын жүйесі бар.

Экономикалық тетіктің кешенді жүйесі, оның байланыстары, тұтқыштары, элементтері үнемі өзгеріп отырады, қоғам дамуының белгілі бір кезеңінде, оның өндірістік байланыстарында немесе белгілі бір саланы, ұлттық экономиканың саласын дамытуға байланысты осы қатынастардың бір бөлігінде шешілген және шешілген міндеттерге сәйкес өзара әрекеттеседі.

**Түйін сөздер:** қаржы, механизм, инновация, бюджет, даму, мемлекеттік қарыз

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### **ФИНАНСОВЫЙ МЕХАНИЗМ УПРАВЛЕНИЯ ГОСУДАРСТВЕННЫМ ДОЛГОМ РЕСПУБЛИКИ КАЗАХСТАН**

**Аннотация.** Финансовый механизм - активный элемент в системе управления, экономикой и финансами в обществе. В любом государстве для реализации финансовой политики, успешного ее проведения в жизнь используется, как элемент управления и регулятор экономических отношений, финансовый механизм. Он, представляет собой совокупность способов организации финансовых отношений, применяемых обществом в целях обеспечения благоприятных условий для экономического и социального развития.

Финансовый механизм включает виды, формы и методы организации финансовых отношений, способы их количественного определения. Финансовый механизм рассматривается в действии, он активен и включает сложные элементы, имеет подсистему.

Сложная система экономического механизма, его звеньев, рычагов, элементов находится в постоянном изменении, взаимодействии в соответствии с выдвигаемыми и решаемыми задачами определенного этапа развития общества, его производственных отношений, или части этих отношений, связанных с развитием той или иной сферы, отрасли народного хозяйства.

**Ключевые слова:** финансы, механизм, инновации, бюджет, развитие, госдолг

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COMPLEX IN THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** The authors described the importance of state financial support for the agro-industrial complex in accordance with the example of foreign countries leading in the field of agriculture. The modern world is set for economic integration, namely, in the context of globalization, increased competition, instability of consumer demand, the organizations of the Kazakhstani agro-industrial complex need to use modern development strategies and ideas and ensure financial and economic stability and reduce commercial risks. Management based on the strategy of diversification of production is important because the process of diversification is innovative, leading to the use of a new type of systemic technology and technology, new organization of labor and production with the support of the state.

**Keywords:** agriculture, finance, support, agribusiness, modernization, innovation, business.

In the Message of the President N.Nazarbayev “New Decade - New Economic Growth - New Opportunities of Kazakhstan”, an important segment of economic diversification will be the modernization of the country's agro-industrial complex. The head of state highlighted three main areas of development of the agro-industrial sector (hereinafter referred to as the agro-industrial complex): increasing labor productivity through the introduction of new technologies and the growth of processing of agricultural raw materials; ensuring food security of the country; realization of the export potential of the agricultural industry.

Public finances currently have a starting character, spending on the new program until 2020 increased from 1.1 trillion. tenge to 1.7 trillion tenge (2.4 trillion tenge, the total cost of 2017-2021) compared with the previous program - “Agribusiness 2020”, for which in 2017-2020, it was required to allocate 2.8 trillion tenge. Based on the calculation of the data of the action plan for the implementation of the state program for the development of the agro-industrial sector for 2017–2021, a decision on it was made in March 2017 and the concept of the overall program shown in November 2016.

If we exclude the costs of water management, then the new program accounts for 72% of all expenses for subsidies, as opposed to 56% in the previous program, which means that subsidies are not reduced. direct support for agriculture is the state with all its consequences. The effect of the state remains doubtful, while before the crisis of 2008–2009, agriculture increased by 5% on average per year, then from 2009 by 4% on average per year, with a comparable level of support. [46-49]

The support of the agrarian sector is essentially visible, that is, it takes place to shift indicators to an intermediate link between the producer and the consumer, i.e. infrastructure: roads, points of processing, distribution and storage of agricultural products, marketing, research centers. In this way, the value chain will expand. In market competition, weak structures will give way to more productive forms of farming. Comprehensive care for agricultural producers from the state will lead to the effect of an inconsistent system, to have state aid, this means reducing incentives for a responsible business conduct (moral hazard), which distorts market signals.

The trend of the present world is such that there is a reduction in direct support of manufacturers for supporting scientific research and their application in general, which in turn lead to more stable and high rates of increase in production efficiency.

The level of agricultural support in Kazakhstan exceeds annually 1% of GDP, while the agricultural sector itself either stagnates or has a high formation rate. It is worth considering that the part of agriculture in the economy is at the level of 5%, the issue of support brings clarity. Table 1 presents the State program to support the development of the agro-industrial complex of the Republic of Kazakhstan

Table 1 - State Programs in the APC RK

	Agribusiness 2020	APK 2017-2021*	Change, %
Financial instruments	462	360	-22%
Crediting	-	240	-
Livestock	374	316	-15%
Crop production	423	255	-40%
Veterinarian / phytosan. Control	220	100	-54%
Science, education, etc.	120	50	-58%
Water resources	1 231	423	-66%
Total costs, billion tenge	2 851	1 746	-39%
Including subsidies	909	954	5%
A note compiled by the author based on source data of Ministry of Agriculture			

Given the performance and financial instruments expected, subsidized interest rates, which will provide guarantees to increase the volume of loans and leasing.

With the exception of subsidies in crop production, for wheat, subsidies for other grains, oilseeds, and sugar beet are increasing. Fictitious increase in areas by firms recipients abolished hectare subsidies due to abuse, are partially only for forage crops, cotton and rice, which in our opinion are the best option. Obtaining subsidies is now focused on the final result, i.e. in relation to the products delivered, with a focus on promoting the use of quality seeds. Livestock is very much shifted to the actual result: the offspring of livestock, the acquisition of domestic breeding livestock, increasing the productivity of livestock, etc. Agricultural cooperation in the new program stands alone. Namely, by gradually involving half a million subsidiary and small peasant farms in agricultural cooperation, it will be possible to increase the marketability of the production of agri-food products, which will already increase the availability of financial resources.

It is expected that by increasing the use of fertilizers, pesticides, high-quality seeds, increasing mechanization, efficiency in crop production will increase, in contrast to the previous program, a more significant decrease in the area of wheat crops is expected. In animal husbandry, improvements are associated with improvement of pastures, their irrigation, increased production of animal feed, an increase in the proportion of breeding animals, etc.

In general, an increase in agricultural production, logistics planning, should ultimately increase the processing of agricultural products. Together with this introduction, we expect a decrease in dependence on imports of finished products. The program for the development of the agro-industrial sector, whose main goal is to ensure the production of competitive agro-industrial products in demand in the markets, with particular attention to the growth of labor productivity in agriculture by 38% in real terms to the 2018 level; growth of gross output (services) of agriculture by 30% in real terms to the level of 2018. These criteria look quite convincing. The period from 2010 to 2018 shows that labor productivity increased by

30%, to which, among other things, contributed to the reduction in the number of employees in the CX by 36%. The growth rate of gross output by 30% also looks more stable, i.e. implies an increase of 4.5% on average per year. At the same time, over the previous decade, CX grew at an average rate of 3.5% per year. Growth in agriculture for the period of the program will be 3.5-4% per year or 25% during the program.

We know that in previous programs, the main emphasis was on extensive quantitative indicators: expanding the sown area (by about 3%), increasing the production of food resources, irrigating pastures, increasing the harvest, and getting a share of imports in the market. It is obvious that the administrative approach to the management of a large part of the economy and the basic agro-industrial complex prevails, while the private initiative does not have the appropriate conditions for stable development. However, it is worth noting that with the available potential, the agricultural sector of the country is underdeveloped, import-dependent, the risks of a sharply continental climate, land degradation and their blowing.

For example, the World Bank has prospects for the development of the agricultural sector, it is based on 5 key areas:

1) Long-term competitiveness is the introduction of a key point for foreign trade and investment, which stimulates growth by increasing competition, promoting the growth of more productive forms and creating opportunities for technological acceleration;

2) Productivity growth based on scientific knowledge makes a major contribution to output growth;

3) post-production operations are processing, logistics, etc. potentially can create more jobs and incomes;

4) personal subsidiary farms; this comprehensive support can improve the quality of agricultural production;

5) state support should play the role of a stimulator and market transformations, improve the final indicators and other objectives of the problem. However, the necessary support for agriculture has not yet been achieved, and the structural changes necessary to improve competitiveness have not been achieved. In fact, the population is forced to pay twice for the low efficiency of resource use for measures of state agricultural production — first as taxpayers and then as consumers, paying for higher prices, which in turn causes the state to focus on a low coefficient of subsidies for production.

Countries that have achieved success, in agriculture, when reviewing the analysis, tells us about the significant and increasing costs of supporting research and innovation, irrigation, infrastructure, and food safety by the state. Support for the agricultural sector in these countries has led to increased competition, productivity growth, diversification of production, expansion of exports and the flow of rural populations into the agricultural industry.

One of the strategic sectors of the republic is the production of grain crops, the level of turnover of which depends on the country's food security, incomes and employment of the population, development of related industries (animal husbandry, poultry farming, food and processing industry).

The positioning of Kazakhstan as one of the world's leading exporters of wheat grain and flour, allows you to show the qualitative characteristics of Kazakhstan wheat. In addition, in recent years there has been a favorable market environment for increasing the turnover of export of fodder crops, in particular, barley, oilseeds (curly flax, rape, soybean).

The master plan for the "Stabilization of the grain market" should be a fundamental tool to induce the right course, taking into account the climatic features of the region to diversify crop production with an increase in the area of oilseeds, legumes, cereals, fodder and vegetable crops, to increase and stabilize crop yields, taking into account grain crops, stabilization of the grain market by creating a single grain holding company on the basis of AO NK "Food Contract". In the field of crop production in recent years, including in grain production, the main vector is to stimulate business for the introduction of new technologies, increase land productivity through diversification of crop production, chemicalization, technical re-equipment, including in the framework of budget programs to reduce the purchase price of fuel and lubricants and other inventory items necessary for reproduction of spring field and harvesting

works. In the field of seed subsidies, to reduce the cost of mineral fertilizers, herbicides, irrigation water delivery services, determine seed quality, as well as through credit programs through the National Holding KazAgro JSC.

Table 2 - State support of the crop industry

	million tenge				
	2014	2015	2016	2017	2018
Reducing the cost of fuel and TMC	20 244	16 263	14 206	18 098	20 114
Reducing the cost of mineral fertilizers	2 616	2 929	3 215	4 095	5 013
Reducing the cost of herbicides			600	1 859	1 859
Subsidizing the cost of elite seeds	2 096	1 911	2 088	2 422	2 451
Reimbursement of leasing equipment remuneration rate	119	79	40		
Subsidizing the cost of water delivery services	1 175	1 358	1 492	1 566	1 566
Subsidizing bookmarks and growing, perennial plantations of fruit crops and grapes	1 552	2 480	1 513	1 520	1 836
Subsidizing the examination of the quality of Kazakhstan cotton	179	54	54	247	387
Crop Insurance Support	100	100	100	1 203	65
Cheaper transportation costs when exporting grain			11 828	5 000	20 091
Determination of varietal and sowing qualities of seeds	216	236	257	271	292
Purchase of grain in state resources	11 829	11 178	11 250	12 750	6 750
Storage and movement of grain of the state reserve of food grain	831	1 153	851	911	943
Movement of food grains (for release of HSP)		303	1 135	1 700	1 745
Lending for the organization of spring field work			42 600	64 339	57 398
Total:	40 957	38 143	91 328	115 981	120 509
The note is compiled by the author on the basis of data from the source of the master plan "Stabilization of the grain market"					

For the successful entry of Kazakhstan into the WTO is to increase the overall level of competitiveness of the economy of the republic as a whole, including its agricultural sector, as negotiations on agriculture are among the most difficult, because this industry plays a crucial role in the economy of almost all countries of the world.

In Kazakhstan, there is a positive trend in the development of agriculture, but it is worth considering that, despite all this, the agrarian sector provides only about 5% of the republic's GDP. Due to the low level of competitiveness of agricultural products, the share of imports of basic foodstuffs on the domestic market remains high.

The government of the republic is taking many measures to improve the competitiveness of the agricultural sector of the country. However, there are still problems of underdevelopment of budget funds allocated to improve the competitiveness of the agricultural sector of the country, low rates of introduction of advanced technologies in agricultural production.

In terms of joining the WTO, we have a low level of competitiveness of products of the agricultural sector leads to an increase in imports of products, which complicates the implementation of the strategy for joining the 50 most competitive countries in the world. The application of the necessary measures to

improve the agrarian sector does not make sense without increasing state support for the producer if the Government of the Republic plans to implement an adequate budget, credit and tax policy to create the appropriate department, which in turn will coordinate the export of agricultural products to foreign markets. It is economically feasible to diversify in farms, because it allows us to quickly use free resources, respond to the situation on the market and significantly reduce the level of business risk.

State support for agriculture continues due to the importance of this sector, while the average cost of the mid-90 is equivalent to 1.4% of GDP, slightly higher than the current level of 1.2% of GDP. At the end of last year, the concept of a new state support program was formulated agribusiness 2017-2021. In Kazakhstan, the level of agricultural assistance annually exceeds 1% of GDP, and the agricultural sector either stagnates or high rates are the result of favorable climatic conditions. At the same time, the share of agriculture in the economy is below 5%, thereby raising the question of the proportionality of such assistance.

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### **ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ АГРОӨНЕРКӘСІП КЕШЕНІҢ МЕМЛЕКЕТТІҢ ҚАРЖЫ ҚОЛДАУЫ**

**Аннотация.** Авторлар агроөнеркәсіптік кешенге мемлекеттік қаржылай қолдаудың ауыл шаруашылығында жетекші шетел мемлекеттерінің үлгісіне сәйкес маңыздылығын атап өтті. Қазіргі заманғы әлем экономикалық интеграцияға бапталған, атап айтқанда, жаһандану, бәсекелестікті жоғарылату, қаржылық және экономикалық тұрақтылықты қамтамасыз ету және коммерциялық тәуекелдерді азайту үшін қазақстандық агроөнеркәсіптік кешен ұйымдарына тұтынушылық сұраныстың тұрақсыздығы тұрғысынан, нарықтың басқа қатысушыларымен өзара әрекеттесудің заманауи стратегиясы мен моделін пайдалану қажет. Өндірісті әртараптандыру стратегиясына негізделген менеджмент маңызды, себебі әртараптандыру үдерісі инновациялық жүйе болып табылады, ол жүйенің технологиясын және жаңа түрдегі технологияны, мемлекеттің қолдауымен еңбек пен өндірісті жаңа ұйымдастыруды тудырады.

**Түйінді сөздер:** ауыл шаруашылығы, қаржы, қолдау, агробизнес, жаңғырту, инновация, бизнес.

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### **ГОСУДАРСТВЕННАЯ ФИНАНСОВАЯ ПОДДЕРЖКА АГРОПРОМЫШЛЕННОГО КОМПЛЕКСА В РЕСПУБЛИКИ КАЗАХСТАН**

**Аннотация.** Авторами описана важность государственной финансовой поддержки агропромышленного комплекса в соответствии с примером зарубежных стран лидирующих в области сельского хозяйства. Современный мир настроен на экономическую интеграцию, именно, в условиях мировой глобализации, усиленной конкуренции, нестабильности покупательского спроса организациям казахстанского агропромышленного комплекса для обеспечения финансово-экономической стабильности и снижения коммерческих рисков необходимо использовать современные стратегии развития и модели взаимодействия с другими участниками рынка. Управления на основе стратегии диверсификации производства важно, поскольку процесс диверсификации является инновационным, обуславливающим применение системной техники и технологии нового типа, новой организации труда и производства при поддержке государства.

**Ключевые слова:** сельское хозяйство, финансы, поддержка, АПК, модернизация, инновации, бизнес.

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[sabirovar68@gmail.com](mailto:sabirovar68@gmail.com), [Dzhumaeva.a@mail.ru](mailto:Dzhumaeva.a@mail.ru), [g.makasheva@bk.ru](mailto:g.makasheva@bk.ru)**ECONOMIC AND ADMINISTRATIVE LEVERS OF REGULATION  
OF ENTREPRENEURSHIP IN THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** A market economy without a legal framework that establishes and enforces respect for property rights and the “rules of the game”, our free enterprise system could not exist. However, most people are not aware of the impact of the regulations or the process by which they are produced.

We need the rules for the proper functioning of the economy and society, as they support the markets, protect the rights and safety of citizens and ensure the delivery of public goods and services. Companies complain that red tape hinders competitiveness, and citizens complain about the time it takes to fill out government documents. In addition, the development and enforcement of regulations also require resources for government and state administrations. Regulations may also have unintended costs when they become obsolete or incompatible with the achievement of policy objectives.

**Keywords:** economics, law, business, regulation, leverage, management, support.

**INTRODUCTION**

The goal of state regulation is to ensure the implementation and protection of public interests, such as the defense and security of the state, the protection of human and civil rights and freedoms, and the protection of the environment. Without government intervention in the economy, it is impossible to guarantee the rights and freedoms of a person and citizen, enshrined in the Constitution of Kazakhstan.

V. V. Laptev and S. S. Zankovsky emphasize that government regulation is a combination of measures of economic, legal and organizational impact on the economy, including through state support and protection of business entities, as well as state control over compliance with the requirements of legislation by subjects such activities [1, p.343].

Other approaches to the definition of the concept of state regulation of business activities also deserve attention. For example, EP Gubin defines state regulation as the activity of the state in the person of its bodies, aimed at implementing state economic policy using special means, forms and methods [2, p.397].

As S.P.Moroz notes, tax regulation of business relations is manifested simultaneously as the state’s activities to ensure the completeness of tax revenues and other mandatory payments to the budget, and the state’s activities to provide various benefits and preferences for sustainable economic growth [3, p.87].

**MAINPART**

State regulation of business activities in the Republic of Kazakhstan is carried out through the following main forms:

- 1) economic (tax regulation, customs regulation and currency regulation);
- 2) organizational (accounting of business entities, licensing, technical regulation, consumer protection, etc.);
- 3) legal (publication of regulatory legal acts regulating entrepreneurial activity).

State regulation of economic and social activities permeates our lives. While regulation in many cases brings important public goods, the rules are often imposed on individuals and organizations that think or analyze too little of what is obtained in comparison with losses incurred in time, money, indecision and productivity ... Further, the growth of state involvement in the market system sometimes limits our ability to achieve fundamental economic and social goals. The government enforces the laws — these are specific standards or regulations regarding what individuals, businesses, and other organizations can or cannot do.

The state performs its regulatory functions through administrative and economic methods. The command economy is characterized by a predominance of administrative methods of regulation. The system of state regulation of a market economy, by contrast, is based on the use of economic methods.

Administrative, or direct, methods of regulation limit the freedom of choice of an economic entity. For example, directive planning targets for the volume and range of products manufactured or centrally set prices for goods and services — typical administrative regulation methods in a planned economy — deprive an enterprise of the alternative use of resources. In contrast, economic and indirect methods of state regulation do not restrict the freedom of entrepreneurial choice. For example, reducing taxes on a business or, say, lowering the discount interest rate are typical methods of economic regulation aimed at increasing production and enhancing the investment activity of enterprises. The latter increase investment and production, not because they have no other way out. They are completely free to choose a production program and investment policy. Simply reducing taxes and accounting interest rates make the growth of production and investments more profitable than before. The distinction between administrative and economic regulatory methods is somewhat arbitrary. In order to use any indirect regulator, you need a preliminary administrative decision of the relevant state bodies, for example, a decision to change tax rates, to provide tax benefits when the National Bank sells government bonds, in this sense any economic regulators bear the stamp of administration. At the same time, any administrative regulator, directly forcing business entities to perform certain actions, simultaneously has a secondary indirect effect on a number of related economic processes [4]. For example, an administrative increase in prices will not only directly determine their new level, but through prices will indirectly influence the state of supply and demand, and in this sense we can say that any administrative methods of regulation bear the features characteristic of economic, indirect regulators. Nevertheless, the criterion considered above makes it possible, as a rule, to distinguish in practice economic methods from administrative ones without any special problems.

The distinction between them is fundamentally important from the point of view of the nature of economic relations.

Administrative methods of regulation are diametrically opposed to the nature of the market; they block the action of the corresponding market regulators. If a company, for example, determines the volume of production and the supply of raw materials, it cannot respond to changes in market conditions by increasing or decreasing output. The higher the scope of administrative methods of regulation, the narrower the scope of distribution and the lower the effectiveness of real market relations.

Economic regulation methods, on the contrary, are adequate to the nature of the market. They directly affect market conditions and, through it, indirectly, producers and consumers of goods and services.

For example, an increase in transfer payments changes the conjuncture of the consumer goods market, increases demand, which, in turn, contributes to higher prices and forces producers to increase the volume of supply.

Economic management practices thus act through the market through market mechanisms.

The transition from a command economy to a market economy is accompanied by cardinal changes in the system of state regulation methods, the destruction of the former system of administrative methods and the creation of a new system of economic regulators.

The destruction of the system of administrative - command management methods blocking market mechanisms is a necessary condition for the formation and self - development of the market. Dismantling the system of administrative regulators marks the beginning of a real transformation towards a market economy. This does not mean, however, a complete rejection of the use of administrative methods in a transition economy [5].

In order to reduce the scale of the crisis of production cuts, to prevent a catastrophic fall in the living standards of the population, the state in the early stages of reforms may, for example, maintain administrative control over the production and sale of a small group of goods that form the basis of the nation's production and personal consumption.

With the deepening of market reforms, stabilization of the economic situation and mastering of economic methods of regulation, the state completely reduces the scope of the use of administrative levers, while not refusing to use them completely.

Even at the final stages of transition to the market and in the conditions of the prevailing market economy, administrative methods of regulation are of no small importance. They are used, in particular, as a means of antitrust policy. Government agencies determine the prices, volume and range of products or services provided for the so-called natural monopolies, establish a system of administrative restrictions



that prevent the strengthening of market monopolization. Administrative regulation is actively used to protect consumer rights and protect the environment.

Numerous standards limiting emissions of hazardous production waste, direct bans on the use of hazardous technologies, production, sale and advertising of products harmful to human health restrict the freedom of entrepreneurship and belong to administrative regulatory methods. Often used methods of regulation of foreign economic activity, such as import quotas, etc.

The most important task of the state in transition is the creation of an integrated system of economic methods of regulation. To this end, all countries engaged in the transition to a market economy, carry out radical reforms of the credit and tax system.

A two-tier banking system, traditional for market economies, is being created, under which the Central Bank, through economic standards, regulates the activities of a wide network of commercial banks. Manipulating the discount rate, changing the form of required reserves and other standards established for commercial banks, carrying out operations with securities. The central bank is able to pursue an active monetary policy [6].

However, it would be a mistake to believe that state regulation is confined to the framework of a command or transitional economy, on the contrary, within the framework of a market economy, the regulatory role of the state is becoming more and more necessary. In the conditions of the market, the state faces a difficult task: on the one hand, it should support and facilitate the functioning of the market system with the help of economic levers, on the other hand: not to destroy this system with excessive influence. Examples of developed industrialized countries, such as the United States and France, indicate that achieving such a golden mean is possible.

In Kazakhstan, as well as in a number of other post-socialist countries, we are faced with an underestimation of the role of the state in the economy. A misunderstanding of the economic role of the state makes it difficult to develop an acceptable concept of state economic policy. It is no secret that we are carrying out reforms "from above", and there is no tragedy in this; moreover, this is the only acceptable form. Otherwise there will be confusion, anarchy, which, in the final analysis, will bring nothing but new destruction. And the role of the state is especially responsible in the historical period we are experiencing, which was called transitional. Without an active state economic policy, it is impossible to reform the economy.

The economy of Kazakhstan is experiencing an unprecedented crisis in history, where all the economic "diseases" have intertwined. The crisis has objective reasons, and therefore not a single post-socialist country has avoided it. Somewhere it turned out to be less, somewhere deeper than ours.

Some scientists are convinced that in this unprecedented crisis an important role was also played by the accelerated refusal of the post-Soviet governments from their "natural" functions. "Denationalization", declared one of the main directions of economic reform, was in itself correct, but uncritically accepted, led in the first, decisive years of reform to a complete loss of manageability of the economy, including the public sector, which was practically the only "legal" sector throughout the country.

In a modern, highly organized market economy, there are practically no areas that are somehow not regulated by the state. It is impossible to formulate in a "one-off manner" the entire spectrum of modern economic policies in relation to the market system, which we do not yet have. For our country, the question can be put on the gradual mastering of modern forms and methods of state regulation of a market economy, highlighting those "eternal" functions of the state that form the framework of the state's economic policy. With this approach, government economic policy can acquire sufficient sense of purpose, reliable guidelines [7].

State support for small business in Kazakhstan is based on republican legislation. The regions are provided with small opportunities within their competence to specify the general installations, to adapt them to the regional conditions for the functioning of small business.

At present, regions have the right to develop and adopt regional programs for the development of small business, create special funds to support it, identify and seek additional sources of financing for them. Regional authorities may also involve MPs in regional government orders. However, these powers are not enough, therefore, in the future, regional and local authorities should be given greater freedom to regulate all aspects of the MP's activities.

In our country, the role of small business is constantly and steadily increasing.

Table 1 - Tasks of entrepreneurship and guarantees in the Republic of Kazakhstan

Tasks	Guarantees
<ul style="list-style-type: none"><li>- significantly and without significant capital investments to expand the production of many consumer goods and services using local sources of raw materials;</li><li>- to create conditions for the employment of the labor force that is being released in large enterprises;</li><li>- accelerate scientific and technical progress;</li><li>- to make a positive alternative to the criminal business and many others.</li></ul>	<ul style="list-style-type: none"><li>- unreasonable interference of government officials in the economic activity of entrepreneurs is not allowed;</li><li>- inspections of the economic and financial activities of entrepreneurs are carried out by authorized state bodies no more than once a year, unless otherwise provided by the current legislation of the Republic of Kazakhstan.</li></ul>

According to Soviet legislation, there was only one form of enterprise - the state enterprise, which carried out almost all types of economic activity. Since the means of production were state property, other forms of economic entities simply did not exist [8].

The Law “On State Support for Small Businesses”, adopted in June 1997 by the Parliament of the country, was an important step towards the economic development of the Republic of Kazakhstan. It identified the main activities in this area and created the legal prerequisites for the development of state and regional programs with the activation of small business as one of the factors of industrial development.

This Law is consistently coordinated with the Law “On State Support of Direct Investments”, Decree of the President of the Republic of Kazakhstan “On Measures to Strengthen State Support and Activization of Small Business Development” and is their logical continuation, symbolizing a constructive dialogue between different branches of government.

On the basis of this law, the procedure for registering a legal entity in the form of a small business entity is simplified. This implies: reduction of terms and fees for registration, list of required documents, reduction of the size of the share capital [9].

The greatest benefits are provided to entrepreneurs who are engaged in production (they are given a three-year deferment of payments for the purchase of land or its rent, they are exempt from payment for registration of rights to real estate within three years from the date of state registration, etc.).

The law not only creates favorable conditions for traditional industries in Kazakhstan, but also lays the foundations for a technological breakthrough in the 21st century.

## CONCLUSION

The solution of one of the main issues affecting the interests of small businesses is to “establish the legal regime of favoring for small businesses, including a preferential tax regime, payment of customs duties”. Of course, it is impossible to demand from one legislative act the solution of all urgent problems. But this Law characterizes progressive trends in legislative activity and causes a feeling of optimism among small business representatives.

Thus, the state, paying great attention to the development of small business, for the development of the economy as a whole, with the aim of protecting and supporting small business entities, establishes by law certain benefits for them. Due to the fact that further improvement of the public administration system in Kazakhstan is associated with the transfer of a number of functions of central bodies to local executive bodies, including the direct support of small business.

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### **ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ КӘСІПКЕРЛІктің РЕТТЕУ ЭКОНОМИКАЛЫҚ ЖӘНЕ ӘКІМШІЛІК ТҰЛҒАЛАРЫ**

**Аннотация.** Мүліктік құқықтарды құрметтеуді және «ойын ережесін» белгілейтін және бекітетін нормативтік база болмаған нарықтық экономика біздің еркін кәсіпкерлік жүйеміз болмайды. Дегенмен, көптеген адамдар нормативтік актілердің немесе олар шығаратын процестің әсерінен хабардар емес.

Нарықтарды қолдап, азаматтардың құқықтары мен қауіпсіздігін қорғауға және қоғамдық тауарлар мен қызметтерді жеткізуді қамтамасыз ете отырып, экономика мен қоғамның дұрыс жұмыс істеуі туралы ережелер

кажет. Компаниялар бәсекеге қабілеттіліктің бұзылуына кедергі келтіреді және азаматтар мемлекеттік құжаттарды толтыру үшін қажетті уақытқа шағымданады. Бұдан басқа, нормативтік құқықтық актілерді әзірлеу және орындау мемлекеттік органдар мен мемлекеттік әкімшіліктер үшін де ресурстардың болуын талап етеді. Нұсқаулықта сондай-ақ олар саясаттың мақсаттарына қол жеткізуге байланысты ескірген немесе үйлеспейтін болған кезде күтілмеген шығындар болуы мүмкін.

**Түйін сөздер:** экономика, құқық, бизнес, реттеу, левередж, басқару, қолдау.

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### **ЭКОНОМИЧЕСКИЕ И АДМИНИСТРАТИВНЫЕ РЫЧАГИ РЕГУЛИРОВАНИЯ ПРЕДПРИНИМАТЕЛЬСТВА В РЕСПУБЛИКЕ КАЗАХСТАН**

**Аннотация.** Рыночная экономика без правовой базы, устанавливающей и обеспечивающей соблюдение прав собственности и «правил игры», наша система свободного предпринимательства не могли бы существовать. Тем не менее, большинство людей не осведомлены о влиянии нормативных актов или процесса, с помощью которого они производятся.

Правила нам необходимы для правильного функционирования экономики и общества, так как они поддерживают рынки, защищают права и безопасность граждан и обеспечивают доставку общественных товаров и услуг. Компании жалуются, что бюрократизм сдерживает конкурентоспособность, а граждане жалуются на время, которое требуется для заполнения правительственных документов. Кроме того, разработка и обеспечение соблюдения правил также требуют ресурсов для правительства и государственных администраций. Нормативные акты также могут иметь непреднамеренные затраты, когда они устаревают или несовместимы с достижением целей политики.

**Ключевые слова:** экономика, право, предпринимательство, регулирование, рычаги, управление, поддержка.

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## **EMPIRICAL RESULTS OF TESTING THE ALTMAN MODELS (BANK SECTORS)**

**Abstract.** An analysis of this study shows that the classification accuracy can be significantly improved with a country-specific assessment, especially with the use of additional variables. In some country models, the information provided by the additional variables helps to raise the classification accuracy to a higher level. The first multidimensional bankruptcy prediction model was developed by E.I. Altman (1968) from New York. Following this groundbreaking work, a multivariate approach to predicting disruptions has spread around the world to researchers in finance, banking, and credit risk. Failure forecasting models are important tools for bankers, investors, asset managers, rating agencies, and even problem firms themselves. The banking sector as the main provider of financing in the economy is especially interested in minimizing the level of non-performing loans in order to maximize profit from lending activities and reduce their own default risk.

**Keywords:** credit risks, empirical research, result, model, banking sector.

### INTRODUCTION

Empirical and research methods theoretical search there are the following groups of research methods:

Empirical, under which the externally real interaction of the subject and the object of study.

The basis of empirical methods is sensory knowledge (sensation, perception, presentation) and instrument data.

General classification of empirical methods:

- Observation;
- Experiment;
- Chatting;
- Poll;
- Questioning.

Study the process of products activities:

- Testing;
- Evaluation.

There are no pure empirical methods in scientific knowledge, since even for simple observation, preliminary theoretical grounds - the choice of object for observation, hypothesis formulation etc.

General scientific empirical methods include observation, experiment, measurement.

Observation is often the only method for a number of natural sciences (a classic example is astronomy, where all research is conducted using this method, and discoveries are made based on the improvement of surveillance technology).

The empirical stage consists of 2 steps (stages) of work:

- the first stage is the process of obtaining, obtaining and fixing facts;

• The second stage is the primary processing and evaluation of the facts in their relationship, that is, it includes:

- understanding and strict description of extracted facts in terms of scientific language;
- classification of facts and identification of main dependencies between them.

During this phase, the researcher performs:

o critical assessment and verification of each fact, clearing it from random and non-essential parts; o description of each fact in scientific language.

Today, it is necessary to change the outlook of domestic scientific and practical circles in relation to credit risk management in general, as well as its assessment and regulation. Credit risk management is able to create added value for the banking business for its founders, as well as provide the bank with additional stability and competitive advantages in the market.

## MAIN PART

In modern conditions, the growth rate of lending to the real sector of the economy is accompanied by fierce competition for the client, which forces banks to pursue an aggressive policy of taking excessive risks, including by significantly reducing lending rates, as well as providing super-large loans.

In this situation, the cost of mistakes associated with the adoption of wrong economic decisions by the bank is especially high, and issues of effective risk management become more important. At the same time, insufficient theoretical understanding of credit risk, as well as the insignificant experience of Russian banks in its assessment and regulation in the market, lead to the consideration of credit risk management as a secondary activity derivative with respect to the strategy of asset growth and profit. In practice, risk assessment units are often perceived as constraining the development of a bank's business, delaying decision-making. Equally relevant is the problem of insufficient consideration of the results of risk assessment in decision making.

A significant problem is that this will lead commercial banks to the need to adapt the credit rating models of potential borrowers, primarily the default rating models, to the specifics of companies issuing bond loans.

The difficulty of regulating credit risk in practice is largely associated with a significant time lag between the moment of its acceptance (and the beginning of earning income) and the period of its most likely realization, which, as a rule, comes later. Unrealized credit risk, remaining unrecognized, can accumulate for a long time in bank portfolios and lead to a rapid onset of catastrophic consequences. Opportunities for risk management at this point are usually minimal.

The most common model for assessing the risk of a company's default using the multiple discriminant analysis method is the Altman model. In his work "Financial ratios. Discriminant analysis, and the prediction of corporate bankruptcy, he investigated 66 American manufacturing companies from 1946 to 1965 and brought out a Z-discriminant, which allows companies to be classified as bankrupt or not bankrupt. The advantage of multiple discriminant analysis is that it considers the entire profile of the parameters inherent in the firm, as well as their interaction. The discriminant function converts the value of variables into one discriminant score, or Z value, which is then used to classify companies. The function obtained by Altman is as follows:

$$Z = 1,2X_1 + 1,4X_2 + 3,3X_3 + 0,6X_4 + 0,999X_5$$

Where Z is the resulting discriminant value, X1 is the share of net working capital in total assets, X2 is the share of retained earnings in total assets, X3 is the share of profit before interest and taxes in assets, X4 is the ratio of equity to liabilities, X5 share of revenue in total assets. Thus, the variables represent five categories of standard ratios, including liquidity, profitability, leverage, financial sustainability and turnover.

Based on the value of Z-score, Altman concluded that there was a risk of a company default. If the discriminant value  $Z > 2.9$ , then the company enters the zone of financial stability and the probability of bankruptcy is extremely small. If the resulting value is in the range from 1.8 to 2.9, then it is not possible to accurately determine the company in any group, this is the so-called gray zone. Finally, a company belongs to the group of potential bankrupts if its Z-discriminant value is less than 1.8.

A huge advantage of the Altman model is its high prediction accuracy (up to 70% of correctly predicted defaults over five years).

In this subclass of models, it is also advisable to consider the model of D. Chessser, which is aimed not only at identifying a potential default, but also of any deviations from the contract between the lender

and the borrower. Chesser investigated 74 bank loans, an equal number of which belonged to groups of good and bad borrowers, that is, those who fully and not fully complied with the terms of the contract, respectively. Based on the analysis of financial statements, the author derived the following model.

$$Z_{Chesser} = \frac{1}{1 + e^{-Y}}$$

$$Y = -2,0432 - 5,24X_1 + 0,0053X_2 - 6,6507X_3 + 4,4009X_4 - 0,0791X_5 - 0,122X_6$$

Where X1 - (Cash + Marketable Securities) / Total Assets, X2 - Net Sales / (Cash + Marketable Securities), X3 - Gross Income / Aggregate Assets, X4 - Total Debt / Total Assets, X5 - Principal capital / Net assets, X6 - Working capital / Net sales.

Moreover, if the discriminant value  $Z_{Chesser} \geq 0.5$ , then the company is referred to as bad borrowers and vice versa. The Altman model assesses the threat of bankruptcy of the company, while the Chesser model aims to identify the risk of any deviation from the initial arrangements of the bank and the borrower, that most of the significant variables in these models are different. These models allow, without much time and computational effort, to analyze a large number of companies and identify problems at an early stage of their occurrence.

Finally, the third type of model based on financial reporting indicators is the binary choice models, logit and probit models, which are based on logistic regression, not linear. The differences are in different distributions of the probability of default and in the types of functional dependence characteristic for the company indicators and the risk of default. Within the framework of these models, at the first stage, important indicators of the creditworthiness of the borrowing company are identified, and at the second stage, the probability of bankruptcy is estimated. Thus, binary choice models imply two types of variables: a combination of independent indicators and a dependent variable indicating which group the borrower should be assigned to.

There are some differences between these models and models based on multiplicative discriminant analysis, for example, from the Altman model. Logit-models suggest obtaining an accurate estimate of the probability of default, which belongs to the interval from 0 to 1. However, as in the models of discriminant analysis, logistic models consider bankruptcy as an event that occurs all at once, and not during a certain time. It is important to remember here that the logistic model is sensitive to multicollinearity, that is, to the presence of a linear relationship between explanatory factors, and the results can be distorted.

So, Altman in his research work showed that the discriminant analysis proposed by him based on financial indicators makes it possible to assess the risk of default more accurately than a model based on neural networks.

The main advantages and disadvantages of the credit risk assessment models described above are summarized in summary table 1.

Table 1 - Advantages and disadvantages of default assessment models

Market-based models	Models based on fundamental indicators			Modern models
	Macroeconomic models	Models based on accounting and financial reporting indicators	Models used by rating agencies	
High predictive power; Availability of information on the market.	Accounting for the cyclical economy; Application in cross-analysis.	Availability of information; High accuracy of the results.	High predictive power; Ease of settlement.	High predictive power; Accounting for non-parametric quantities.
The need to fulfill the hypothesis of market efficiency; The need for a large array of data.	The difficulty of defining cycles; The difficulty of determining the risk of default of a particular borrower.	Analysis of historical data; The possibility of inaccurate reporting.	Rating review is not permanent.	High temporal and physical costs.

According to the results of the analysis of models for assessing the financial stability of companies, the Altman model based on the MDA method and financial reporting indicators was chosen as the base model. The selected model is characterized by high predictive power, and is also attractive due to the availability of information on the financial performance of the analyzed companies. It is often used in research in both Western developed markets and emerging markets in Asia.

Recall that according to the Altman model, the higher the value of the resulting factor, the lower the probability of bankruptcy.

We can argue that the value of the credit risk of issuing companies, calculated using the Altman model, is higher than the corresponding level for companies that have not issued bonds. Thus, the first hypothesis is confirmed.

Table 2 - Descriptive Variable Statistics

	The average	SKO	Minimum	Maximum
X <sub>1</sub>	0.147635828	0.144176101	-0.348446567	0.639274294
X <sub>2</sub>	0.117852828	0.653566039	-6.016205016	1.612845732
X <sub>3</sub>	0.091206011	0.084531972	-0.26560057	0.43921012
X <sub>4</sub>	0.516731903	0.493546697	-0.571806294	3.404594468
X <sub>5</sub>	1.112915585	0.839535811	0.118466409	4.336328801
YLD	5.193924051	12.45066287	-121	93
NUM	1.638618093	1.101220349	0	5.087596335
AMT	0.804289933	2.048587107	0.019037015	23.91882093
RTG	11.04968944	3.377871449	0	21

Further, an econometric study was based solely on bond companies. Table 8 provides descriptive statistics for both the variables of the base model and the proposed new variables related to the characteristics of the bond issue.

Then a correlation matrix was constructed in order for the inclusion of new variables in the model to be statistically justified. The obtained values of the sample correlation coefficients were less than 0.7 in absolute value, which indicates the absence of a strong correlation between the explanatory factors. This allows us to proceed to the next step of building a regression model.

## CONCLUSION

As a result, a model was chosen to conduct further research to determine whether there is a relationship between the bond issues of the company and its credit risk. Also, it is important to note that in a statistical study, credit ratings assigned by rating agencies were used as a dependent variable. Since credit ratings are based on estimates of the probability of default, expected losses and some qualitative indicators of a borrowing company, ratings can be included in the model as indicators of a company's credit risk.

The paper tested and proved the hypothesis about the applicability of the model of E. Altman in the Russian market. The accuracy of the assessment was set at 93%, and the high probability of bankruptcy for Russian companies was reduced to  $Z = 1.23$  compared with 1.8, proposed by Altman directly.

Thus, the Altman model was chosen for further research, since it allows determining the risk of default with high accuracy using available information on the financial performance of companies.

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## АЛТМАН МОДЕЛЬДЕРІН ТЕСТІЛЕУДІҢ ЭМПИРИКАЛЫҚ НӘТИЖЕЛЕРІ (БАНК СЕКТОРЫ)

**Аннотация.** Осы зерттеудің талдауы, әсіресе қосымша айнымалы мәндерді қолдану арқылы, елдің нақты бағалауымен жіктеудің дәлдігін айтарлықтай жақсартуға болатындығын көрсетеді. Кейбір ел модельдерінде, қосымша айнымалы материалдар ұсынатын ақпарат жіктеу дәлдігін жоғары деңгейге

көтеруге көмектеседі. Бірінші көпөлшемді банкротты болжау моделін Э.И. эзірледі. Алтман (1968) Нью-Йорктен. Бұл жаңашыл жұмыстың арқасында ақаулардың болжауына көп мәнді көзқарас бүкіл әлемде қаржы, банк және несиелік тәуекел зерттеушілеріне таралды. Ақауларды болжау модельдері банкирлерге, инвесторларға, активтерді басқарушыларға, рейтинг агенттіктеріне және тіпті проблемалық фирмаларға маңызды құралдар болып табылады. Банк секторы экономиканы қаржыландырудың басты провайдері ретінде, несиелік қызметтен пайда алуды арттыру және өздерінің дефолт тәуекелдерін азайту мақсатында жұмыс істемейтін несиелердің деңгейін барынша азайтуға мүдделі.

**Түйінді сөздер:** кредиттік тәуекелдер, эмпирикалық зерттеулер, нәтиже, модель, банк секторы.

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### **ЭМПИРИЧЕСКИЕ РЕЗУЛЬТАТЫ ТЕСТИРОВАНИЯ МОДЕЛЕЙ АЛЬТМАНА (БАНКОВСКИЙ СЕКТОР)**

**Аннотация.** Анализ этого исследования показывает, что точность классификации может быть значительно улучшена с оценкой по конкретной стране, особенно с использованием дополнительных переменных. В некоторых моделях стран информация, предоставленная дополнительными переменными, помогает поднять точность классификации на более высокий уровень. Первая многомерная модель прогнозирования банкротства была разработана Э.И. Альтманом (1968) из Нью-Йорка. После этой новаторской работы многовариантный подход к прогнозированию сбоев распространился по всему миру среди исследователей в области финансов, банковских и [кредитных рисков](#). Модели прогнозирования отказов являются важными инструментами для банкиров, инвесторов, управляющих активами, рейтинговых агентств и даже для самих проблемных фирм. Банковский сектор как основной поставщик финансирования в экономике особенно заинтересован в минимизации уровня неработающих кредитов с целью максимизации прибыли от кредитной деятельности и снижения собственного риска дефолта.

**Ключевые слова:** кредитные риски, эмпирические исследования, результат, модель, банковский сектор.

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amir\_sembekov@mail.ru**CRYPTOCURRENCY IN THE MODERN ECONOMY**

**Abstract:** The article examines the economic content of crypto currency, capitalization issues and basic requirements for investment. The author conducted a comparative analysis of the dynamics of capitalization of the 10 largest crypto currencies for 2017 and 2018. The problems of crypto currencies, the complexity of their implementation and use in the modern economy are identified, the risks that have an impact on the development of the crypto currency market are identified. On the basis of the analysis the relevant conclusions are made. It should be noted that the study of methods of development of the crypto currency market in foreign countries is necessary for the possible use of their experience with the most effective solutions in the preparation of General principles of state regulation.

**Keywords:** the digital economy, capitalization, crypto currency, bit coin, financial elements, the technology of the block chain, the transaction.

**Introduction.** The development of digitalization of the national economy expands the content of the economic category "money", which is associated with new technological opportunities. Crypto currency is becoming an element of the digital economy. In contrast to the traditional economy, in which value added is based on real work, in the digital economy – on information, its processing through the use of new technologies and knowledge. There is a phenomenon of information cost estimation. The end product is not the extraction of natural resources, but the formation of new knowledge based on information. There are new varieties of money in the form of virtual electronic forms with many characteristics of the monetary category, as an investment asset, means of payment, decentralization of the issue of electronic money, the objective nature of the formation of the money supply, etc. The relevance of the use of virtual money in the field of socio-economic life increases, despite certain shortcomings and difficulties of the initial growth. In recent years, the phenomenon of "electronic currencies" has been actively manifested in financial relations, the most advanced was the first crypto currency – bit coin [1].

On the basis of the first crypto currency appeared bit coin derivatives, the so – called "altcoins" - demand, the growth of their rates often exceeded the wildest expectations in terms of timing and level of capitalization. The appearance of altcoins is associated with the further development of the sphere of application of crypto currencies and improvement of their characteristics. To date, the prospects for further development of critobulus remains uncertain, although all the experts and professionals, public authorities it is clear, without regulation it is impossible to do in the future [2].

To understand the prospects of certain altcoins, it is necessary to study the reasons and factors that affect the dynamics of the crypto currency rate, how many coins of this altcoins, the growth of capitalization, the possibility of mining, the actions and intentions of national regulators, cooperation with leading exchanges, transnational corporations in the digital sphere. Along with that, you should explore other factors, the properties of each specific Aldona determining its opportunities [3].

**Methodology** – Today, there are many crypto currencies in the world and the emergence of new types of them does not make you wait. According to our estimates, the state regulation will help to bring order and consistency in the development of critobulus. The issue of new coins is growing, only in 30 days of the beginning of 2018 there were about 110 coins, any of which can become a new promising crypto currency for investment [4].

Consider the most well-known and used by traders, investors on the world's exchanges of types of crypto currencies, evaluate their prospects. The main and the first crypto currency in the world is bit coin,

which reached the peak of its capitalization by the end of 2017. In 2017, indeed, the capitalization of bit coin has increased more than 10 times, and in some cases, the growth of altcoins and tokens has increased during 2017 by 100-200 times or more. However, the correction of the bit coin exchange rate to a long-term reduction since the end of 2017 and during 2018 (when one bit coin was equal to almost \$ 20,000, then reached \$ 3,500) clearly showed that the growth potential of the bit coin exchange rate and capitalization level cannot be unlimited in light of the revealed disadvantages of this currency, such as scaling problems, bulkiness of the transaction and the emergence of alternative altcoins with improved characteristics.

Investment opportunities of the first crypto currency-bit coin remain promising, but the lack of regulation by the state creates high volatility in the markets. To expand the application areas, it is necessary to solve problems that limit the volume and scaling, low bandwidth, high cost of transactions, which, in General, narrow the prospects for the use of bit coin. Bit coin is actively used as a venture capital asset, where its share in the market structure remains high. Further prospects for the growth of crypto currencies are associated with the development of block chain technology, it is difficult to resist competition to decentralized applications [5].

The main requirements for crypto currencies to investments. In the analysis of altcoins and tokens for long-term investments are considered the most promising such currencies, which can have the following features and characteristics:

1. Competent highly qualified management with experience and high rating in the field of crypto currency technology and knowledge [6].

2. Application of technical solutions of innovative nature and new specific functions in the basis of crypto currency functioning (possibilities of mining of this currency, available secure transaction mechanism at price and cost, availability of open source code, etc.) [7].

3. The presence of a sufficiently high level of capitalization of the currency to maintain the level of pricing on crypto currency exchanges.

4. Availability of resources and opportunities for events for altcoins marketing promotion;

5. As noted in article [4], "the presence of an open source code of the coin also increases confidence, and the possibility of mining altcoins reduces the likelihood of manipulations with the rate, which are not uncommon in the case of tokens that have a single Issuer in the form of a token developer."

6. It is necessary to monitor on a constant basis the rate of the chosen crypto currency to assess the possibility of speculative or objectively long-term interest of investors working in the short or long-term time range [8].

**Results of a research** – Many altcoins meet all these requirements. The main criteria for the analysis of crypto currency development trends are anonymity, capitalization, and volatility.

Market capitalization is the total value of all electronic virtual currencies on electronic exchanges. The definition of crypto currency capitalization is no different from any other asset (e.g. company stock). The higher the value of capitalization of a particular currency, thus it is of potential interest to investors. Large investors and investment funds prefer to invest in a currency that has a large capitalization value, since investments in small crypto-coins are not profitable [9, c. 80-86].

Table 1– Market capitalization 10 largest crypto currency in 2017

№	The name of the coin	The cost, in US dollars	Capitalization, billion US dollars	Growth in 2017 capitalization, in %
1	Bitcoin (BTC)	15 405.50	257, 77	2000
2	Ethereum (ETH)	453,75	43,67	9000
3	Bitcoin Cash ( BCH)	1329,97	22,4	-
4	IOTA (IOTA)	4,32	12,01	3000
5	Ripple (XRP)	0,24	9,21	37000
6	Litecoin(LTC)	152,2	8,26	5000
7	Dash ( DASH)	698,85	5,41	5000
8	Monero (XMR)	246,64	3,81	2500
9	Bitcoin Gold	223,62	3,73	-
10	NEM (NEM)	0,404	3,64	30000

Note – compiled by authors according to the source [4] and [10]

Based on the data of open media publications, we have analyzed the TOP 10 most capitalized crypto currencies, which will reveal the patterns and trends of their development. Table 1 presents the information of the ten most capitalized crypto currencies, for each of which capitalization, cost, dynamics are indicated. The data are taken as of 2017.

Let's consider the characteristics of the main crypto currencies that received the best results of capitalization in early 2018:

1. Bit coin (BTC) is the world's first digital currency, the pioneer of the crypto currency market. It has a basic block chain. Bit coin is widely used as a common means of payment, has an open source code, has become the basis for many subsequent projects in the crypto currency market. Bit coin remains the most promising option, though it has some significant shortcomings – the limitations of emissions, the complexity of the transaction and high cost. Today, bit coin mining is an extremely resource-intensive process, but remains the leader in terms of capitalization. Its share in the total cost of crypto currency capital is only about a third of the total capitalization (34.67%) [4.11].

2. Ethereum (ETH). During the development of this crypto currency, ETH modified the block chain technology with the help of smart contracts, which allowed using the capabilities of the crypto currency not only as a speculative financial instrument, but also as a technological innovation. The coin immediately attracted such giants of the financial and IT market as Sberbank, Microsoft, IBM and others, and therefore long-term investments in this project still look like a reasonable solution. Its capitalization grew to \$ 100 billion. Technical progress made thanks to the efforts of developers in recent months has contributed to the growth of ETH, as well as the expansion of the market for trading with this coin.

3. Bit coin Cash (BCH) was created in the development of the bit coin line by taking into account and eliminating the identified shortcomings. Its capitalization became high when its rate rose several times and firmly entrenched in the price above \$ 1000. As a result, altcoins BCH entered the top three most capitalized currencies [12, c. 94-96].

4. YOTA. The growth of iota capitalization in recent months indicates that this coin has the highest prospects along with giants like Bit coin or Ethereum. The currency is aimed at creating a tool for reliable anonymous transactions, the creators of IOTA see the key to the development of the crypto economy in the Internet of things and master its inherent technologies. Micropayments for Internet transactions.

5. The token Ripple (XRP). The main goal of this project is to create a full-fledged digital monetary system with maximum security of transactions. Protocol for international transactions in different systems. This crypto currency has caught the attention of major players in the classic financial market, among which are such giants as UniCredit, UBS, Western Union and others. Rippl Protocol has been used in the work of banks and payment systems, and therefore the future of this crypto currency looks promising. This crypto currency is relevant for the beginning of the study of the crypto economy by its example, as it has a large package of interesting technologies important for the development of the industry as a whole. In the Wake of growing interest in its rate increased so actively that XRP for some time even held a leading position among altcoins.

6. Litecoin (LTC) was developed as a result of the fork of bit coin, taking into account a number of shortcomings of the classic bit coin, which allowed to increase the currency issue to 84 million coins and increased the transaction speed by 2.5 times. Litecoin as a fast analogue of bit coin under SegWit, is mined in a similar way, anonymous, its emission is limited, and transactions are not subject to cancellation. To date, the mining of this coin is more profitable than bit coin. During the correction period, LTC capitalization fell by almost half.

7. Dash. This crypto currency has a more reliable system of protection of personal data of the owner of the coin than implemented in Bit coin. The currency has several specific features in comparison with financial instruments: 1) its production is not demanding on energy resources; 2) not one, but a group of algorithms is used. Currency for instant transactions on the Internet, sent to the wallets of recipients after splitting transactions in the service Private Send. The stable growth of Dash makes it one of the most attractive crypto currencies on the altcoins market.

8. Monero (XMR). An independent crypto currency. The main purpose of the creation is to ensure the maximum possible anonymity of transactions, due to the CryptoNote Protocol, ring signatures using one-time keys when making money transactions. Investors appreciate the potential of this currency.

9. The NEM token, designed to make innovative changes in the sphere of Bank transfers, is another coin included in the top ten. Currency Coin from Japan, has an original open source code and a number of technological advantages that are not available to more eminent colleagues. Payments and p2p transactions.

10. Stellar, a token that has some common features with the RIPL, holds very close to NEM and has a slightly lower total value of \$ 8.629 billion.

11. The EOS token is another token designed to scale decentralized sites and services more efficiently. The capitalization of the token exceeds \$ 8 billion. and brings it closer to other coins, which took a higher position in the ranking.

12. The NEO token, which showed particularly good growth rates last year, despite its low starting positions, finally entered the TOP of the most capitalized coins. His achievement is almost capitalization.

13. Cardano token (ADA), through the use of smart contract technology, is able to increase the internal efficiency of the crypto currency economy. Cardano demonstrated an impressive growth of market capitalization: in 2017, the market capitalization of this token is equal to almost 15 billion US dollars [4,10,11].

During 2018, the total number of crypto currencies rose to 1910, according to Coinmarketcap. The opposite trend was observed to reduce capitalization for almost a year, preceding the rapid growth of crypto currencies by the beginning of 2018. Compared to December 2017, when the maximum growth in total capitalization reached \$ 600 billion, by December 26, 2018, the total capitalization fell to \$ 127.5 billion. Compared to the previous year, the capitalization of such currencies as NEO, EOS, NEM, IOTA, BTH decreased from the TOP 10, but the top ten included new currencies like USDT, Tronit (TRX) [13].

Thus, there are natural changes in the dynamics of capitalization and popularity of crypto currencies. At the beginning of 2019, respectively, many of the TOP 10 capitalized currencies lost weight, we present data on capitalization for 2017-2018 in Table 2.

Table 2 – Dynamics of capitalization of the 10 largest crypto currencies as of December 27, 2018.

№	The name of the coin	The cost, in US dollars	Capitalization, in billion dollars. USA on 27.12.2018	Capitalization on the 27. 12. 2017, in billions of dollars USA	Dynamics of changes, minus, plus
1	Bitcoin (BTC)	3857,25	67,34	269,0	- 3,99 times
2	Ripple (XRP)	0,37	36,73	47,0	- 1,28 times
3	Ethereum (ETH)	142,38	14,83	74,0	- 4,99 times
4	Steller (XLM)	0,11	2,19	15	- 6,85 times
5	EOS	2,71	2,78	-	Not available
6	Litecoin (LTC)	32,11	1,92	15	- 7,8 times
7	USDT	1,01	1,88	-	
8	Cardano (ADA)	0,04	1,09	10	- 9,17 times
9	Manero (XMR)	48,87	0,82	6	- 7,32 times
10	Tronit (TRX)	0,02	1,34	-	
11	DASH	82,62	0,71	9	- 12,68 times

Note – compiled by authors according to the source [14]

Crypto currency problems. A digital currency, hardly appeared to be unclaimed, to assess their capitalization is almost impossible. In modern conditions of unregulated crypto currency processes at the state level, but at the same time, when trading crypto-currency exchanges are active, it is necessary to pay special attention to the measures taken by States that have more influence on this financial market, such as Japan, South Korea, China, the United States and others [15].

It is important to analyze the measures taken by these States in the field of regulation of crypto currencies, to monitor their actions for their impact on the exchange rate and capitalization of a particular crypto currency. For example, Japan has been consistently implementing measures to embed crypto currency relations in the financial system of the country. Measures are being taken to regulate and license the activities of companies in the field of crypto currency economy. Therefore, investors should pay attention to projects with Japanese participation, and not only pay attention to the world-recognized platforms Ethereum and Bitcoin, Ripple and Stellar [16].

One of the States that offered its vision on the regulation of the crypto market is South Korea. South Korea sees state regulation in the adoption of strict measures to limit the issuance of crypto currencies, their regulation.

China generally opposes the development of crypto-currency projects, it is necessary to pay special attention to projects with Chinese participation. Chairman of the Chinese Central Bank Mr. Zhou Xiaochuan at a press conference in Beijing on the sidelines of the session of the national people's Congress (NPC) on March 9, 2018 said that "Bitcoin and other digital currencies enter the market too quickly, and they are not reliable enough. Their too rapid spread can have a negative impact on consumers. In addition, they can lead to the most unpredictable consequences in the financial market... Virtual money like bitcoin is not currently recognized by the People's Bank of China and the banking system as a means of payment like cash." According to Mr. Zhou Xiaochuan: China is developing a digital currency for electronic payments, which will be based on existing Chinese banknotes and coins, without changing the position of the Central Bank and commercial banks in the financial system. The official digital currency in China "should provide uninterrupted monetary and financial stability and at the same time protect consumers... We do not want to create products for speculation ... the Illusion of getting rich overnight is not good" [17].

In the us, in the crypto-currency sector, there is a General unregulation of the industry. Until now, the fundamental issues of regulation have not been resolved. The launch of the crypto currency platform for institutional investors Bakkt in January 2019 is delayed, did not receive the necessary permits from the commodity futures trading Commission (CFTC) . A feature of the launch of this platform is the availability of permission to use its own infrastructure for storing bit coin assets of its customers. The irregularity of the situation for resolution to keep the block chain assets disrupted the timing of the launch [18].

Some of the larger trading exchanges, starting in January 2018 and has launched futures trading of crypto currencies, but at the same time, the authorities are taking tough measures against some of the crypto currency exchanges that have committed tax violations.

News reports have a negative impact on bit coin and other altcoins. For example, Google, Facebook, Twitter refused to publish bit coin in advertising on their fields, which led to a sharp further drop in the rates of all crypto currencies. Bitcoin fell only in the last day in mid-March by 7% after Google, Twitter Facebook refused to advertise bit coin. About it reports a source Cointelegraph. Accordingly, the fall in the bit coin exchange rate affected the fall of the leading altcoins [19].

Risks of cryptocurrency. The cryptocurrency environment, due to its specific functioning (anonymity, decentralized nature of money issue), carries great financial risks for potential investors. The main of them are fraud, theft from accounts of cryptocurrency exchanges, of robbery of individuals, of bankruptcy, as exchanges, and certain cryptocurrencies. However, the characteristic properties of current cryptocurrencies, such as volatility and speculative demand, are risky for investors. For example, only "for the first two months in 2018 it has already been recorded 22 facts of fraud, during this period of time the attackers stole about \$ 1.3 billion, according to the well-known portal Bitcoin.com". Experts believe that if the crypto-currency community does not provide transparency and a high level of security, by the end of the year thieves will steal \$3.25 billion according to forecasts. No less serious financial risks are issues related to the primary placement of crypto-coins. According to the data, of all the projects of the primary placement of coins last year raised \$5.2 billion, and only 48% of them were successful [20].

No less great risks are the lack of General principles of regulation by States, which create uncertainty and manipulation from the outside, which negatively affected the development of the crypto-currency market during this period.

**Conclusions** - 1. It should be recognized that a significant gap in the capitalization of the main currency - bit coin BTC, also altcoins - Ethereum etc, ripple XRP and new coins indicates that the first of the noted ones still have a higher attractiveness for potential investors.

2. The long-term correction for the depreciation of the majority of crypto currencies, starting from the second half of January 2018 to the present time, is due to the fact that the crypto currency market was overbought, strongly depends on speculation, General principles of regulation have not been developed. Accordingly, this trend will not end soon.

3. The volatility of crypto currency rates is often associated with any negative news (news from developed countries in this regard, such as South Korea, China, the United States on the regulation of digital currencies).

4. It should be noted the direct dependence of the most capitalized altcoins on changes in the bit coin exchange rate in the conditions of the General correction, its low volatility. In practical terms, a powerful low-level currency correction becomes necessary for the future growth of prices for crypto currencies.

5. The significant growth and subsequent correction of bit coin to decline showed well that the growth potential of bit coin is on the verge of exhaustion, until the problems of scaling, the transaction mechanism, the high cost of withdrawal of Fiat money will not be solved in the near future.

6. The emergence of more advanced characteristics of new altcoins creates prerequisites for their further growth, it becomes relevant in subsequent years, investments in the most promising altcoins, which will take into account the shortcomings of the main crypto currency – bit coin, improved characteristics of use.

Thus, new financial elements such as bit coin and altcoins create new economic relations in the financial spheres of States. Potential participants of the crypto-currency markets should accumulate experience, analyze the state of certain crypto-currencies, introduce new altcoins, be aware of the main news of the crypto-economy of various States and on this basis each participant should develop his own strategy for participation in the crypto-economy.

The state bodies of the Republic of Kazakhstan should not just decide on the adoption of the state policy of this new sector of the financial sector, it is necessary to take concrete measures to prepare the General principles of state regulation based on international experience. The need to address regulatory issues directly affects the development of civilized methods of development of the crypto currency market in the country and its integration into the global digital economy, the use of digital currencies, potential investors, taking into account the strategy of choosing crypto currency assets, risk assessment.

The development of the digital economy, of which the crypto – currency sphere is a part, is an objective factor, it does not depend on subjectivity, accordingly, it is necessary to develop in all directions of new technologies in this sphere, so as not to be among the lagging countries. The digital economy cannot exist without the digital currency, it must be understood, first of all, by the state bodies. Digital currency brings new content to the essence and functions of money, has a great prospect of development in a new technological dimension.

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#### **ЗАМАНАУИ ЭКОНОМИКАДАҒЫ КРИПТОВАЛЮТА**

**Аннотация.** Мақалада криптовалютаның экономикалық мазмұны, капиталдандыру сұрақтары мен инвестициялау үшін негізгі талаптар зерттелді. Автормен 2017 және 2018 жылдардағы 10 ірі криптовалюталардың капиталдандыру динамикасының салыстырмалы-салғастырмалы талдауы жүргізілді. Криптовалюталардың мәселелері, оларды енгізу мен заманауи экономикада қолдану күрделілігі айқындалып, криптовалюталық нарықтың даму барысына әсері бар тәуекелдер анықталды. Жүргізілген талдау жұмысының негізінде сәйкес қорытындылар жасалынды. Сондай-ақ, шет елдердегі криптовалюталық нарықтың даму әдістерін зерттеу мемлекеттік реттеудің жалпы қағидаларын әзірлеу сұрақтарындағы ең тиімді шешімдермен байланысты олардың тәжірибесін қолдану мүмкіндігі үшін қажет екенін атап өту керек.

**Түйін сөздер:** цифрлық экономика, капиталдандыру, криптовалюта, биткоин, қаржылық элементтер, блокчейн технологиясы, транзакция.

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#### **КРИПТОВАЛЮТА В СОВРЕМЕННОЙ ЭКОНОМИКЕ**

**Аннотация.** В статье исследуются экономическое содержание криптовалюты, вопросы капитализации и основные требования для инвестирования. Автором проведен сравнительно-сопоставительный анализ

динамики капитализации 10 крупнейших криптовалют за 2017 и 2018 годы. Выявлены проблемы криптовалют, сложности их внедрения и использования в современной экономике, определены риски, имеющие влияние на ход развития криптовалютного рынка. На основании проведенного анализа сделаны соответствующие выводы. Следует отметить, что изучение методов развития криптовалютного рынка в зарубежных странах необходимо для возможного использования их опыта с наиболее эффективными решениями в вопросах подготовки общих принципов государственного регулирования.

**Ключевые слова:** цифровая экономика, капитализация, криптовалюта, биткоин, финансовые элементы, технология блокчейн, транзакция.

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**MODERN ASPECTS OF DEVELOPMENT  
OF BUDGET POLICY OF KAZAKHSTAN**

**Abstract.** The scientific article offers an analysis of the modern budget policy of Kazakhstan and the selection of the main directions of its development. The author assessed the effectiveness of the budget policy of the Republic of Kazakhstan in the field of income, which allowed us to distinguish 2 groups of problems of development of the budget policy of Kazakhstan - the problems of implementing the budget based on results and problems of budget planning and forecasting. To solve these problems, recommendations were made to address the problems of fiscal policy in Kazakhstan.

**Keywords:** fiscal policy, state budget, revenues, taxes, transfers.

**Introduction.** In the conditions of a market economy, fiscal policy is one of the main instruments for regulating economic processes. Without an effective fiscal policy, it is impossible to overcome the consequences of the financial crisis, to ensure the implementation of the country's long-term development programs, as well as the growth of the population's well-being. Modern fiscal policy should effectively implement the redistribution of the results of economic growth and the use of national wealth, thereby creating incentives for the further sustainable development of society [1].

In his Message to the People of Kazakhstan "Strategy" Kazakhstan - 2050 ": New political course of the established state" President of the Republic of Kazakhstan N.A. Nazarbayev one of the important priorities of the modernization of macroeconomic policies called the improvement of budget policy:

"... even the most modern facilities become a burden for the budget if they require maintenance costs, but do not generate income and do not solve the problems of citizens of the country" [2].

Forming a fundamentally new system of state planning allows you to form a budget based on the goals and objectives of public policy and to allocate budgetary resources among administrators of budget programs, taking into account the achievement of specific results in accordance with the strategic goals, objectives and priorities. These issues are the focus of attention of many domestic and foreign scientists. The purpose of this article is to analyze and identify the main problems in the functioning of the budget process in the public administration of the Republic of Kazakhstan and to develop proposals for its improvement [3].

Achieving this goal is possible only through a centralized, based on the subordination of the interests of individual regions or areas to the interests of the state, the distribution of income and expenses between the levels of budgets. And there is such a mechanism for regulating intergovernmental relations: the types of revenues that are credited to the republican and local budgets, as well as expenses incurred in all areas of public services, are legally defined [4].

**Methods.** When writing the article, general scientific and special methods were used, such as: system analysis method; content analysis method; comparative analysis method; method of analysis and synthesis; method of systematic approach.

**Results.** Macroeconomic stability in Kazakhstan in 2000–2013 had a stimulating effect on economic development. This was the main factor in increasing the production of goods and services, and, consequently, the growth of revenues to the state budget and the National Fund. However, in 2014-2015, there was a deterioration of external factors for the development of the economy of Kazakhstan. There



was a general slowdown in economic growth in the world and an increase in geopolitical instability. The accumulated effect of external shocks began to influence not only the private sector, but also the revenue side of the state budget of the Republic of Kazakhstan [5]. In the structure of state budget revenues, the largest share is tax revenues.

Table 1 - Dynamics of revenues of the state budget of the Republic of Kazakhstan for 2015-2017, million tenge

Name	2015 г.	2016 г.	2017 г.	Changes 2017/ 2015	
				сумма	%
Total revenues	7 634 805	9 308 485	11 567 691	3 932 886	51,5
Tax revenues	4 883 913	6 023 263	6 810 851	1 926 938	39,5
Non-tax receipts	224 767	369 424	273 872	49 105	21,8
Proceeds from the sale of fixed capital	69 709	60 225	68 650	-1 059	-1,5
Receipts transfers	2 456 417	2 855 574	4 414 317	1 957 900	79,7

Source: Ministry of Finance of the Republic of Kazakhstan

As can be seen from the data of table 1, the state budget revenues in 2017 amounted to 11,567.7 billion tenge, which is 51.5% more than in 2015. The amount of tax revenues is 58.9% of all revenues of the state budget, in 2017 they are observed to increase by almost 1 926.9 billion tenge, or 39.5%, while in 2016 they increased by 1 139.4 billion tenge or by 23.3% compared with 2015. A significant increase in tax revenues in 2017 was due to the high rates of economic development in Kazakhstan. Consider the dynamics and structure of tax revenues to the state budget of the Republic of Kazakhstan in table 2.

Table 2 - Dynamics of receipt of taxes and payments to the state budget of the Republic of Kazakhstan for 2015-2017, million tenge

Name	2015 г.	2016 г.	2017 г.	Changes за 2015-2017 гг.	
				сумма	%
Tax revenues, total, including:	4 883 913	6 023 263	6 810 851	1 926 938	39,5
CIT	1 224 645	1 437 365	1 538 785	314 140	25,7
IIT	598 807	691 778	750 212	151 405	25,3
social tax	464 674	530 440	576 607	111 933	24,1
VAT	944 438	1 495 682	1 664 699	720 261	76,3
excise taxes	161 068	205 231	255 994	94 926	58,9
other tax revenues	1 490 281	1 662 767	2 024 554	534 273	35,9

Source: Ministry of Finance of the Republic of Kazakhstan

As can be seen from Table 2, tax revenues increase in 2017 compared to 2016, which is mainly due to the increase in the gross value added growth rate due to an improved forecast for world prices for oil, metals and solid minerals, and a number of other factors [6]. The overall dynamics of the growth of tax revenues to the state budget of the Republic of Kazakhstan can be seen in Figure 1.

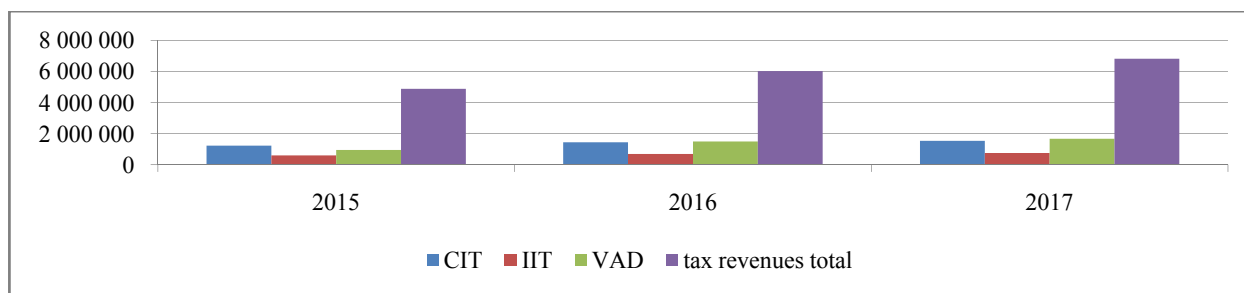


Figure 1 - Dynamics of tax revenues to the state budget of the Republic of Kazakhstan for 2015-2017, million tenge  
Source: Ministry of Finance of the Republic of Kazakhstan

The increase in tax revenues of the following taxes had a significant impact on the increase in tax revenues to the state budget of the Republic of Kazakhstan in 2017 compared to 2015:

- CIT revenues increased by 324.1 billion tenge or 25.7%,
- revenues of personal income tax increased by 151.4 billion tenge or by 25.3%,
- social tax revenues increased by 111.9 billion tenge or 24.1%.

A very noticeable increase occurred in VAT receipts of 720.3 billion tenge. in 2017 compared with 2015 or by 76.3%. The growth in VAT is mainly due to the growth in VAT receipts on goods imported into the territory of Kazakhstan due to an increase in the volume of imports, mainly due to the decline in economic indicators in the Russian Federation.

Let us now consider in more detail the structure of tax revenues to the state budget of the Republic of Kazakhstan according to Figure 2.

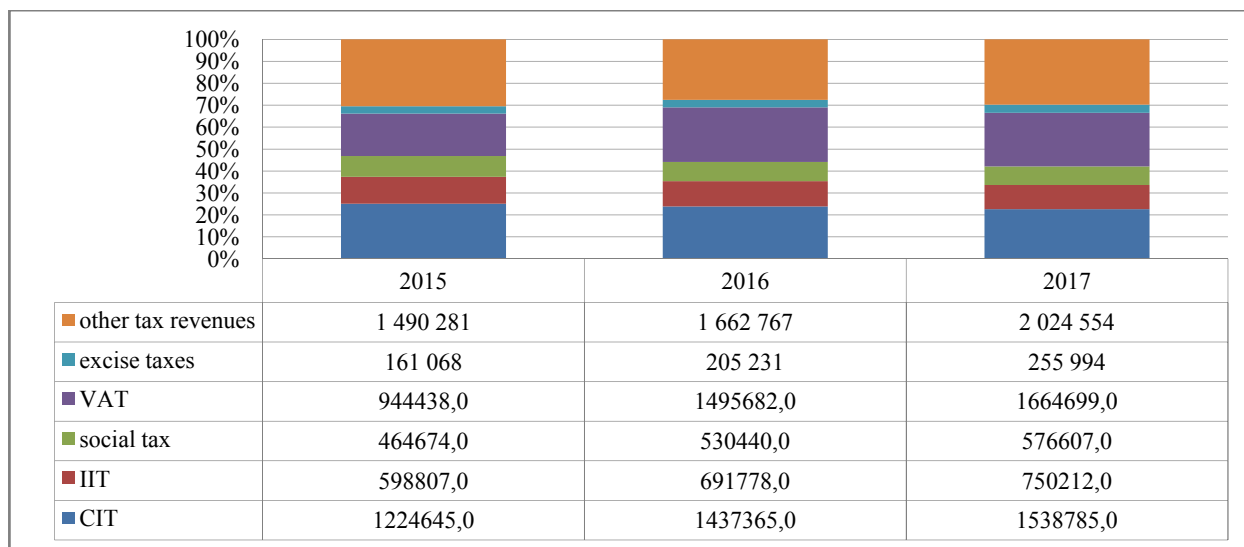


Figure 2 - Structure of tax revenues to the state budget in 2015-2017,%

Source: Ministry of Finance of the Republic of Kazakhstan

From the data of Figure 2, it can be seen that in 2017 the main share of budget revenues is VAT - 24.4%, followed by CIT - 22.5%, and the PIT - 11%, social tax - 8.5%. In addition, the overall structure of tax revenues has changed significantly over the past five years.

Thus, the share of corporate income tax to total tax revenues in 2015 was 25.1%, in subsequent years its share in the structure of tax revenues was noticeably reduced to 23.9% in 2016 and to 22.6% in 2017 [7].

The share in tax revenues of individual income tax to general tax revenues is also reduced. So, if in 2015 it was 12.3%, in 2016 it decreased to 11.5% and in 2017 to 11%. The share in social tax tax receipts to total tax revenues in 2015 was 9.5%, in 2016 - 8.8% and in 2017 - 8.5%. The share of value added tax in 2015 was 19.3%, in 2016 - 24.8% and in 2017 - 24.4%. The share of excise taxes to total tax revenues in 2015 was 3.3%, in 2016 it was 3.4% and in 2017 - 3.8%.

Thus, the analysis of the structure of revenues shows an increase in the share of value added tax and the stability of excise taxes. Changes in the share of corporate income tax and individual income tax are due to macroeconomic factors [8].

In general, over the past five years, the tax authorities of the Republic of Kazakhstan have done a lot of work to strengthen the budget revenues. Amendments have been made to the Tax Code for the preservation of a number of rates, incentive measures are provided for, and an excise policy on tobacco has been determined. An export customs duty on oil was introduced, a mechanism for distributing import duties of the Customs Union was developed and successfully implemented, and the discipline of paying taxes and customs duties was generally strengthened [9]. Consider the following sources of income of the state budget of the Republic of Kazakhstan - proceeds from the sale of fixed capital and receipts of transfers [10-15].

Dynamics of proceeds from the sale of fixed capital and receipts of transfers to the state budget of the Republic of Kazakhstan in 2010-2016 shown in table 3.

Table 3 - Dynamics of receipts from the sale of fixed capital and receipts of transfers to the state budget of the Republic of Kazakhstan in 2015-2017, million tenge

Name	2015	2016	2017	Changes 2017/2015	
				сумма	%
I. INCOME	7 634 805	9 308 485	11 567 691	3 932 886	51,5
Proceeds from the sale of fixed capital	69 709	60 225	68 650	-1 059	-1,5
Receipts transfers	2 456 417	2 855 574	4 414 317	1 957 900	79,7

Source: Ministry of Finance of the Republic of Kazakhstan

Proceeds from the sale of fixed capital at the end of 2017 amounted to 68.7 billion tenge, which is 1.1 billion tenge less than the 2015 figure. Proceeds from the sale of fixed capital occupy an insignificant share in the state budget revenues (0.59% at the end of 2017). For transfers, the plan is 100% complete. During the reporting period, in order to finance budget development programs, a guaranteed transfer to the republican budget from the National Fund of the Republic of Kazakhstan was raised in the amount of KZT4,414 billion.

Along with the proceeds from the sale of fixed capital, the amounts of official transfers are reflected in revenues at all levels of the budget system. The total amount of transfers increased in the analyzed period from 2,456.4 billion tenge in 2015 to 4,414.3 billion tenge in 2017. The increase was due to an increase in the size of the guaranteed transfer from the National Fund due to the appreciation of the US dollar. In general, it can be noted that in 2017 the revenue part of the state budget of the Republic of Kazakhstan was maximum for the entire period under consideration (2015-2017).

The effectiveness of the regional budget policy is largely predetermined by the regional policy, which is developed taking into account the state programs and the development features of certain regions and cities of Kazakhstan.

There is also a trend of a relative decline in the share of own revenues of local budgets (without official transfers from a higher budget, formed on the basis of the tax payment distribution standard) (Figure 3).

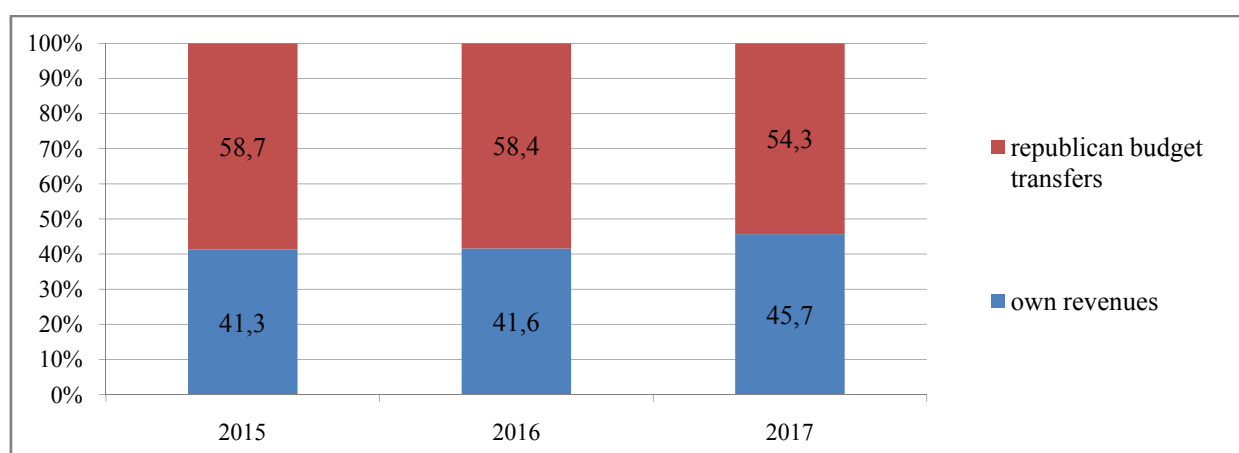


Figure 3 - Shares of own revenues and transfers from the republican budget in local budget revenues, in%

From Figure 5 it is clear that since 2015, the share of own revenues of local budgets has grown by 4.4%. The weakness of own sources of replenishment of local budget revenues determines the high degree of dependence of the majority of regions on the republican budget. In 2017, the share of transfers from the republican budget amounted to 54.3% of the total income of local budgets. Subventions from the republican budget in 2017 increased compared to the previous period by 45,447 million tenge or 5.3%.

Thus, today the main problem of local budgets is the lack of own financial assets. The current method of calculating transfers of a general nature does not allow regions to increase their own resources. The application of the principle in which revenues exceeding the projected amount of local budget expenditures are withdrawn to the republican budget has a negative effect - restraining the initiative of local authorities and reducing interest in building up their own taxable base and increasing tax collection [5].

To cover the costs associated with the implementation of the overall fiscal policy, it is necessary, accordingly, to increase cash flow to the state budget. In order to understand what incomes depend on, we will conduct a correlation analysis.

Based on the essence of the state budget revenues, we have taken a set of socio-economic variables:

U- state budget revenues;

X1 - GDP;

X2 - the average monthly nominal wage;

X3 - tax revenues.

To reveal the closeness of the relationship between variables, a correlation analysis was performed. The results of the analysis in table 5.

The matrix of the Cedokk scale correlation coefficients shows that the variables are multicollinear between themselves and it is necessary to switch to a new dimension - chain growth rates and again carry out correlation analysis. The obtained transformed data correspond to the law of normal distribution. Highly correlated with the value (+, - 0,7) are missing.

Table 4 - Correlation Matrix for Growth Rate

	Revenue growth rate	GDP growth rate	Growth rate Average monthly wage	Growth rate tax revenues
Revenue growth rate	1			
GDP growth rate	0,662057594	1		
Growth rate Average monthly wage	0,584858052	0,687871655	1	
Growth rate tax revenues	0,84586946	0,955863183	0,668704987	1
Calculated by the author				

According to the results of the correlation matrix, it can be seen that the highest income relationship is observed with a factor - tax revenues ( $r = 0.84$ ). This connection is explained by the fact that tax revenues are one of the main components of budget revenues. In turn, tax revenues correlate quite strongly with other factors: GDP ( $r = 0.95$ ) and average monthly wage ( $r = 0.66$ ).

Revenues have a moderate relationship with the GDP factor ( $r = 0.66$ ) and the average monthly wage ( $r = 0.58$ ). The relationship of income and average monthly wages can be explained by the fact that the higher the wages of the population, the more income they bring to the budget through paying taxes, buying goods and services, etc.

So, according to the initial data, a functional relationship exists between the state budget revenues and such factors as: the volume of GDP, the average monthly nominal wage and tax revenues to the budget. Checking the data for normal distribution revealed that the null hypothesis was rejected.

The coefficient of determination in the analysis is 93%, that is, 93% of changes in deposits are explained by variable signs, and 2% are unaccounted factors. The overall R-squared correlation coefficient is 0.97, indicating a close relationship between the resultant and factor signs.

Check the regression equation for adequacy:

1) Fisher's actual criterion is 60.63025, which exceeds the tabular value:  $F_{fact} > F_{tabl}$  (2.93);

2) Student's actual criterion exceeds the critical value, which indicates the significance of the model:

a)  $t_f = 7,034 > t_{\alpha} = 0,0001$ ;

б)  $t_f = 1,910 > t_{\alpha} = 0,0001$ ;

в)  $t_f = 9,745 > t_{\alpha} = 0,0001$

3) The Durbin – Votsan criterion is 2.15 above the critical (the critical value is 0.76):  $2.15 > 0.76$ , there is no autocorrelation.

4) Test on the normal distribution of deposits according to the criterion of Shapiro-Wilk:

a) state budget revenues = 0.774877, p-value 9.42973e-011;

b) GDP volume = 0.7715637, p-value 9.52496e-01;

c) the average monthly salary = 0.774905, p-value of 9.44679e-01;

d) tax receipts = 0.714441, p-value 2.26362e-012.

In all cases, the normal distribution of factors is confirmed, due to the fact that the Shapiro-Wilk criterion is larger than the p-value, the null hypothesis of the normal distribution is accepted.

Thus, the correlation – regression analysis revealed the factors that most affect the state budget revenues: GDP, average monthly wages and tax revenues. According to regression statistics, the significance of three factors was confirmed. According to the results of the analysis was the equation of multiple regression:

$$Y = 225 + 2,81X_1 + 0,563X_2 + 1,28X_3$$

Growth of X1 - GDP by 1%, ceteris paribus will lead to an increase in state budget revenues by 2.81% for 2010-2017. The growth of X2 - the average monthly nominal wage by 1%, ceteris paribus, caused a rise in state budget revenues by 0.563%. The growth of X3 - tax revenues by 1%, ceteris paribus, caused an increase in state budget revenues by 1.28%.

According to the results of the correlation and regression analysis, a forecast of the state budget revenues in the future for 3 years was made. The result of the forecast in table 5.

Table 5 - Forecast Values

Years	State budget revenues, thous. tenge
2018	8 654 242 152
2019	9 421 563 425
2020	10 254 863 479
Calculated by the author	

Based on the calculations, it can be concluded that the state should focus on improving the country's fiscal policy and focus its attention on a more efficient and rational use of public resources in general.

In the modern concept of the budget should be a reliable tool for the implementation of economic and social policies of the Government of the Republic of Kazakhstan. And the most important task at this stage is to ensure its transparency for all members of society. It is necessary to ensure that the state budget becomes a means of stabilizing public finances. It should be turned into a reliable support and guarantor for all beneficiaries defined by law.

At the same time, it is worth noting the shortcomings of budget planning in the conditions of global instability and “difficult to maintain” price increases, which led to the fact that in the reporting year there was no increase in social expenditures of the republican budget in real terms (in other words, a separate part of them was depreciated). Repeated budget adjustments have a negative impact on its planning and execution. In our opinion, with repeated adjustments and adjustments, such indicators as the minimum pension and the subsistence minimum should have been revised [16–19].

**Discussions.** Thus, we can conclude that the macroeconomic situation in the country as a whole had a positive impact on the execution of the state budget for 2017. The specified basic parameters of revenues and expenditures of the state budget are fulfilled. At the same time, separate reserves of increasing tax and non-tax revenues to the budget, as well as improving the efficiency of using budgetary funds were not used. The main problems of formation and execution of the state budget, in our opinion, are expressed in the shortfall in tax payments to the budget, depending on budget revenues from the commodity sector of the economy, the problems of intergovernmental relations [20].

The solution to the problems of fiscal policy in Kazakhstan is seen in the following areas:

- introduction of project management,
- improving the processes of obtaining complete and reliable information on a regular basis about the implementation of government tasks and the management of budget funds by various departments,
- definition and removal of duplicate functions and programs of state bodies,
- improving the system of state financial control,
- Compliance with legislation in the field of civil service reform and the fight against corruption [21].

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### ҚАЗАҚСТАННЫҢ БЮДЖЕТТІК САЯСАТЫНЫҢ ДАМУЫНЫҢ ҚАЗІРГІ АСПЕКТІЛЕРІ

**Аннотация.** Ғылыми мақалада Қазақстанның заманауи бюджет саясатын талдау және оны дамытудың негізгі бағыттарын таңдау қарастырылған. Автор Қазақстан Республикасының бюджеттік саясатының нәтижелілігіне баға берді, бұл Қазақстанның бюджет саясатын дамыту мәселелерінің 2 топтарын - бюджетті жоспарлау мен болжаудың нәтижесі мен міндеттеріне негізделген бюджетті іске асыру проблемаларын анықтауға мүмкіндік берді. Осы проблемаларды шешу үшін Қазақстандағы салық-бюджет саясатының мәселелерін шешу бойынша ұсынымдар жасалды.

**Түйін сөздер:** фискалдык саясат, мемлекеттік бюджет, кірістер, салықтар, трансферттер.

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### СОВРЕМЕННЫЕ АСПЕКТЫ РАЗВИТИЯ БЮДЖЕТНОЙ ПОЛИТИКИ КАЗАХСТАНА

**Аннотация.** В научной статье предлагается анализ современной бюджетной политики Казахстана и выбор основных направлений ее развития. Автором проведена оценка эффективности бюджетной политики Республики Казахстан в области доходов, что позволило выделить 2 группы проблем развития бюджетной политики Казахстана - проблемы реализации бюджета по результатам и проблемы бюджетного планирования и прогнозирования. Для решения этих проблем были даны рекомендации по решению проблем фискальной политики в Казахстане.

**Ключевые слова:** Фискальная политика, государственный бюджет, доходы, налоги, трансферты.

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**Zh. Smailova<sup>1</sup>, G. Taspenova<sup>2</sup>**<sup>1</sup>Ablai Khan Kazakh University of International Relations and World Languages;<sup>2</sup>Al-Farabi Kazakh National University, Republic of Kazakhstan**FEMALE ENTREPRENEURSHIP DEVELOPMENT TRENDS  
IN KAZAKHSTAN**

**Abstract.** Today, female entrepreneurship has a special structure of business motivation, which differs from the motivation of men. This gender difference allows it possible to consider female entrepreneurship as a special type of business activity. This article discusses the female and male business styles, it is noted that the female business model is characterized by a tendency to smooth out conflicts, the ability to see all the details at once and combine several activities.

There was revealed the gender motivation of women to run an entrepreneurial activity.

Modern development trend analysis of female entrepreneurship in Kazakhstan has been carried out and the main barriers influencing the development of female entrepreneurship in Kazakhstan have been highlighted as well. Recommendations for further improvement of women's entrepreneurship support systems in Kazakhstan are given.

**Keywords:** female entrepreneurship, small and medium entrepreneurship, gender aspect.

**Introduction**

In the context of the current radical reform of social relations in Kazakhstan, the role of women in society is changing dramatically, and their social functions are defined differently. Women are actively involved in various activities related to the needs of the market economy, including the business system

The gender aspect of modern market economic relations is particularly important due to the fact that women not only continue to be one of the decisive factors of social production as a whole, but also because today female entrepreneurship development creates opportunities for building the innovative potential of the modern economy of Kazakhstan.

In the modern economy, the share of female entrepreneurship is a dynamic part of small and medium enterprises. According to statistics, more than 25 percent of new business structures around the world are created by women. A quarter of all firms in France and the UK, a third of all German firms are run by women. This figure in Japan is 23%, in the US - 38%. [1]

As it is known, the physiological difference between men and women determines their specific motivation to carry out different types of activity in various spheres of life and human relations, including in the field of entrepreneurship.

There are different practice areas, where women succeed to a greater extent, achieve more significant success. For example, a "masculine" business is more than a "feminine" one. It is based on the stereotypes of the fighting to the finish, determination, risk taking, persistence, "iron" logic, responsibility, callousness, disregard of personal consumer interests in favor of entrepreneurial.

On the contrary, the "feminine" business is more emotional, communicative, it is characterized by a tendency to cooperate, discuss problems, accuracy, restraint and tact. Usually in the "feminine" business the altruistic principle is more represented, in the "masculine" business the egoistic beginning.

Special studies lead to the conclusion about the existence of "masculine" and "feminine" styles of conducting entrepreneurial business [2]. Gender features are in the basis of all styled differences.

### **Methods**

Researchers from Yale University had conducted a study that resulted in the conclusion that the male brain and the female brain function differently. For example, it was found that in women, when performing certain intellectual operations, both sides of the brain are activated whereas in men, only one left side brain. In addition, the functional connection between the brain hemispheres in women is more active than in men, which not only makes women's speech more fluent, but also enhances the integrative capabilities of the brain. The brain of the average man is organized in such a way that it is possible to focus on only one activity at a given point in time. Therefore, men often become narrow specialists of a high level. The women's brain is also adapted to the simultaneous management of several affairs [3].

Women have a wider panoramic vision than men, whereas men have narrowed vision. This contributes to the fact that women become more attentive when observing objects. This is manifested in the ability to notice the details of facial expressions, movements, clothes of a partner, as well as in tactical thinking. Men - in strategic thinking, that means in the orientation towards more global goals. In addition, the female brain is focused on the process, and the male - on the final result [4].

The business development assessment in Kazakhstan shows that over the past few years women have made a great contribution to the field of entrepreneurship in our country. However, it is noted that the personal qualities of each entrepreneur play a larger role than their belonging to a particular gender.

The increase in women's economic initiatives in Kazakhstan, their representation in a wide range of socio-economic development of small and medium enterprises, as well as from the point of employment is very important.

### **Mainpart**

According to the Global Entrepreneurship Monitoring (GEM), about 163 million women in 74 countries of the world started their business in 2017, while 111 million women have already managed their existing business. Such figures speak not only about the relevance of women's entrepreneurship issues, but also show the impact that women in business will have on the economic processes in the world [5].

Kazakhstan is the part of this global trend. At present, the share of women creating companies in the field of SME is more than 50%. At the same time there is even more women among individual entrepreneurs - 66%.

In absolute terms, it is 640.5 thousand SMEs. At the same time in such parts as Kostanay and Karaganda regions the share of SMEs managed by a woman reaches 48%. Separately, among all individual entrepreneurs, the share of women is exactly half (50%): out of 1,086.5 thousand individual entrepreneurs, i.e. 542.9 thousand are women. At the same time, the number of women entrepreneurs prevails over men in 8 regions and in the cities as Astana and Almaty.

It is noteworthy that the number of SMEs headed by women is growing faster than the total number of SMEs. If in 2011-2013 the total number of SMEs increased by 26% then the number of SMEs under the guidance of women increased by 28% [6].

The main and traditional types of activities for women entrepreneurs are:

- Education - 64% is the share of women in the total number of SMEs in the industry,
- Accommodation and food services - 64%,
- Household activities - 64%,
- Real estate transactions - 60%,
- Wholesale and retail trade - 58%,
- Health and social services - 52%.

It is important to note the contribution of SMEs under the direction of women in employment. According to the latest data, women in the SME sector provide 794.5 thousand jobs or 30% of all jobs in SMEs in Kazakhstan.

There is a huge potential for the development of women's entrepreneurship in Kazakhstan, an increase in the number of women entrepreneurs in medium and large businesses, as well as in the sector of innovation and production that is most important for us. This global phenomenon in economics cannot be ignored and much less so state that gender parity is not important in business.

There is no gender in business. These biases may carry a very substantial cost of the issue. According to McKinsey, if women can participate in business equally with men around the world, global GDP can



grow by \$ 28 billion by 2025. Women's contribution to our country's GDP is already 40%, and this figure can only grow with the increasing role of women in entrepreneurship.

Women have their own particular view of things, they look at the world differently (not better or worse), but just differently. Accordingly, their ideas and talents can give a strong impulse to innovation in the economy. We can notice that a woman usually goes into business in order to solve the problem which she faces in life. She lacks cosmetics - and she decides to bring her favorite brand to Kazakhstan, and tomorrow she can plan developing her own production. She cannot choose a diet cake for her child with allergies, and she has to study this question and create a company with hypoallergenic products. She cannot find a dress for her body and creates her own line of clothes for women "with forms". In this way the legendary Coco Chanel, Tori Birch, Elizabeth Arden, or Sarah Blakely began.

Women reinvest more than 90% of their income in their families and in the education of their children. Thus, investing in women's business creates a greater contribution to the development of society. By supporting one woman, we support hundreds. Women spend all money (tenge-national currency) they earn to maintain the family budget and buy a grocery basket, clothes, to pay for private kindergartens, schools, children's development courses, travel and travel, thereby supporting this private business.

Women's entrepreneurship can reduce poverty and unemployment in the country. The figures on the level of poverty are quite contradictory in Kazakhstan. Official statistics gave data about 5%, while the World Bank reports that almost 20% of people in the country live below the poverty line.

From the experience of the 90s, we know that women always take responsibility at a difficult time for their families. We cannot remain indifferent to the fact that our children can suffer without adequate nutrition and development. This maternal instinct can be the impetus for entrepreneurship. The more women come into business, starting with small trade and small business, the more families in Kazakhstan will be able to reach a decent standard of living.

Women's entrepreneurship, in contrast to the "male", performs to a large extent and significant socially significant functions. First, it is the development of women's business that helps to overcome the phenomenon of poverty and improve the well-being of the family. Secondly, women's business, due to the inherent forms of women's domestic behavior and recreation, is less prone to various negative forms of "burning life" (feast, sauna, etc.). Third, the areas of business activity of most women are directly related to improving the quality of life, with the creation of comfortable conditions for work and leisure. Finally, fourthly, women's entrepreneurship, according to the majority of entrepreneurs and managers interviewed, has undeniable advantages due to the fact that "women's" management technologies are more adapted to the current conditions of instability and uncertainty characteristic of Kazakhstan.

According to the data provided by the entrepreneurship development Fund "Damu", among business people who have used the options of a Single program of support and business development "Business road map-2020", about a third are women. There have been subsidized 3432 projects, which are being implemented by 2,621 private "women's" enterprises on January 1, 2018. In total, the fund issued subsidies for 11,186 projects implemented by 7,919 entrepreneurs on above specified date. Another instrument — the guarantee of "Damu" reported the following statistics. The Fund issued 3 662 guarantees for a total amount of 56 163 million tenge (total amount of supported loans — 129 915 million tenge). Among the projects 1,271 - projects of women entrepreneurs, its share in the total number of who have benefited from the guarantee is 34.7%.

As part of the fund programs for conditional placement of funds, financial support in the amount of more than 1,670.90 billion tenge was received by 35,530 private entrepreneurs. Among them 20 175 are businesswomen. Thus, the number of women in this statistics who received financial support is 57%.

Experts of the Fund "Damu" noticed that most often women open studios, beauty salons, shops. Also "typically female" areas of entrepreneurial interest are health, nutrition and tourism.

The preferences are as follows. First of all, it is wholesale and retail trade - 940 women who opened a business in this area received the support of the fund. In second place is the manufacturing industry - 859 businesswomen working in this area are our customers. In third place is transport and warehousing, 587 women contacted us from this industry" reported in detailed statistics in the fund.

In terms of the scale of business, women entrepreneurs most often open small enterprises (3036), in second place in preferences - medium business (790), microbusiness - in the third (447), the smallest number of large enterprises opened by women (70). These are companies from the list of the clients of Damu.

In the practice of the fund, the most active entrepreneurs were in East Kazakhstan, Zhambyl and Aktobe regions. The average amount for which business women take out a loan is 142.8 million tenge [8].

To provide financial support, Damu Entrepreneurship Development Fund JSC (hereinafter referred to as Damu Fund) has been implementing the Program of conditional allocation of funds in second-tier banks for the subsequent micro crediting of female entrepreneurship, which is developed in accordance with the instructions of the President of the Republic of Kazakhstan N. Nazarbayev., This instruction was mentioned at the V Women's Forum Kazakhstan March 5, 2009. During the implementation of this program, 1,469 entrepreneurs received loans in total about KZT 10,662.4 million.

In addition, since the end of 2011, the Fund "Damu" has been implementing a program of financing SMEs through a loan from the Asian Development Bank, in which one of the target indicators is to maintain the financing of women entrepreneurs at the level of at least 24% of the total number of loans. On 01.01.2015, the partner banks financed 956 borrowers, of which 269 borrowers (28.1%) are women entrepreneurs.

In general, over the last 7 years, 5,203 projects of women entrepreneurs have been funded through all the programs of the Damu Fund through the second-tier banks.

Within the framework of the "Business Roadmap 2020" program, a subsidy to the rate of interest rate receives 1,103 projects of women entrepreneurs (23% of the total number of projects). Under the guarantee of the Damu Fund, 239 loans were issued for entrepreneurial purposes to women (34%).

As part of the work to strengthen the entrepreneurial potential of the state, a complex of training and consulting programs is being implemented. This work includes the project "Business Advisor" (a two-day express course in basics). The total number of students of the course was 71,297 people (01/01/2015) among them 36,303 women (51%). Another important educational project is the "School of a Young Entrepreneur" (a two-week educational program). There have been trained 2,109 people since the project began among which 946 women (45%).

Existing entrepreneurs who work in priority sectors of the economy have the opportunity to improve their qualifications by studying at the Nazarbayev University, where well-known professors from leading universities of the world are invited as lecturers. 1263 people took part in this project, including 499 women (40%).

There were 2253 entrepreneurs including 924 women (41%) took part in the "Business Connections" project (complex of business training and internships at foreign enterprises).

There has been created a multi-level infrastructure of entrepreneurship supporting to provide operational consulting support to entrepreneurs under the auspices of the "Business Road Map 2020" program.

At the regional level – business service centers; at the level of the monotown and district centers – business support centers; at the level of villages and towns, countryside – mobile entrepreneurship support centers. Today, more than 131 thousand people have applied to these centers, 44% of them are women.

The Damu Foundation also provides support to entrepreneurs with disabilities under the Damu-Komek Program. There was provided support to 1,250 entrepreneurs, among them 744 were women (60%) on January 1, 2015.

In Kazakhstan, 1.2 million individual entrepreneurs were registered by the end of the first month of 2018, which is 0.8% (9.8 thousand) more than at the end of January 2017[8].

Of these, 560.9 thousand individual entrepreneurs are under the leadership of women - this is 1.1% (6.3 thousand) more than a year earlier. Their share in the total number of registered individual entrepreneurship was 47% (a year earlier, 46.9%).

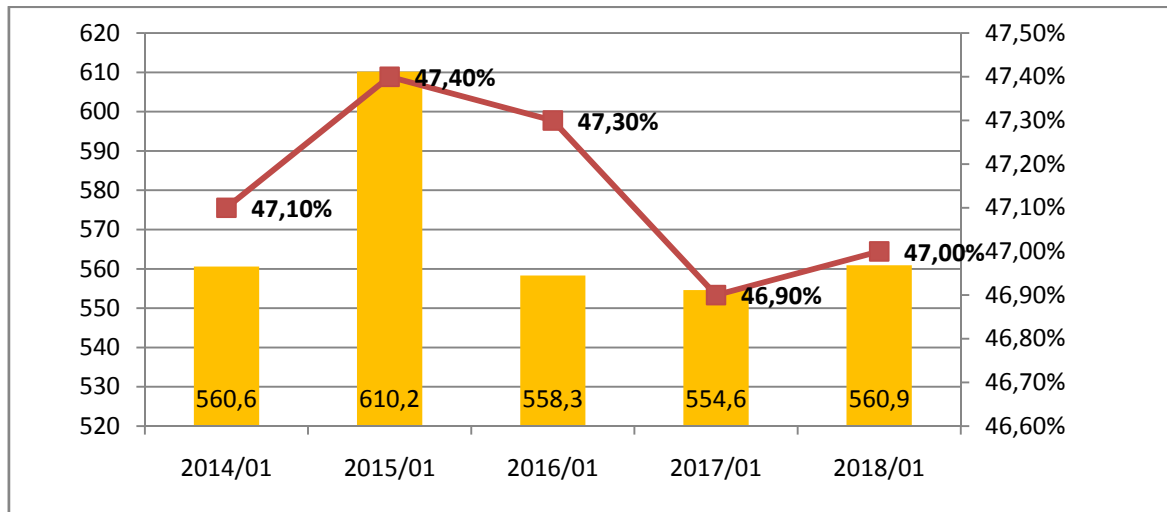


Figure 1-Entities of individual female entrepreneurship.

January 2018 (thousand units)

(- total units, - % the share from all registered entities of individual entrepreneurs)

The number of operating individual entrepreneurship with women executives amounts to 438.5 thousand units, or 78.2% of all registered individual enterprises under female leadership. The share of women in business among the total number of existing individual entrepreneurship in Kazakhstan is 46.5%.

The highest concentration of female executives among all existing individual entrepreneurship is in the field of education (73.5% is 5.1 thousand). Then there are state government and defense, and compulsory social security is 69.2% (however, these are only 9 individual enterprises), and TOP-3 ends the sphere of real estate operations - 64.5% (44.9 thousand enterprises).

The lowest rate of women's involvement in management among existing individual enterprises is in the field of transport and warehousing. Its amount is 14.8% (9 thousand) of all existing individual enterprises in the country.

There are offered two programs to support women's entrepreneurship by the Fund "DAMU":

- Actions for supporting women's entrepreneurship with the funds of the European Bank for Reconstruction And Development ("Women in business»);
- The program of microlending of women's entrepreneurship.

Kazakh women will be able to receive up to 10 million tenge as a credit for business development. Credit condition is very attractive – it will be given at a very low rate – 5% per annum. Such program to support women's entrepreneurship was proposed by the Halyk Bank, together with the national chamber of entrepreneurs (NCE) and the Council of businesswomen.

There are involved 2 second-level banks - ForteBank and Bank Center Credit in the program "Women in Business"

9 second-tier Banks (STB) participated in the women's entrepreneurship micro-credit program.

The volume of financing projects for women's entrepreneurship by the bank increased to 2 billion tenge. The initially announced limit of 1 billion tenge was used ahead of schedule - by the end of August of this year.

Since the launch of the program (end of June 2018), about 750 women entrepreneurs have been consulted, 249 of whom have applied for loans. By today the program has issued 81 targeted loans intended for the implementation of business projects in various sectors of the economy. They are medicine, trade, transport and domestic services. Currently, the bank is considering 85 applications.

To complete the picture of working women "Капитал.kz" decided to ask what is the situation in the labor market - how women who do not go into business, but prefer to work for hire feel themselves in terms of wages and job search [10].

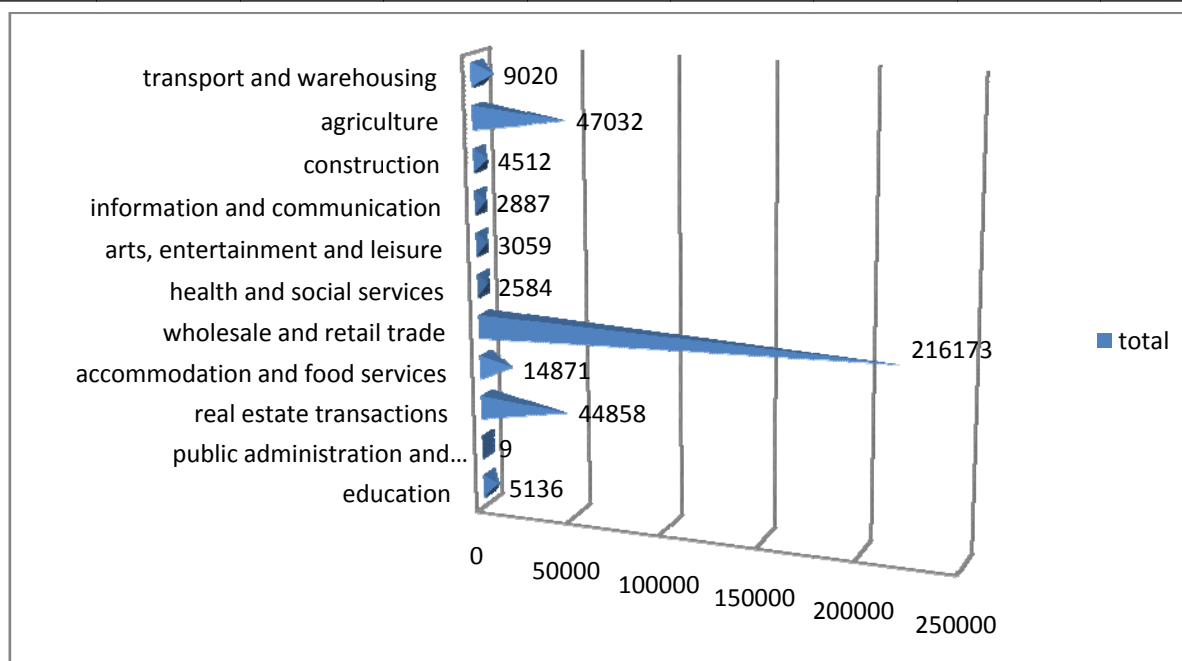


Figure 2 - Entities of individual female entrepreneurship in the Republic of Kazakhstan. January 2018 (thousand units)

HeadHunter reported: in 2017, among candidates for vacant positions, 53% of women were recorded, while there were more women who wanted to find a new job, plus 57% compared to 2016. To get an idea about the income of working women, the company's experts analyzed five sectors of the economy and concluded that the division of wages by gender is not observed. And there were given such data for 2017. In the financial sector, the maximum monthly salary was 560 000 tenge with an average of 111 815 tenge. In the field of media, marketing, advertising, BTL, PR, design and producing the maximum received salary -496 966 tenge, the average was 119 274 tenge. Workers in the field of "medicine, pharmaceuticals, and pharmacies" could earn 635,712 tenge, the average - 119,274 tenge. Representatives of the "telecommunications and communications" sphere could count on a maximum of 496,966 tenge, average salary - 121,088 tenge. Companies from the oil and gas industry offered a maximum of 504,000 tenge, the averagemeaning in this area - 119,275 tenge. In the list of top 5 professional areas, according to the information which was provided by Head Hunter, the percentage of employed women is as follows: the beginning of a career - 13%, accounting - 9.6%, sales - 7.3%, administrative staff - 6.6%, banks - 2.4%.

Today in our country the following obstacles to the development of female entrepreneurship are [11]:

1. Economic barriers: not clear and often changing legal provisions relating to the opening and development of business; extremely high; insufficient start-up capital and difficulty in accessing financial resources; competition from large domestic or foreign companies; limited access to foreign markets due to non-compliance with standards established by more developed countries; high costs required to promote business to these markets; unfavorable government policy towards business development; lack of support from side of the government.

2. Educational barriers: limited access to counseling services for those who wish to open their business or promote it; limited access to knowledge and information; the high cost of professional training provided on the market (only a few countries are developing programs to refinance the costs of participation in training for entrepreneurs, including Poland); limited opportunities in continuous learning.

3. Cultural barriers become even stronger for women from the moment they decide to start their own business. The reason for this is the fact that entrepreneurship has always been associated with men. Women are not part of the informal networks that help to gain positions in business, so they are more likely than men to feel helpless, unprotected, insecure in themselves and in their success [12].

#### **The obtained results (conclusions)**

Based on the identification and systematization of the above data in the development of women's entrepreneurship, it can be concluded that it needs further appropriate improvement.

In this sense, management activities should, on the one hand, have a systematic character, covering all the main areas of management, and on the other hand, should be aimed at solving problems in the development of entrepreneurship that are specific to women's business.

Today we have a number of favorable factors for the development of women's entrepreneurship – the political will of the country's leadership, support for women's public organizations, the level of competence of women, many free niches in the consumer market, interaction with SME support structures.

The improvement of women's business should be carried out precisely in those areas where it has indisputable advantages it relies on the specific "feminine" features of behavior, psyche, mentality, etc.

It is not necessary to take the path of balancing the spheres of business activities of women and men. The development of women's business should be a response to the peculiarities of the rapid development of business in our country.

In conclusion, we would like to quote the words of Zeynalabdin Tagiyev, oil magnate of the beginning of the 20th century from Azerbaijan: “By educating one boy, you get one educated person, and educating one girl, you get an educated family.” Based on his words, one can say that women are an essential part of the formation of a nation, which is an integral part of each state accordingly its development in all spheres and directions. The correct understanding and maintenance of this issue can significantly play on the further development of the country's economy.

Our task is effectively using these factors!

**Ж. Смаилова<sup>1</sup>, Г. Таспенова<sup>2</sup>**

#### **ҚАЗАҚСТАНДА ӘЙЕЛДЕР КӘСІПКЕРЛІГІНІҢ ДАМУ ТЕНДЕНЦИЯЛАРЫ**

**Аннотация:** Бүгінгі күні әйелдер кәсіпкерлігі ерлер мотивациясынан ерекшеленетін бизнеспен айналысу мотивациясының ерекше құрылымына ие. Бұл гендерлік ерекшелік, әйелдер кәсіпкерлігін кәсіпкерлік қызметтің ерекше түрі ретінде қарауға мүмкіндік береді. Бұл мақалада бизнесті жүргізудің әйелдер және ерлер стилі қарастырылған, бизнесті жүргізудің әйелдер моделі жанжалдарды реттеуге, барлық мәліметтерді бірден көруге және қызметтің бірнеше түрін біріктіруге бейімділігімен ерекшеленеді. Мұнда әйелдердің кәсіпкерлік бизнесті жүргізудегі гендерлік мотивациясы ашық көрсетілген. Қазақстандағы әйелдер кәсіпкерлігінің қазіргі даму тенденциясына талдау жүргізілді және ҚР-ғы әйелдер кәсіпкерлігінің дамуына кедергі келтіретін тосқауылдар айқындалды. ҚР-ғы әйелдер кәсіпкерлігін қолдау жүйесін одан әрі жетілдіру бойынша ұсыныстар берілді.

**Түйінді сөздер:** әйелдер кәсіпкерлігі, шағын және орта кәсіпкерлік, гендерлік аспект.

УДК 332.6

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#### **ТЕНДЕНЦИИ РАЗВИТИЯ ЖЕНСКОГО ПРЕДПРИНИМАТЕЛЬСТВА В КАЗАХСТАНЕ**

**Аннотация:** На сегодняшний день женское предпринимательство имеет особую структуру мотиваций занятий бизнесом, которое отличается от мотиваций мужчин. Это гендерное отличие позволяет рассматривать женское предпринимательство как особый вид предпринимательской деятельности.

В данной статье рассмотрены женский и мужской стиль ведения бизнеса, отмечено, что женская модель ведения бизнеса отличается склонностью к сглаживанию конфликтов, умением видеть все детали сразу и совмещать несколько видов деятельности. Здесь раскрыта гендерная мотивация женщин к ведению предпринимательского бизнеса.

Проведен анализ современной тенденции развития женского предпринимательства в Казахстане и выделены основные барьеры, препятствующие развитию женского предпринимательства в РК. Даны рекомендации по дальнейшему совершенствованию системы поддержки женского предпринимательства в РК.

**Ключевые слова:** женское предпринимательство, малое и среднее предпринимательство, гендерный аспект.

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## **KARACHACHANAK DEPOSIT GAS CONDENSATE – PERSPECTIVE RAW MATERIAL FOR PETROCHEMISTRY**

**Abstract.** Any condensate is obtained after a gaseous substance passes into a liquid due to a decrease in pressure or temperature. In the bowels of the earth there are not only gas, but also gas condensate deposits. When pressure and temperature decrease as a result of well drilling, gas condensate is formed - a mixture of liquid hydrocarbons separated from gas.

Knowing amount sloppy cheese, delivered Karachaganak processing complex on consequent conversion in accordance with passport quality cheese with brought on contents faction before  $C_{19}$  and the other factor, on under development methods possible to calculate output base faction, used for reception of the goods products on full scheme to conversion cheese.

**Keywords:** gas condensate, oil and gas chemistry, gas and condensate fields, product pipelines, field, raw materials.

### INTRODUCTION

The main raw materials of petrochemical enterprises for the production of a whole range of products: ethanol, solvents, polymers, synthetic rubber, components of high-octane gasolines are a wide fraction of light hydrocarbons and liquefied hydrocarbon gases.

Gas condensate is a natural liquid mixture of hydrocarbons with a high boiling point, the chemical formula of which contains five or more carbon atoms in the molecule, located in the bowels of the Earth and contained in the composition of the extracted natural gas, oil fields, and also in the form of independent gas condensate deposits. Gas condensate is also formed as a by-product during the operation of gas equipment during the processing and transportation of natural gas, and also accumulates in the equipment of internal combustion engines operating on gaseous fuels. Gas condensate raw materials are used for the production of motor fuels, as well as in the chemical industry.

Gas condensate obtained directly from the well is unstable, but after deep cleaning of any kind of impurities and degassing, it will eventually become stable. As for unstable gas condensate, it is characterized by high pressure of saturated vapors of light hydrocarbon fractions, and this gas condensate is delivered to the consumer via special condensate lines by means of its own high pressure.

By its qualities and application, gas condensate is similar to oil, and in some aspects even surpasses it. An important advantage of gas condensate feedstock, affecting the cost of commercial products, is the lack of the need to dispose of heavy residues, and these are expensive processing processes that require significant capital and operating costs.

Gas condensate can be used as a raw material for the production of gasoline, diesel and jet fuel, and in the petrochemical industry producing high value-added goods [1].

An important role belongs to light hydrocarbons of the  $C_2 - C_5$  fraction, which are contained in natural and associated gas, as well as in gas condensate fields in sufficient quantities for their processing. Previously, these fractions were considered a by-product after stabilization of the gas condensate and were not always widely used.

## MAIN PART

The analysis of the raw materials from the Karachaganak gas condensate field revealed a number of unique properties of gas condensate.

The gas condensate of the Karachaganak field is characterized by a very heterogeneous fractional and chemical composition. As the pool deepens, gas condensate becomes heavier and, in the plantar zone (about 5,200 m), the fractional composition practically corresponds to the product mixture of sulfur oils.

During the development of the field, an interesting pattern has been revealed of changes in the composition and properties of gas condensate along the height of the reservoir, which poses certain difficulties in its processing and in predicting the yield of marketable products. In addition to the noted anomalies in the change in the component composition of the condensate along the height of the productive zone, anomalies are also characteristic of the Karachaganak condensate in the chemical composition of the base fractions. For example, gasoline fractions of Karachaganak gas condensate are characterized by a low content of naphthenic and a high content of paraffin hydrocarbons, which makes it difficult to use them as feedstock for catalytic reforming. In the head gasoline fractions, an unusually high content of total sulfur (up to 1% wt.), including up to 0.6% by weight of mercaptan. In naphtha and kerosene-gas oil fractions, the total sulfur content gradually increases, while the mercaptan content decreases [2].

Anomalies were also noted in the distribution of aromatic (alkyl aromatic) hydrocarbons, which indicates the impossibility of producing aviation kerosene due to the high aromatics content in fractions 120-2300C [1]. However, the low aromatics content in the heavy fractions suggests that the Karachaganak condensate vacuum gas oil fractions are good raw materials for catalytic cracking. The use of this installation allows you to get additional volumes of gasoline and diesel fuel.

The distribution of aromatics and total sulfur in kerosene-gas oil fractions (CGF), which are abnormal compared to conventional oils, showed that CGF fractions from Karachaganak condensate have cetane numbers of 52-54 points, while the content of aromatic hydrocarbons is 21-22%, while in conventional oils - 30-35% of the mass. When using conventional hydrotreating technology, diesel fuel grades of environmentally friendly and export conditions are quite achievable, in which the aromatic content is strictly standardized to no more than 20%.

In the initial period of operation of the complex for processing stable Karachaganak gas condensate, a number of problems have been identified, caused by the peculiarities of its composition, in particular its instability. The main problems encountered in the processing of mercaptans containing gas condensates are due to the high reactivity of mercaptans and the instability of the fractional composition [3].

These features must be considered when sorting, mixing and developing stabilization schemes, preparing and processing various types of raw materials. Considering the prevailing circumstances, a number of technological installations for the preparation and processing of the gas condensate of the Karachaganak field have undergone changes and improvements.

As studies and experience show, the following indicators are recommended for processing Karachaganak gas and condensate feedstock: the content of gas components (C4) is no more than 2%; hydrogen sulfide content - not more than 0.01%; saturated vapor pressure at 380 ° C - not more than 33.25 kPa.

Due to the instability of the raw materials, it is necessary to include stabilization units in the preparation scheme; these requirements are quite feasible while observing the process technology.

Studies [4,5], including pilot plants, provided the creation of a scientific basis for the development of integrated schemes for preparing (stabilizing) gas condensate for transportation at a refinery and processing it to produce a wide range of high-quality motor fuels and valuable petrochemical raw materials.



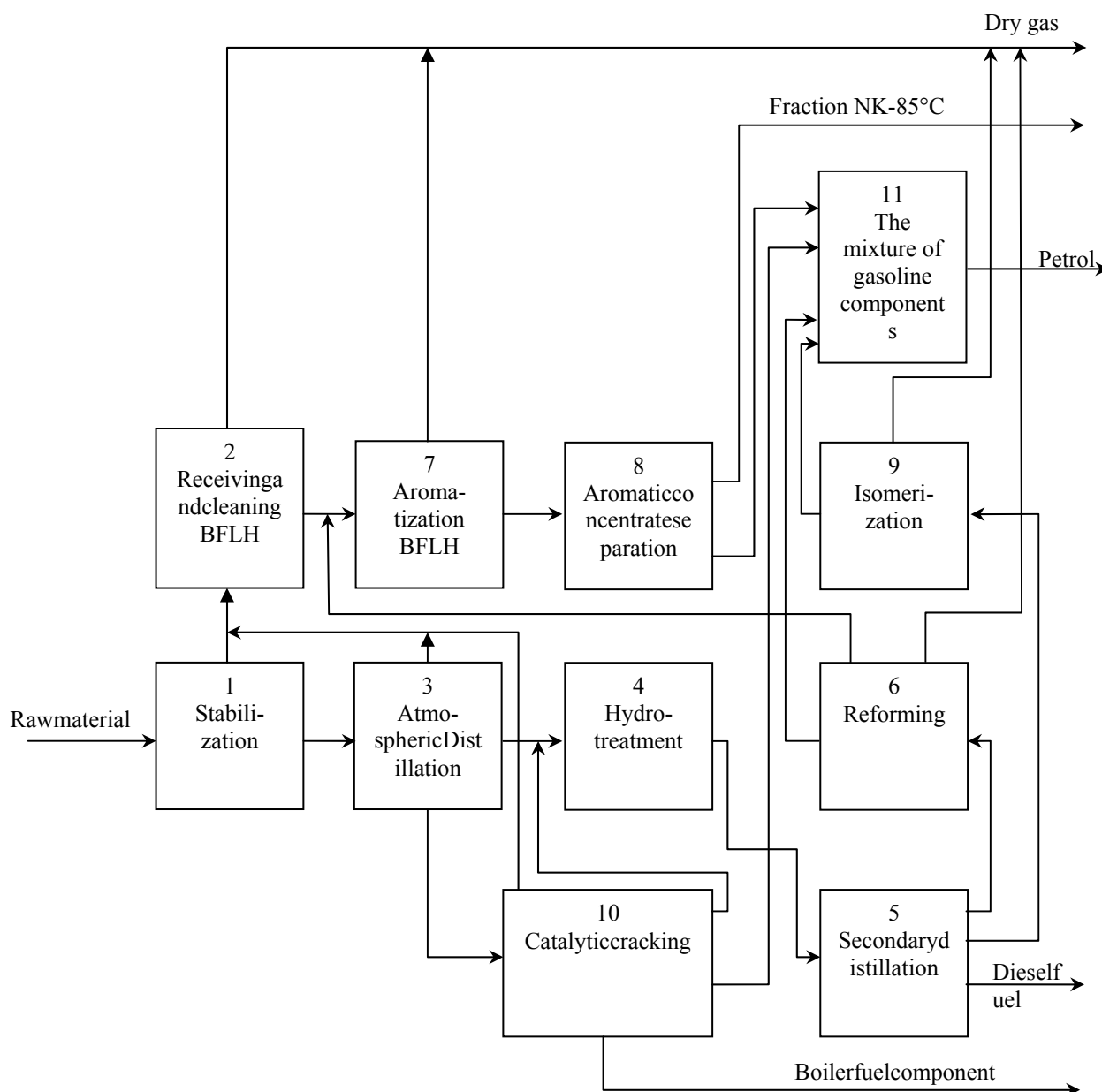


Figure 1 - The scheme of processing gas condensate field Karachaganak

Unstable gas condensate (feedstock) (1) is stabilized in a stabilization column. The stabilization gases are purified (2) from sulfur compounds and stripped by oil absorption method to produce fuel gas and a wide fraction of light hydrocarbons (NGL). Atmospheric distillation of (3) stable condensate is carried out in a distillation column to obtain n.k. fractions. - 230, 230-3500C and residue boiling above 3500C. A mixture of fractions - 230, 230-3500C is subjected to (5) hydrotreating at a pressure of 2.3-3.5 MPa and a temperature of 310-3800C. From hydrotreating products in the column of secondary distillation (5) fractions of n. - 70, 70 - 180, 180 - 3500C. Fraction n. - 700C is subjected to isomerization (6) at a pressure of 2.0 MPa, a temperature of 2700 ° C in an environment of hydrogen-containing gas, a space feed rate of 1.5 h at the catalyst containing 0.28 - 0.32% of platinum to produce a component of high-octane gasoline. A wide fraction of light hydrocarbons is subjected to aromatization (7) on a high-silicon zeolite catalyst containing elements of the VIII, IIB, IIIB groups, at a pressure of 0.3-0.7 MPa, a temperature of 500-6000C, the flow rate of the feed of 1.5-2.0 h<sup>-1</sup> to obtain a concentrate of aromatic hydrocarbons, which is divided into fraction n. - 850C, and 85 -kk [5].

Hydrotreated gasoline fraction 70-1800C is directed to catalytic reforming (9) in a hydrogen-containing gas at a pressure of 2.0 - 2.2 MPa, temperature 480-4900C on catalysts containing 0.33 - 0.52% platinum, 0.03- 0.08% tungsten, 0.01-0.02% rhenium, 0.28-0.32% fluorine, to obtain a component of gasoline and a component of a broad fraction of hydrocarbons, which is mixed with the raw material of stage (7).

Catalytic cracking (10) of the residue from the distillation of gas condensate boiling above 3500 ° C is carried out in a fluidized bed of a zeolite-containing catalyst at a temperature of 500-510 ° C and a pressure of 0.09-0.10 MPa. The cracking products are separated in a fractionation column into dry and liquefied gas (a component of the broad hydrocarbon fraction entering stage 2), gasoline (fraction n. -1950 C), light catalytic gas oil (fraction 195-3500C) and heavy catalytic gas oil (fraction above 3500). Light catalytic gas oil is fed to the Hydrotreating in a mixture with diesel fractions from the stage of atmospheric distillation (3).

Target products are prepared as follows. Mix (11) in the balance of the product (isomerization) (9) fraction n. -700C, fraction 85 –kk. the product of aromatization (7) of a broad fraction of light hydrocarbons, the product of catalytic reforming (6) of fraction 70-1800C, the gasoline fraction of catalytic cracking (10). And get high-octane gasoline with an octane rating of 94-97 by the research method. A hydrotreated 180-3500C fraction is used as a commercial low-sulfur diesel fuel. Heavy catalytic cracking gas oil is used as commercial fuel oil. The fraction n.k.85 with stages of separation of products of aromatization of a wide fraction of light hydrocarbons (8) is directed to the production of benzene [6].

## CONCLUSION

In oil refineries, gas condensate is used as a raw material for the production of low-octane types of gasoline and special anti-knock additives are used to increase the low octane number. In addition, this product is characterized by a very high pour point and cloud point, in connection with which it is used mainly in the production of fuel "summer" species. Much less often gas condensate is used as diesel fuel, since in this case additional dewaxing is required. As a result of gas cleaning, condensate is pumped through special pipelines, and placed in special tanks, where it will wait for its transportation.

In the process of gas condensate processing, the main directions are petrochemical and fuel. High-quality gasoline, diesel, jet and boiler fuel are made just from gas condensate. As a result of petrochemical processing of gas condensate, olefins, aromatic hydrocarbons and other monomers (small molecules) are obtained, which are used in the production of synthetic rubbers, fibers, plastics and various types of resins.

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### **КАРАЧАХАНАК ЖАБДЫҚТАРЫНЫҢ ГАЗ КОНДЕНЦИЯСЫ – ПЕТРОХИМИЯ ҮШІН ПЕРСПЕКТИВТІ ШЕШІМ МАТЕРИАЛДАРЫ**

**Аннотация.** Кез-келген конденсаттан газ тәрізді зат қысыммен немесе температураның төмендеуіне байланысты сұйықтыққа түскеннен кейін алынады. Жер қойнауында газ ғана емес, газ конденсаты да бар. Ұңғыманы бұрғылау нәтижесінде қысым мен температураның төмендеуі кезінде газ конденсатын пайда болады - газдан бөлінетін сұйық көмірсутектердің қоспасы.

C<sub>19</sub> дейінгі фракциялардың және басқа көрсеткіштердің келтірілген құрамы бойынша шикізат сапасының құжатына сәйкес Қарашығанақ өңдеу комплексінің кезекті өңдеуге шығаратын тұрақсыз шикізатының мөлшерін біле отырып, толық сызба бойынша тауарлы өнім алу үшін қолданылатын базалық фракциялардың шығымын есептеуге болады.

**Түйін сөздер:** газ конденсатын, мұнай және газ химиясы, газ және конденсат кен орындары, өнім құбырлары, кен орындары, шикізат.

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**ГАЗОКОНДЕНСАТ МЕСТОРОЖДЕНИЯ КАРАЧАГАНАК –  
ПЕРСПЕКТИВНОЕ СЫРЬЕ ДЛЯ НЕФТЕХИМИИ**

**Аннотация.** Любой конденсат получается после перехода газообразного вещества в жидкое из-за снижения давления или температуры. В недрах земли существуют не только газовые, но и газоконденсатные залежи. Когда давление и температура снижаются в результате бурения скважины, образуется газовый конденсат - смесь жидких углеводородов, отделившихся от газа.

Зная количество неочищенного сырья, доставленного Карачаганакскому перерабатывающему комплексу при последующей конвертации в соответствии с паспортным качеством сырья с доведенной по содержанию фракции до С19 и другим фактором, по разрабатываемым методам можно рассчитать выходную базовую фракцию, используемую для получения схемы конверсии товарной продукции в полном объеме.

**Ключевые слова:** *газовый конденсат, нефтегазохимия, газоконденсатные месторождения, продуктопроводы, месторождение, сырье*

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**INNOVATION IN THE USE OF FUEL  
AND ENERGY RESOURCES OF THE COUNTRY**

**Abstract.** The issues of the current state, the problems of prospects for the development of the fuel and energy complex of the Russian Federation. in particular the oil and gas industry. The factors that determine the need for innovative development of the branches of the fuel and energy complex are analyzed. The use of high-tech services in the fuel and energy sector is proposed as a basic element of this development. The authors emphasized the need to increase energy efficiency and reduce the energy intensity of the economy to the level of developed countries and consistently limit the load of the fuel and energy complex on the environment and climate by reducing pollutant emissions, discharging polluted wastewater, as well as greenhouse gas emissions, reducing waste production and energy consumption. Also, promising ways of innovative development of the fuel and energy complexes of Kazakhstan were proposed.

**Keywords:** innovations, fuel, resources, efficiency, ecology, mining.

**INTRODUCTION**

The fuel and energy complex consists of many separate spheres of economic activity, but all of them are combined into a single complex and are inextricably linked. The sphere of the extraction of fuel and energy minerals is fundamental for the fuel and energy complex. It is extensive and covers extraction as traditional hydrocarbons, including oil, gas, coal, peat, or shale. The main tasks in the field of extraction of fuel resources are the renewal and accumulation of reserves through exploration and development of new deposits. Manufacturing industries include all processes and systems for transforming primary fuel and energy resources into marketable products for their subsequent consumption or further transformation, and it is this area that produces the product with the highest value added in the fuel and energy sector. Problems of energy development, ensuring energy security as a basic element of sustainable and dynamic development of the economy of any state are constantly in the focus of attention of both specialists and the world community. Despite the efforts of a number of countries to increase capacities in the nuclear power industry and the use of renewable energy sources, the dominant position in the structure of consumption of primary energy resources will remain until 2030 for energy carriers of organic origin and will amount to 85%. At the same time, in their total volume, the first place still holds and in the future will hold coal, the second - natural gas, the third - oil.

**MAIN PART**

Especially great importance is the fuel and energy complex in the Republic of Kazakhstan (RK). First, in the climatic conditions of Kazakhstan, the provision of fuel and electricity to the economy and the population becomes a vital factor in the existence of entire regions. Secondly, the huge reserves of natural fuel resources provide Kazakhstan with a large part of the proceeds from their exports. Thirdly, today the

fuel and energy complex is a huge enterprise consisting of a large number of oil and gas enterprises. Many large enterprises of the complex are city-forming. They provide not only employment for the majority of the population, but also a significant share of revenues to local budgets.

As a rule, the main factors determining the degree of use of any energy source are its estimated reserves, net yield of useful energy, cost, potential hazardous environmental impacts, as well as coal, social effects and impact on industry, ensuring the filling of budgets of all levels. In addition, the fuel and energy complex has a high state security in the republic. Each energy source has advantages and disadvantages, as a result of which the development and consumption of these sources in the world energy sector are significantly different.

Economic management of natural resources in various countries of the world. The mining industry (including oil and gas) is a leading sector of the global economy. According to the British newspaper Financial Times, this sector today ranks first in the world in terms of the capitalization of the largest companies, including the extractive industry itself (without oil and gas) in fifth place among global industries, following the banking sector, the oil and gas industry, the pharmaceutical and computer industries. (picture 1).

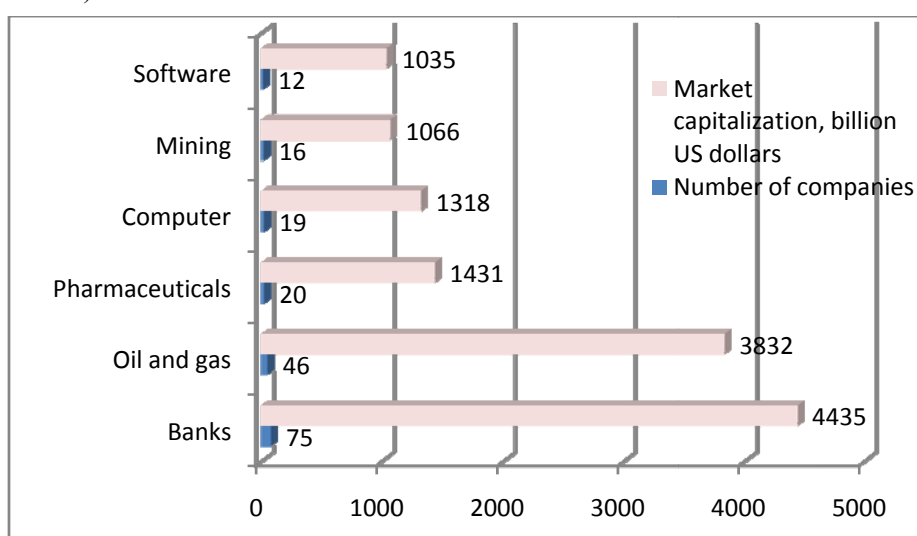


Figure 1 - Capitalization Levels of Leading Sectors of the Global Economy

In recent years, there have been intense discussions on the goals and nature of the modernization of the economy, with an unchanged focus on moving away from resource-oriented growth and the earliest possible transition to the knowledge-intensive nature of economic development.

The demand for coking coal in world markets is significantly expanding, which is associated with an increase in the production volumes of steelmaking companies in the Asian region (especially the rapidly developing steel industry in India and China) [16; 46].

RK is moving in line with the global upward trend in coal consumption, which can be called a jerk to coal. The fuel energy industry existing in Kazakhstan is based on the implementation of the model “extraction of the energy carrier — its transportation — burning at the power plant — energy production — storage of waste”. Each stage in this chain is associated with a set of problems that are objectively exacerbated when the output of marketable goods is increasing.

Thus, high injuries and accident rates of Kazakhstani mines are well known, as a result of which not only economic but also huge social and political losses of society take place. In recent years, accidents claiming the lives of dozens of miners have become uncommon for the country.

Modern methods of coal mining are characterized by a large-scale anthropogenic impact on the ecology of the mining regions, aggravated by the ongoing development of the industry. In addition, the situation is exacerbated by increasing the pace of coal production in the most earthy and open way.

In addition, rail transport of coal is limited by high transport tariffs, reducing its competitiveness in distant markets. The growth of tariffs for electricity due to the high energy intensity of mining production has a negative impact on the competitiveness of coal.

Incineration of coal delivered to a thermal power plant (TPP) objectively leads to the accumulation of a significant amount of ash waste and the occupation of large areas of the earth's surface beneath dumps. The ecological situation in the areas of large and medium-sized thermal power plants deteriorates significantly over time, and the living environment degrades. Recently, progressively, in scientific circles and in the press, there has been a progressive proposal to build a thermal power plant on the sides of open cuts and to create coal-energy complexes with commercial products - electricity, transporting which to remote markets is incomparably more efficient than coal transportation. The implementation of this idea will solve some of the problems listed above.

In various sectors of the economy, the indicator of increasing energy efficiency can be:

- in the industrial sector:
  - reduction of energy consumption per unit of output;
- in the housing and utilities sector:
  - reduction of heat consumption per square meter of heated housing; reduction of fuel consumption at generating plants (gas, fuel oil, coal, etc.); reduction of electricity consumption per person; reduction of losses in electric, heating networks;
- in the transport sector: reduction of fuel consumption by passenger transport (air transport, rail transport, urban and intercity passenger vehicles) per person-kilometer, and personal transport per fuel-per-kilometer ratio [1, p.27].

Given that global energy consumption is constantly growing, we believe that it is necessary to consider in more detail the role and prospects for energy saving in solving this problem. Today in our country one of the solutions to the energy crisis is the introduction and use of alternative energy sources. According to experts, 70% of energy consumption comes from factories, the remaining 30% is spent by the population, while in Europe the share of energy consumed by industry is 40%. However, it is necessary to take into account the trend of growth in energy consumption with the growth of the economy.

Despite the fact that the Republic of Kazakhstan belongs to the group of countries with strategic hydrocarbon reserves, and the energy intensity in Kazakhstan is the highest in the world, the issue of energy saving and energy efficiency remains relevant. In order to solve these problems, the Energy Saving 2020 Program was developed, where one of the main priorities is the modernization and improvement of the energy efficiency of the country's industry and large-scale promotion of energy saving among the population.

Among the main tools that allow for the transition and successfully implement an innovative development model, it seems appropriate to highlight the following:

1. Creation of a center of innovative technologies based on the principles of a private-state partnership to solve systemic research and production problems of the development of the fuel and energy complex, as well as the development of an engineering center for power engineering for the development and manufacture of leading samples of innovative equipment, its testing and certification.
2. The introduction of innovative development programs of joint stock companies with state participation.
3. Technological platforms in the energy sector, which will combine leading universities, research institutes, design, engineering and service companies, manufacturers of equipment and energy companies.
4. Innovative territorial clusters.

The main components and features of the energy of the future:

- use of unconventional and renewable energy sources - solar, wind, water flows, geothermal heat, biomass, ocean and sea water;
- decentralization of energy production - obtaining commercial energy from local and individual sources (solar panels, mini wind turbines, heat pumps, etc.), through which you can carry out not only self-contained power supply, but also transfer surplus to the total grid;
- introduction of energy and resource saving technologies (both industrial and domestic) - widespread implementation of measures for the conservation and efficient use of energy and resources (heat, water, full utilization of residual streams), reduction of electricity losses, steam, water, any heat, etc. ; reducing the amount of industrial and domestic waste;
- transfer of motor vehicles (cars, trucks, public) to non-hydrocarbon fuels and electricity, as well as the development of new economical modes of transport, such as monorail, magnetic cushion and others;

• extensive use of Smart Grid technology (smart network), based on the principles and methods of standardizing the interoperability of power equipment and information technology.

It is assumed that in their development energy technologies can move in the directions shown in Table 1.

Table 1 - The main directions of development of energy technologies

Directions	Technology
Motorization	Energy efficient vehicles. New materials (composites). Hybrids, electric transport. Transportation on hydrogen fuel cells. Gas for transport. Biofuels of the second and third generations.
Electrification	Distributed thermal generation (micro CHP). Wind power plants (scaling and cheapening). Thermal power (coal) installations with supercritical steam parameters. Gas-steam power plants with coal and biomass gasification. Direct converters of solar energy into electricity. Solar hubs. CO <sub>2</sub> capture and disposal at thermal power stations. Decentralization of generating capacity. Intelligent Smart Grid power system. Superconductivity. Energy storage and storage systems.
Industrialization	CO <sub>2</sub> capture and disposal. Production of hydrogen, synthetic fuel.
Urbanization	ActiveHouse and PassiveHouse technologies, resource-efficient cities. Heat pumps. Solar heating.
Extraction of fossil fuels	Non-traditional mining technologies (from shale, bituminous rocks) oil and gas. Deep water mining technology. Production on the Arctic shelves. Cheaper gas transportation technologies.
Note - these works [6; 7]	

Some of these technologies have already come close to becoming commercial and used on an industrial scale. Other green technologies with great potential need to be improved and should be considered for the long term.

Today, the local executive bodies of all regions and cities have developed and are implementing comprehensive plans for energy conservation in the areas of housing and public utilities, industry, training, and transport as part of an energy saving program. The implementation of the programs is based on the state policy of energy saving and in the future it will allow to work out a list of tasks related to the energy security of the country. In turn, the implementation of renewable energy projects (RES), contributes to the formation of the foundations of a "green economy". Therefore, in order to effectively address this task, the energy conservation policy should cover all regions and sectors of the economy.

#### CONCLUSION

Summing up the above, it should be noted that the development and implementation of programs aimed at energy saving and energy efficiency contributes to the development of the production of electric and thermal energy from environmentally friendly and inexhaustible sources of free energy, including renewable energy technologies. So one of the important tasks of the FIID program of Kazakhstan and the development of its "green economy" is to increase the non-commodity export potential of Kazakhstan.

Traditional energy, based on fossil energy, is technologically, economically and environmentally unsound in meeting the growing needs of the global economy.

Today, mankind has a choice: either to address threats to energy security, internationally agreed solutions will be worked out and consistently implemented (this is not a local or national problem, but a global problem), or the struggle for resources will not result in solving the energy problem and above all for the main resource - energy.

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#### МЕМЛЕКЕТТІҢ ОТ-ЭНЕРГЕТИКАЛЫҚ РЕСУРСТАРЫН ПАЙДАЛАНУДАҒЫ ИННОВАЦИЯЛАР

**Аннотация.** Қазіргі жағдайы, Ресей Федерациясының отын-энергетикалық кешені, оның ішінде мұнай-газ саласының даму перспективалары туралы мәселелер қаралды. Отын-энергетикалық кешен салаларының

инновациялық даму қажеттілігін анықтайтын факторлар талданады. Отын-энергетикалық секторда жоғары технологиялық қызметтерді пайдалану осы дамудың негізгі элементі ретінде ұсынылады. Авторлар энергетикалық тиімділікті арттыру және экономиканың энергетикалық қарқындылығын дамыған елдер деңгейіне дейін төмендету және қоршаған ортаға және климатқа ластаушы заттар шығарындыларын азайту, ластаушы ағынды суды шығарып тастау, сонымен қатар парниктік газдар шығарындыларын азайту, қалдықтар мен энергияны тұтынуды азайту жолымен үнемі шектеу қажеттігін атап өтті. Сондай-ақ Қазақстанның отын-энергетикалық кешендерін инновациялық дамытудың перспективалық жолдары ұсынылды.

**Түйін сөздер:** инновациялар, отын, ресурстар, тиімділік, экология, тау-кен өнеркәсібі

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## ИННОВАЦИИ В ИСПОЛЬЗОВАНИИ ТОПЛИВНО-ЭНЕРГЕТИЧЕСКИХ РЕСУРСОВ СТРАНЫ

**Аннотация.** Рассмотрены вопросы текущего состояния, проблемы перспективы развития ТЭК РФ. в частности нефтяной и газовой промышленности. Анализируются факторы, определяющие необходимость инновационного развития отраслей топливно-энергетического комплекса. В качестве базового элемента такого развития предлагается использование высокотехнологичных услуг в отраслях ТЭК. Авторами подчеркнута необходимость повышения энергоэффективности и снижения энергоёмкости экономики до уровня развитых стран и последовательное ограничение нагрузки топливно-энергетического комплекса на окружающую среду и климат путем снижения выбросов загрязняющих веществ, сброса загрязнённых сточных вод, а также эмиссии парниковых газов, сокращения отходов производства и потребления энергии. А так же предложены перспективные пути инновационного развития топливно-энергетических комплексов Казахстана.

**Ключевые слова:** инновации, топливо, ресурсы, эффективность, экология, добыча

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TO THE LABOR CONTRACT: EXPERIENCE OF THE REPUBLIC  
OF KAZAKHSTAN AND FOREIGN COUNTRIES**

**Abstract.** According to the authors, the issues of choosing the applicable national law to an employment contract in Kazakhstan has a big difference compared with foreign countries, in particular with developed countries. In general, there are a number of problems that, when compared with international standards, reveal weaknesses in the legal framework, the term of the employment contract with the executive body should be regulated separately from other categories of workers. The time limits for the application of disciplinary measures to managers should be extended. An example is given of the choice of applicable national law to an employment contract in the Republic of Kazakhstan, which despite the differences with the labor laws of the EU countries, nevertheless, there is a tendency towards a convergence of the provisions of national labor laws.

**Keywords:** international commercial contract, conflict of laws rule applicable to the contract law, the law of the country most closely associated with the contract.

**INTRODUCTION**

Kazakhstan firmly stood on the rails of a market economy, which inevitably entails a shift in priorities towards the protection of production interests. World practice shows that a market economy is always aimed at the prevalence of production interest over social, and therefore it is impossible to reduce the tasks of labor legislation exclusively to ensuring the interests of the employee.

From January 1, 2016, the new Labor Code of the Republic of Kazakhstan came into force. Then the leaders of the Kazakhstan trade union organizations were concerned about the innovations that they made in the new document. They believed that the rights of the wage worker were minimized, and the powers of the employer were expanded.

The adoption of the new Labor Code has more influenced employers, who must now harmonize personnel documentation and reflect all new provisions in them. At the same time, according to their information, the entry into force of the code also raised some additional questions from both employers and employees.

The new Labor Code has determined that it applies to employees and employers located in Kazakhstan, including branches and representative offices of foreign legal entities.

This opinion is confirmed by several experts in the document. For example, earlier, the Labor Code provided for compensation in the amount of not less than the average salary per year upon termination of an employment contract without a procedure for notifying an employee to an employer. Now, according to their information, the new Labor Code, with this type of dismissal, provides for compensation, which is established by agreement of the parties. Therefore, lawyers recommend to pay attention to the amount of compensation payments and if the compensation does not suit the employee, he has the right to offer his own conditions.

## MAINPART

The average monthly nominal wage of employees of large and medium-sized enterprises in Kazakhstan in the reporting period of 2018 amounted to KZT 167,458 and increased compared to the previous year by 6.2%, in real terms, a decrease - by 1.1%.

Differences in pay are characterized by types of economic activity. The maximum wage was recorded in the mining industry and quarrying - 341775 tenge \*, the minimum - in agriculture, forestry and fisheries - 91084 tenge.

In the reporting year, the average monthly nominal wages for men reached 1,79575 tenge, having increased compared to the previous year by 6%, for women - respectively 121793 tenge and by 4.9%.

Among the countries of the Commonwealth of Independent States, Kazakhstan ranks second in terms of the average monthly nominal wages in dollar terms. In 2017 According to the CIS Statistical Committee, the average monthly nominal wage in Kazakhstan was \$ 463, in the Russian Federation - \$ 671, in Belarus - \$ 422.

The amount of employer expenses for the maintenance of labor in 2017. amounted to 7335 million tenge and increased over the previous year by 7.7%. The wage fund of employees amounted to KZT 6,351.6 million or 86.6% of the labor cost.

Number of employees in 2017 amounted to 3,712.5 thousand people and increased compared to the previous year by 1%, of which men amounted to 1,829.4 thousand people, or 49.3% of the number of employees, women - 1,883.1 thousand people, or 50, 7%.

In 2017 the distribution of workers according to the size of wages (according to a one-time registration of workers who worked in June completely) showed that 2.6% of workers received monthly wages up to 30,000 tenge, from 3,0001 to 45,000 tenge - 10.8%, from 45,001 to 75,000 tenge - 21.8%, from 75001 to 105000 tenge - 19.7%, from 105001 to 240000 tenge - 34.5%, from 240001 and higher - 10.6%.

The draft of the new Labor Code has improved the legal regulation of a number of issues, closed some existing gaps in the legislation, introduced new legal institutions. In general, the structure of the document has become much more convenient for use by both lawyers and non-professional "users" of this document.

However, there are still some contradictory or insufficiently regulated provisions that could be corrected during the subsequent work on the project.

In the current edition it is not clear whether the elected representatives of the workers will represent the interests of the entire team as a whole, including those who voted "against" at the general meeting of workers, or only those workers who voted "for" these representatives.

At the same time, in view of the contradiction in the conceptual apparatus, the question remains whether the representatives of the employees can be third parties by proxy. In the case when the participation of representatives of employees is mandatory (for example, in the work of the attestation commission), should representatives of specific (in particular, attested) employees participate in the established procedure, or is any other employee representatives allowed to participate? And what if there is no representative of a particular certified employee, and he does not want to elect him? In this case, the employer's rights to conduct certification may be paralyzed.

We believe that in the draft of the new Labor Code, the legislator should solve the currently existing problems of employee representation and eliminate contradictions. This is all the more important since the bill contains a new big problem - with the resolution of disputes.

It is assumed that a person (an employee, an employer) can apply to a court only if the dispute is not settled by the conciliation commission or his decision is not executed. This rule may lead to the fact that the parties will not be able to go to court if the conciliation commission is not formed (and it can be assumed that there will be an overwhelming majority of such cases). At the same time, a specific person does not have legal mechanisms for the prompt formation of such a commission, if there is none, or no employee representatives are elected, or there is no general meeting on the appointment of representatives to the commission, or an agreement between the representatives and the employer has not been reached. In addition, disputes may arise regarding the procedure for holding the aforementioned general meeting.

Thus, the constitutional right to judicial protection is violated: "Everyone has the right to judicial protection of his rights and freedoms" (clause 2 of article 13 of the Constitution). As the Constitutional

Council of the Republic of Kazakhstan pointed out in its Resolution No. 5 of August 5, 2002, “this constitutional right implies the protection of human rights and freedoms of a person, a citizen, both from arbitrariness of any kind and erroneous court decisions”; “The said constitutional norm implies the free will of a person and citizen in the choice of legal means of protecting their interests.”

For example, the Code of Administrative Offenses contains the rule that, in pursuance of the constitutional right to judicial protection, a person has the right to apply for the transfer of the case to the court when the case is subject to consideration by the authorized state body (part 4 of article 683) . And in the draft Labor Code it is intended to deprive citizens and their employers of this right.

In addition, when a dispute arises between the head and the employer (in the person of participants / shareholders, etc.), the mechanism of the conciliation commission provided for in the draft code is defective, because Representatives of the highest governing bodies of the legal entity (in fact, those who hired the head) are excluded from participation in the commission, and the head acquires a lot of legal opportunities for abuse. With this approach, the rights of participants / shareholders are significantly violated.

There is a need to resolve issues related to the peculiarities of the activities of executive bodies. First of all, members of the collegial and sole executive bodies should be equated in legal regulation, since when forming the current Labor Code on the existence of the sole executive body, they simply forgot that they had to be corrected in the course of law enforcement.

The hiring of managers and the termination of their employment relationships have their differences from ordinary workers. It is necessary to give the right to founders, participants or other management bodies of a legal entity to determine who will issue orders on these issues.

It is necessary to provide employers with the right to independently settle the specifics of concluding an employment contract, determining the procedure and conditions of remuneration, bringing to disciplinary responsibility, resolving individual labor disputes, granting vacations, exercising rights and acting as managers.

A ban on termination of an employment contract while the employee is “on sick leave” or on leave should not be extended to managers in order to avoid causing significant harm to the employer due to the specifics of corporate procedures for convening general meetings of shareholders and participants. In the presence of such a ban, the executive bodies can consciously prevent the termination of labor relations with them by going on leave or opening “hospital”. Unfortunately, such cases are regularly encountered when terminating employment relations with managers of legal entities, but at present the courts refuse to reinstate them at work. We hope that the new Labor Code will include a direct rule that the ban in question is not applicable to this category of workers, which will eliminate grounds for further disputes on this issue.

The practice also requires extending the peculiarities of labor regulation of managers of legal entities to the heads of branches and representative offices, as well as to other elected bodies.

The International Labor Organization recognized as legitimate "borrowed" labor in 1997, adopting Convention No. 181, which is dedicated to private employment agencies. This convention gives private employment agencies, by which any natural or legal person, the right to hire workers for the purpose of placing them at the disposal of a third party (the client company). The Convention has now been ratified by 22 states. Unfortunately, the Republic of Kazakhstan is not yet among the ratifications of the convention. The term, in our opinion, is most appropriate for reflecting the essence of the secondment process, outstaffing and staff leasing from the point of view of Kazakhstan legislation - the personnel provision contract (DPP), we will use this term in the future. In this case, we will try to combine in our DPP those moments that, in our opinion, most closely correspond to the tasks of the society within the framework of the current legislation of the Republic of Kazakhstan.

DPP should be distinguished from outsourcing, which has become widespread in Kazakhstan. Outsourcing refers to the transfer of certain non-core functions of a specialized company. The most frequently outsourced accounting and tax accounting, payroll, administrative IT support, office cleaning, security and others. In accordance with the DPP, one organization places at the disposal of another organization the necessary qualifications for performing certain functions in the interests of that other organization. At the same time, the organization providing personnel does not assume obligations to provide any services. Its only obligation is to provide qualified personnel.

DPP is concluded by two parties - the customer and the employer, thus, the risk of recognizing it as an employment contract in accordance with article 24 of the Labor Code, according to which the parties are the employer and the employee, disappears. It should be recognized that elements of the employment contract are still present in the DPP.

The DPP should reflect the condition that the employee will perform the labor function not in the employer's enterprises, but in the organization of the employer (customer), which entails the need to follow the labor regulations of this particular organization. Determination of employment by the norms of labor legislation is an essential condition of an employment contract (Article 28 of the Labor Code of the Republic of Kazakhstan). A place of work means the location of an enterprise with which an agreement is concluded.

Bringing the labor legislation of the Republic in accordance with international standards is aimed at:

- ensuring the implementation of generally accepted principles and norms of international law, as well as obligations arising from international treaties ratified by the Republic of Kazakhstan;
- creation of necessary conditions for further expansion and deepening of international cooperation;
- consolidation in the Labor Code of world experience in the regulation of labor relations, which contributes to the improvement of the investment climate in the Republic of Kazakhstan;
- minimization of negative social consequences in the period of the republic's accession to the World Trade Organization.

European labor law includes EU norms and norms contained in Council of Europe acts. EU norms, as a rule, relate to the regulation of socio-economic issues, and the norms of the Council of Europe - the regulation of issues in the field of human rights. One of the EU bodies is the European Commission, which initiates the adoption of EU norms and ensures their compliance with each EU member state. If the state violates these norms, the European Commission may apply to the EU Court.

There is also a larger entity - the Council of Europe, consisting of 47 states. The bodies of the Council of Europe are the Committee of Ministers (which includes foreign ministers) and the Parliamentary Assembly of representatives of the national parliaments of the Council of Europe member states. Member States, when developing European law, should take into account Council of Europe guidelines.

EU legal norms can be grouped into three main categories: norms of treaties, EU legislation and norms of judicial practice.

The main EU document - the Lisbon Treaty of 2007 includes two treaties (Maastricht 1992 and Rome 1957) and the Charter of Fundamental Rights of the EU 2000, in fact, it is the EU Constitution. In addition, the Council of Europe treaties are important for regulating the social block of rights: the European Convention for the Protection of Human Rights and Fundamental Freedoms of 1950 (hereinafter referred to as the 1950 Convention) and the European Social Charter of 1996 (hereinafter referred to as the Charter).

The Charter contains the most comprehensive list of social rights that apply in the field of labor, and complements the 1950 Convention. The Charter provides for a number of obligations for signatory states. Thus, these states undertake to fulfill conditions ensuring the effective implementation of the rights enshrined in the text of the Charter. States must create the conditions for the rights provided for in the Charter to be realized. The Charter contains the right to earn a living by freely chosen labor, rights in the field of working conditions, occupational safety and health, the right to fair remuneration, information, collective labor rights, etc. The rules of the Charter apply not only to European workers and employers, but also to migrant workers and members of their families, and the recognition of the right to personal dignity is the basis for regulating the work of all workers.

Monitoring compliance with the Charter is carried out by the European Committee of Social Rights of the Council of Europe through periodic reports of the participating States with a list of measures taken to ensure compliance with the Charter, and through the possibility of filing collective complaints by trade unions about non-compliance with a specific provision of the Charter by the State party. A committee cannot impose sanctions on a state, but the court of a given state has the right to rely on the provisions of the Charter and on decisions of the European Committee of Social Rights when considering a particular case.

The second type of European labor law sources is EU law. It includes regulations, regulations and directives - rules adopted at the proposal of the European Commission by the EU Council and the

European Parliament. Unlike decisions and regulations that are instruments of direct action, directives are introduced through the national legislation of EU member states. The directive obliges the state to take measures within a certain period of time, aimed at achieving the goals indicated in it. Like treaties, acts of EU law are superior to national law. Even if the state does not bring national legislation in line with the directive, its violation may be appealed to the EU Court of Justice.

A significant part of European labor law is exactly the directive. The directive establishes objectives and leaves the EU Member State free choice of means to achieve these objectives. The usual period to bring the national legislation into compliance with the directive is 3 years. It will not be enough to copy the directive text into the labor code, it is necessary to take all legal and administrative measures so that the tasks set by the directive are achieved.

The third source of European labor law is the practice of the European Court of Justice and the European Court of Human Rights, residing in Luxembourg and Strasbourg, respectively. If necessary, the interpretation of European law judge of any EU member state may, and sometimes is obliged to appeal to the EU Court. Decisions of the EU Court of Justice and the European Court of Human Rights are binding on EU member states.

The norms of European labor law regulate issues relating primarily to the health of workers and the safety of their work. The Single European Act of 1986 provides for the right of the Council of the EU to adopt guidelines, basic norms in the field of European labor law, that is, minimum requirements that must be followed by all EU member states. These requirements relate to working conditions, their goal is to increase the level of protection of the health and safety of workers. This goal is dynamic and implies a forward movement in the direction of improving working conditions, increasing the level of occupational safety. This is confirmed by the provisions of the Lisbon Treaty. Thus, EU member states set standards in the field of employee health and safety, and EU standards complement the national legislation of EU member states.

The Charter also provides that employees have the right to rely on fair remuneration, including an increase in wages for hours of additional work. In this regard, it is worth paying attention to cases of confrontation of the norms of the Charter with national law. In conclusion, it should be noted that despite the existing differences in the national labor laws of some EU member states with European labor laws and the present reluctance of state authorities of these countries to bring national labor laws in line with European legal norms, there is an objective tendency for convergence of provisions national labor legislations of EU member states through the general rules of European labor law. This is confirmed by the fact that not only the European judicial authorities in Luxembourg and Strasbourg, but also the national courts of the EU member states, considering the appeals of workers and trade union organizations, give priority to European labor law.

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### **ҚОЛДАНЫЛАТЫН ҰЛТТЫҚ ЗАҢДЫҢ ЕҢБЕК ҚЫЗМЕТІНІҢ ТАҢДАУЫНЫҢ МӘСЕЛЕЛЕРІ: ҚАЗАҚСТАН РЕСПУБЛИКАСЫ ЖӘНЕ ШЕТЕЛ МЕРДІГЕРЛЕРІНІҢ ТӘЖІРИБЕСІ**

**Аннотация.** Авторлардың пікірінше, Қазақстандағы еңбек келісім шартына қатысты қолданыстағы ұлттық заңнаманы таңдау мәселелері шетелдермен салыстырғанда, әсіресе дамыған елдермен салыстырғанда үлкен айырмашылыққа ие. Жалпы алғанда, халықаралық стандарттармен салыстырғанда нормативтік құқықтық базадағы кемшіліктерді анықтайтын бірқатар мәселелер бар, атқарушы органмен еңбек шартының мерзімі қызметкерлердің басқа санаттарынан бөлек реттелуі керек. Менеджерлерге тәртіптік шараларды қолдану мерзімі ұзартылуы тиіс. ЕО елдерінің еңбек заңнамасымен келіспеушіліктерге қарамастан, Қазақстандағы еңбек келісім шартына қолданылатын ұлттық заңнаманы таңдау туралы мысал келтірілген, дегенмен, ұлттық еңбек заңнамасының ережелерін жақындату үрдісі бар.

**Түйін сөздер:** халықаралық коммерциялық келісім-шарт, келісімшарттық заңға қолданылатын заңдар қақтығысы, келісім шартқа неғұрлым тығыз байланысты елдің заңы.

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## ВОПРОСЫ ВЫБОРА ПРИМЕНИМОГО НАЦИОНАЛЬНОГО ПРАВА К ТРУДОВОМУ ДОГОВОРУ: ОПЫТ РЕСПУБЛИКИ КАЗАХСТАН И ЗАРУБЕЖНЫХ СТРАН

**Аннотация.** По мнению авторов, вопросы выбора применимого национального права к трудовому договору в Казахстане имеет большое различие по сравнению с зарубежными странами, в частности с развитыми странами. В целом, имеется ряд проблем, которые при сравнении с международными стандартами, выявляют слабые стороны правовой основы, так срок трудового договора с исполнительным органом должен регулироваться отдельно от других категорий работников. Должны быть увеличены сроки для применения мер дисциплинарной ответственности к руководителям. Приведен пример выбора применимого национального права к трудовому договору в РК, который несмотря на имеющиеся различия с трудовым законодательством стран ЕС, тем не менее имеется тенденция к сближению положений национальных трудовых законодательств.

**Ключевые слова:** международный коммерческий договор, коллизонная норма, применимое к договору право, право страны, наиболее тесно связанной с договором.

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**REFORMING AND DEVELOPING ACCOUNTING  
IN THE REPUBLIC OF KAZAKHSTAN**

**Abstract.** *Purpose of the study* – study of the history of the reform and development stages of accounting of sovereign Kazakhstan.

*Methodology* – general scientific research methods, such as induction and deduction, theoretical generalization, scientific abstraction were used in the study.

*Originality/Value* – the value of the research is revealing the main trends in the development of domestic accounting regulation for the years of independence of the republic. The authors studied the ways, stages of the evolution of the accounting system. For this purpose, legislative and other regulatory acts, by-laws of ministries and departments concerning the conceptual framework and the organizational and structural forms of the organization of accounting were analyzed.

*Conclusions* – accounting reform ensured the adequacy of the accounting system of Kazakhstan to the requirements and characteristics of a market economy, allowed to form a new conceptual apparatus corresponding to the current level of development of accounting science and world trends. The new accounting system, based on the widespread use of international financial reporting standards by most business entities, has made business structures more open and, therefore, preferred by domestic and foreign investors, which has a positive effect on raising the country's competitiveness in the international arena.

**Keywords:** accounting, accounting reform, accounting standards, Kazakhstan accounting standards, international financial reporting standards and national financial reporting standards.

Accounting was and remains the main source of economic information provided for making various economic decisions. Therefore, since independence has been achieved in the Republic of Kazakhstan, consistent work has been carried out to create a sovereign accounting system.

Y.V. Sokolov, a prominent Russian scientist, the author of well-known textbooks on the history of accounting noted: «A person who knows the history of accounting can think more widely, find optimal solutions in daily work, foresee ways of developing an organization and, most importantly, love and be proud of his profession» [1, p.6]. All this dictates the need for careful study and active use in the modern activities of subjects, including the authorized body for accounting, past experience in reforming and developing accounting in the republic.

Accounting reform began in the 90s of the last century with the proclamation of the state sovereignty of the republic. The first stage of reform covers approximately 1991-1997.

The complex of work on reforming was entrusted to the Department of Methodology, Organization and Control of Accounting and Reporting of the Ministry of Finance of the Republic of Kazakhstan, which was faced with a choice: to urgently invent its own methods or to apply to the experience of other countries.

Leading domestic scientists in the field of accounting and auditing note that the department has chosen the second path. The first way was recognized as inexpedient, since it was considered impossible «... to create workable efficient techniques, ignoring foreign experience, the study and application of which is required by market relations» [2, p.22].

The choice of this path is connected with the fact that, due to the economic circumstances that existed at that time, the main source of development of domestic enterprises was foreign investment. In order to create a favorable investment climate, it was required «... to show the highest skill in using the tools necessary to attract as many well-known investors as possible»[3]. Therefore, bringing Kazakhstan's accounting information in compliance with international standards was considered a significant factor in the integration of the republic into the world economy.

To select the appropriate model for reforming domestic accounting, the experience of countries with developed market economies was studied. In this matter, the department was assisted by transnational auditing firms Deloitte and Touche and Price Waterhouse with the financial support of the United States Agency for International Development (USAID). Thus, the leading specialists of the Department of Methodology, Organization and Control of Accounting and Reporting of the Ministry of Finance of the Republic of Kazakhstan, the National Bank and representatives of higher and secondary specialized education of the Republic of Kazakhstan, among whom was one of the authors of this article, have been trained from October 05 to November 11, 1995 in USA. In the process of training, specialists learned about the principles of accounting regulation, organization of the audit, with the system of training accountants and auditors.

The active joint work of the Department of Methodology, Organization and Control of Accounting and Reporting of the Ministry of Finance of the Republic of Kazakhstan with foreign consultants allowed the development of the first Law of the Republic of Kazakhstan “On Accounting”, which was approved by Decree of the President of the Republic of Kazakhstan №2732 on December 26, 1995[4].

The law, in order to regulate the accounting and financial reporting system in the republic, provided for the creation of an authorized state body in the field of accounting, which was assigned a number of tasks, including:

- development and approval of accounting standards and guidelines for them;
- development of regulatory legal acts on accounting and financial reporting issues not regulated by international financial reporting standards;
- development and approval of a standard chart of accounts for accounting and methodical recommendations to them, etc.

The specified authorized body - the National Accounting Commission of the Republic of Kazakhstan - was established in 1996 as a central executive body that is not part of the Government [5]. At the same time, the Methodology, Organization and Control of Accounting and Reporting Department of the Ministry of Finance of the Republic of Kazakhstan was abolished.

The main tasks of the National Commission along with the development, integration of accounting with the international system, were determined to conduct research, analyze the status and organization of accounting for enterprises and organizations of all sectors of the economy, improve the understanding of the essence and purpose of accounting information.

The National Commission has made a significant contribution to the reform of accounting in the country. The commission provided with the adoption of basic documents defining the general rules for organizing and maintaining accounting for all subjects, regardless of their legal form and types of activity. For the first time, entities were given the right to independently choose the forms and methods of organizing accounting, which was expressed in the development of their own accounting policies.

The National Commission, before its abolition in March 1997, introduced 19 Kazakhstan accounting standards, as well as published guidelines for them [6;7;8]. Along with Kazakhstani standards, the General Chart of Accounts was approved for accounting of financial and economic activities of entities; an instruction was developed for its use and a procedure for switching to a new chart of accounts.[9].

Despite the fact that the above documents still did not fully take into account the requirements of international standards, they allowed to solve the basic methodological and organizational issues and lay the foundation for a new accounting system. This provided an opportunity to move to the second stage of the reform, covering approximately 1998-2007.



An important impetus to the reform of accounting at this stage was given by the implementation of the State Program for the Development and Improvement of Accounting and Auditing in the Republic of Kazakhstan for 1998-2000 [10]. The main goal of the program was to introduce a new accounting system adequate to radical economic transformations, providing users with the necessary information, integration of the country into the world community.

The significant event of the period under review is the adoption on February 28, 2007 of the new Law of the Republic of Kazakhstan «On Accounting and Financial Reporting», which is valid until now [11]. The law applies to all entities located in the republic, including branches, representative offices and permanent establishments of foreign organizations. Currently, only individual entrepreneurs who are in special tax regimes and, at the same time, are not registered for value added tax and are not subject to natural monopolies, are not subject to the regulation of this law. In order to support small business, they are allowed to maintain only primary accounting.

For the first time, the law defined the concepts of «public interest organizations», «financial reporting standard», «national financial reporting standards», «international financial reporting standards», «financial reporting depository», and «professional accountant». In addition, the document introduced a new interpretation of concepts familiar to accountants, such as «accounting», «primary accounting documents», and «accounting registers». The legislative act also defined norms relating to the basic requirements for the organization and maintenance of accounting, composition, formation and presentation of financial statements, storage of accounting documentation, etc.

The implementation of the requirements of the law ensured uniform accounting of assets, liabilities, capital and business operations of the entity, providing complete and reliable information on the financial position and performance of the entity.

At this stage, a system of state and non-state accounting regulation was formed, a number of regulatory documents were adopted to implement the law “On Accounting and Financial Reporting”, such as the Standard Chart of Accounts, National Financial Reporting Standard №1, National Financial Reporting Standard №2 [12;13;14].

However, the rise of the country's economy and the conditions for the development of the securities market, as well as the current global trend, necessitated the full and unconditional adoption of international financial reporting standards [15]. The modern stage of development of accounting system began in 2008.

At present, the subjects of large business and public interest organizations of the republic prepare financial statements in accordance with International Financial Reporting Standards (IFRS); medium-sized businesses, as well as state-owned enterprises based on the right of operational management (state-owned enterprises) according to International Financial Reporting Standards for small and medium-sized businesses (IFRS for SMEs).

Regulations adopted in the process of reforming the accounting played a significant role in ensuring compliance of the accounting system of Kazakhstan with the requirements and characteristics of a market economy.

A new conceptual apparatus has been formed, reflecting global trends and market economy conditions, new accounting objects have been identified and methods for their accounting have been defined, the composition has been determined and a methodology has been developed to form separate and consolidated financial statements that satisfy the needs of a wide range of users.

The new accounting system adopted in Kazakhstan made business structures more open and, therefore, preferable for domestic and foreign investors, which ultimately had a positive effect on the overall recovery of the entire economy.

The most important task of the republic to enter 30 competitive countries of the world actualizes the further development of accounting. As part of the indicators of the global competitiveness index of the World Economic Forum rating there is a survey indicator –«Excellence in Accounting and Auditing Standards». This once again confirms the conclusion that a country becomes competitive only when it can

freely integrate into the world economy and attract investments through the transparency of financial statements. In this direction, in the long term, there will be extensive work to further improve both the quality of financial reporting in the country and to improve the organization of accounting using modern information, including cloud technologies.

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### **РЕФОРМИРОВАНИЕ И РАЗВИТИЕ БУХГАЛТЕРСКОГО УЧЕТА В РЕСПУБЛИКЕ КАЗАХСТАН**

**Аннотация.** Цель исследования – изучение истории реформирования и этапов развития бухгалтерского учета суверенного Казахстана.

**Методология** – в процессе исследования использованы общенаучные методы исследования, такие как индукция и дедукция, теоретического обобщения, научной абстракции.

**Оригинальность/ценность** – ценность исследования состоит в выявлении основных тенденций развития отечественного бухгалтерского учета за годы независимости республики. Авторами изучены пути, этапы эволюции системы бухгалтерского учета. В этих целях проанализированы законодательные и другие нормативно-правовые акты, подзаконные документы министерств и ведомств, касающиеся концептуальных основ и организационно-структурных форм организации бухгалтерского учета.

**Ключевые слова:** бухгалтерский учет, реформирование бухгалтерского учета, стандарты учета, казахстанские стандарты бухгалтерского учета, международные стандарты финансовой отчетности, национальные стандарты финансовой отчетности.

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### **Қазақстан Республикасында бухгалтерлік есепті реформалау және дамыту**

**Аннотация.** Зерттеудің мақсаты - егеменді Қазақстанның бухгалтерлік есебін реформалау тарихы мен дамыту кезеңдерін зерттеу.

**Әдістемесі** - зерттеу барысында индукция және дедукция, теориялық жинақтау, ғылыми абстракция сияқты жалпы ғылыми зерттеу әдістері қолданылды.

**Бірегейлігі / құндылығы** – зерттеудің құндылығы Республиканың тәуелсіздік жылдарында отандық бухгалтерлік есептің дамуының негізгі үрдістерін анықтаудан тұрады. Авторлар бухгалтерлік есеп жүйесінің эволюциясының жолдары мен кезеңдерін зерттеді. Осы мақсатта бухгалтерлік есепті ұйымдастырудың тұжырымдамалық негіздері мен ұйымдық-құрылымдық нысандарына қатысты заңнамалық және басқа да нормативтік-құқықтық актілер, министрліктер мен ведомстволардың заңға тәуелді құжаттары талданды.

**Түйін сөздер:** бухгалтерлік есеп, бухгалтерлік есепті реформалау, есеп стандарттары, бухгалтерлік есептің қазақстандық стандарттары, қаржылық есептіліктің халықаралық стандарттары, қаржылық есептіліктің ұлттық стандарттары.

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## **EVOLUTION OF PERSONNEL MANAGEMENT DEVELOPMENT AND ITS FEATURES IN KAZAKHSTAN**

**Abstract.** The article deals with the evolution of personnel management, based on the development of human activity and its history. Earlier, the development of human resources management was carried out before the period of the industrial revolution, in an agrarian economy with limited production. Further on the periods: industrial revolution, post-industrial revolution, which made significant changes in the management of human resources and introduced the prerequisites for personnel management through the emergence and dissemination of the «scientific organization of labor», the development of the trade union movement and the active intervention of the state in the relations between employees and employers.

Features of the development of personnel management in Kazakhstan consist in the fact that it can not be attributed to the same type, because of the geographical position, Kazakhstan for many years was part of the USSR and the domestic system is a mixture of cultures of Asia and Europe. Personnel management in Kazakhstan is still at the development stage. At the same time, it should be noted that in the history of the country's development, many meaningful and strategic changes in the field of human resources management have been implemented, which provide an opportunity for further development and improvement of personnel management.

**Keywords:** labor, personnel management, human resources, human resources management, human resources, staff, personnel management system, human resource management concepts, labor legislation, human resource management principles.

**Introduction.** In modern conditions personnel management is considered one of the important aspects of the strategy of companies in modern management. Especially in a competitive environment the role of man grows rapidly and there are high demand to his qualifications. Many scientific economists argue that the personnel management system allows companies to keep leadership in a competitive environment and survive in the face of fierce competition [1]. The knowledge and experience of employees are the source of competitive advantage, economic growth and efficiency of the company, but how it will be implemented depends on a well-designed management system.

**The main section.** The roots of human resource management go deep into the history of human society. Even the first representatives of mankind, united in tribal communities, daily solved the problems of using their own, very limited physical and intellectual resources, faced issues of the division of labor, labor motivation and discipline [2].

In the Middle Ages, most organizations used the work of a very small number of people (perhaps the only exception was the army), for many years and even centuries, performing the same operations. Personnel management was one of the activities of the head of the organization, most often its owner, who made decisions regarding his employees based on common sense and experience. For all the external simplicity of this activity, the Middle Ages provides interesting examples of planning and developing a professional career (Western European workshops with a detailed internal hierarchy and criteria for promoting it), stimulating labor (first plans, employee participation in profits), vocational training (workshop schools, apprenticeship system) [2]. Consider the evolution of personnel management, based on human activity and history. Development of human resources management was carried out in the period before the industrial revolution - primarily in an agrarian economy with limited production [3]. The number of specialized crafts was limited and, as a rule, was carried out within the village or community with apprentices with the help of craftsmen. The communication channel was limited.

The period of the Industrial Revolution (1750–1850) - The Industrial Revolution led the economy from agriculture to industrial economics. Modernization and growth of communication tools paved the way for an industrial installation. There was created a department that monitored the wages of workers, their social security and other issues. This led to the emergence of the concept of "personnel management" with the following important tasks:

- Setting the wages of workers;
- Keeping the records of workers;
- Housing issues and workers' health [3].

An important event in the industrial revolution was the growth of the Workers' Union (1790) — workers in industry and factories had to work more than expected for low wages. In this regard, growing unrest, workers around the world began to protest, and this led to the creation of trade unions. In order to solve labor issues on the one hand and management on the other, the personnel management department had to master politics and diplomacy, thus the department of industrial relations appeared [4].

Post-industrial revolution – there are more attention to the term of "human resource management". Various studies were released and many experiments were conducted during this period, as a result of which the term "human resource management" acquired a completely new meaning and value [4].

The industrial revolution of the 19th century radically changed the character of economic organizations: factories that use the joint work of a significant number of people replaced the workshops. The nature of labor has also changed - the mechanical and vapid labor of the proletariat, who, according to C. Marx's apt definition, was only an "appendage of a machine", replaced the skilled labor of the artisan. The growth of economic organizations and the growing dissatisfaction with the working conditions of the majority of their workers gradually forced the leaders of these organizations to hire specialists who dealt exclusively with workers. At home of industrial production - in England they were called the Secretaries of Welfare, in the United States and in France - Public Secretaries. The main functions of the first specialists in human resource management were limited to setting up schools and hospitals for workers, controlling working conditions, resisting attempts to create trade unions [5].

Significant changes in personnel management occurred once again in industrialized countries in the 30s – 40s of the 20th century. The three most important factors predetermined these changes - the emergence and spread of the "scientific organization of labor", the development of the trade union movement and active state intervention in relations between workers and employers. This period of development of personnel management can also be distinguished in several stages [6].

Human resource management is the development phase (1940 - 1950): during this period, a full package of personal services was already carried out. In addition to recruitment, there were special trainings and master classes from masters of services. Responsible for the staff, began to manage staff, and gradually were already involved in labor relations. Nevertheless, the activities of personnel management remained at the operational level.

Human resource management - the phase of maturity (1960s, 1970s).

During this period, the above services shifted the way to the creation of an organization, the development of managers and management itself as a whole, as well as to the planning of the workforce. A significant number of HR managers have become members of senior management. An increasing number of legislations already required that HR managers gradually study labor laws and become specialists in this field.

Human Resource Management - First Stage (1980s): The term human resource management took its origins in the works of American authors, and later was also used in the business sphere. HR managers faced problems of corporate culture and market economy. The main question was how human resource management can affect the company's results. Strategic approach to human resource management, efficiency reward gained momentum in this phase.

Human resource management - the second stage (1990s). This stage began with negative signs in the field of corporate culture, such as greed and individualism. Therefore, firms began to appreciate teamwork, strengthening of authority, continuous development and training in the organization. These professional qualities were discussed more often and the approach to such processes was found through

the creation of a corporate culture, assessment management and staff remuneration. The crisis has affected the growth of more compact and more flexible organizations. The concept of lifelong recruitment has ceased to be the norm. HR managers often began cutting staff. [6]

By the end of the 20th century, labor legislation was already a complex, highly branched branch of law, not only in traditional, industrialized, but also in many new industrialized countries, such as Korea, Singapore, Taiwan, and Mexico. Despite the diversity of national legislations, two main models of state regulation of labor relations can be distinguished: Anglo-Saxon and European (Rhine). In countries with an Anglo-Saxon approach to regulation (USA, UK, Taiwan, Singapore), the state considers employers and employees as “equal” market participants (players) and sees its role in creating and ensuring the smooth functioning of the elements necessary for the market: competition, limiting monopolies legal system, etc. The European model is built on the assumption that employees are deliberately disadvantaged compared to employers and need state protection in the form of minimum wages, universal social and health insurance, special state bodies protecting the interests of workers [7].

At the beginning of the XXI century. Kazakhstan's personnel management system was in its infancy due to the fact that for a long period the state acted as the dominant coercive social organization. The lack of a social partnership tradition in society with particular urgency raises the question of finding the conditions and mechanisms for attracting owners, hired staff and the state to social dialogue in market relations. Among those organizations in Kazakhstan that profitably use human resources with the help of the personnel management system, most of them are organizations that mechanically transfer ready-made Western models without taking into account the specifics of their own activities, the Kazakhstani system of values, carrying echoes of the Soviet past [8].

Changes in social institutions and the structure of the Kazakh society at the end of the 20th - early 21st centuries significantly transformed the traditional value system of the population, sustainably reproduced over a long period. The change in the structure of Kazakhstan's society, the structure of personal values and motives influenced the patterns of work behavior of the majority of the population of the country, which in turn had a strong influence on the deep layer of the value system of domestic organizations. The change in the political regime helped the country in that Kazakhstan was intensively involved in globalization processes and revealed many problems characteristic of most of the world's communities, such as external and internal migration, gender policy, the consequences of information globalization and others. As subsequently, today in Kazakhstan, there is a change in people's life attitudes, value systems, needs, behavior and presentation [9].

In the country in the early 90s of the twentieth century began the formation of a new state . The system of government was completely transformed, the principles of separation of powers were defined, the parties separated from the civil service and other changes occurred. At the same time, a new personnel management system was actively formed in the civil service, as the old Soviet model lost its strategic goals, and as a result, uncertainty arose in the country, and chaos in the functioning of organizations, in the means and methods of its work. Signs of uncertainty and chaos were frequent reorganizations, reductions in units, employees, and permanent deviations in the activities of civil servants from accepted rules, norms and standards. Also increased bureaucracy in the sphere of civil service, corruption, transfer of civil servants to commercial and other non-governmental organizations [9].

Thus, the personnel management system in Kazakhstan cannot be attributed to one type, due to its geographical position, also due to the fact that Kazakhstan has been a part of the USSR for many years, our system is a mixture of cultures from Asia and Europe, as well as signs of the Soviet culture. In the domestic market, the size of the company and its status on the world stage play an important role [32]. Therefore, in small enterprises, the function of personnel management is performed by several people, while in large organizations there is a whole department for personnel management.

The principles of personnel management in Kazakhstan constitute the rules and procedures that managers must follow in order to work effectively. There are several such principles that were formed in Soviet times [10].

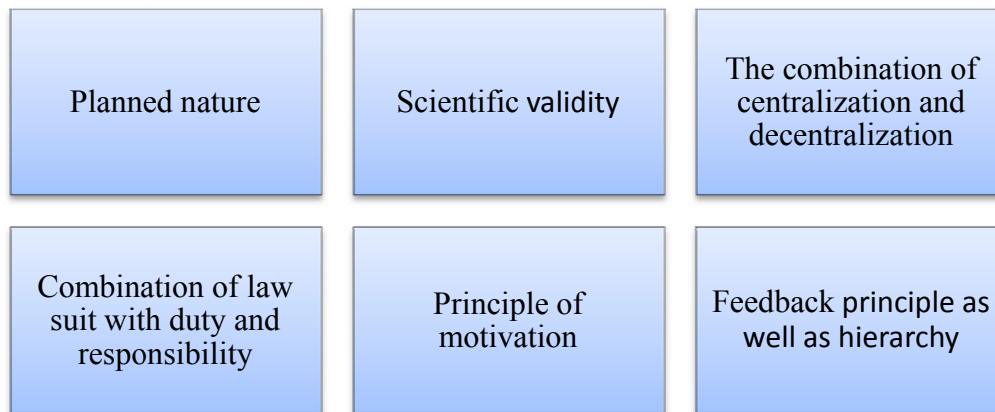


Figure 1 - Principles of personnel management

Note - compiled by the author on the basis of data [10]

According to Figure 1, the principles of organization include the following: communication, employee involvement, feedback to a certain extent, and collective conflict resolution. Along with these principles, there are problems in the personnel management system, which are also transmitted from Soviet times. Problems include: one-sided knowledge of managers, the tendency of a manager to attribute to his employees the qualities of his own character, dictatorship of superiors, authoritarian management, excessive demands on subordinates by the manager, too much of a difference in the salaries of the subordinate and the manager, and a high degree of staff turnover. In Kazakhstan, the term “personnel management” has not yet reached its specific development concept [10].

Kazakhstan has embarked on the path of integration into the global economic space; therefore, it has become necessary to harmonize personnel management methods with international standards and innovative areas. Today, many traditional companies are trying to gain experience in corporate development, achieve success in the management of foreign branches, competently combining the global integration of effective business and local features in management.

However, the prevailing personnel management style in many traditional organizations remains ineffective due to incorrect goals and ineffective personnel policy, inconsistency of the organization’s conditions to the realities of economic development, as well as a weak level of personnel assessment and motivation. Therefore, in order to increase the efficiency of the company, it is necessary to check and monitor the human resource management system in the organization.

At the same time, today, human capital is considered one of the most important elements of an organization’s effectiveness and a key component of competitive advantage. According to some studies, in the near future, by 2020, the national economy’s need for additional labor force in Kazakhstan will increase by about 7%. [11]. By the given circumstances, companies are faced with the task of adjusting the strategy and goals of international human resources management companies in their Kazakhstan branches. As we know, international companies view their strategies and goals on a global scale. However, the success of a company that has branches abroad largely depends on the effectiveness of its branches and the competence of their managers, the effective work of these branches guarantees the survival of the company itself in the international arena.

The current stage in the economic development of the country is connected to a certain extent with the formation of an effective system of personnel management in companies and the development of human resources. One of the urgent problems in the country is the shortage of personnel, because in the country there is a gap in skills and knowledge between two generations, and a “brain drain” in other countries. According to some studies, the leakage of personnel to others is 70%; last year alone, 30,000 of our compatriots left Kazakhstan in search of work to other countries [12].

The improvement of personnel management in Kazakhstan is due to the need to update the organizational and economic mechanisms for managing personnel policy, the need to apply advanced foreign experience in the human resource management system. There is a growing need to develop

methods for the effective use of human resources in organizations, which will help increase the company's competitiveness in the domestic and global markets. Since the low level of personnel training complicates the adaptation of companies to the requirements of forming an effective human resource management system [13].

Attracting foreign investment in the economy of Kazakhstan is associated with the implementation of the development program of Kazakhstan until 2025, therefore, encouraging foreign investment is implemented in different preferences [14]. In turn, investors in international companies are also imposed requirements in the field of human resource management, such as local content, transfer of personnel management technologies and others. If these requirements are not met, international companies may be left without state support. Therefore, HR managers use well-known methods, such as recruiting, assessment of personnel potential; adaptation of expatriates to working conditions in Kazakhstan; monitoring employee performance, managing learning and motivation, managing corporate culture in a company [15]. The above methods require time and cost. According to the results of research, the experience of global international companies shows that the structure and share of the costs of these methods are as follows [14].

Table 1 - Structure and share of costs for personnel management methods

Types of jobs	Expenses%
Development of specialized programs for personnel management, organization and control of their execution	24
Compliance with safety measures and working conditions	18
Labor Relations Management	17
Record keeping and personnel records	10
Training	9
Other types of work	6
Note - compiled by the author on the basis of data [14]	

As we know, personnel management mainly develops targeted programs for human resource management, which includes planning and forecasting the need for qualified personnel, developing training processes, improving the quality of life, improving internal corporate relations, improving working conditions and others. It should be noted that successful international companies achieve significant results due to diversification, cost reduction, high product quality, which is impossible without a regularly developing and effectively built personnel management system [14].

Unfortunately, in some Kazakhstani branches of international companies, personnel management capabilities are limited to a certain extent. There are examples when insufficiently qualified employees work in the domestic branches of international companies, and subsequently their productivity is low and high turnover is recorded. To prevent such situations, the personnel management department needs to recruit specialists on the basis of competitive selection and cooperate with the appropriate educational institutions. These situations lead to an increase in the use of staff outsourcing [15].

Of course, in the long run, this can help level out wages in different countries, however, according to experts, the average wage level in the country where outsourcing is practiced will be lower than in the country where the main company is based. Disclosing the features of personnel management in the domestic branches of international companies, it should be noted that the heads of foreign international companies in Kazakhstan shared that in Kazakhstan, the staff has a low level of initiative in implementing new projects or proposing new ideas, because mostly Kazakhstani workers are not ready to take responsibility and choose to wait for certain instructions from managers. If the branches of foreign company is headed by the managers of an international company, this is evidence of the distrust of foreign companies in the level of competencies and skills of Kazakhstani managers. The features of personnel management of an international company in the Kazakhstan branches are listed in Table 2 [16].

Today in Kazakhstan, labor relations between the employer and the employee are regulated in accordance with the Law of the Republic of Kazakhstan "On Labor in the Republic of Kazakhstan" dated January 1, 2000, as well as individual and collective agreements and approved legal acts [40]. According to the law, the labor relations of the parties are labor relations between the employee and the employer on the basis of individual and collective labor contracts arising from the implementation of certain types of activities [17].



Table 2 - Characteristics of the main parameters of personnel management in Kazakhstan

	Options	Description
1	The degree of initiative of employees	The need to constantly monitor the implementation of tasks. Low degree of initiative and unwillingness to take responsibility
2	Development of competencies and skills	Low level of development of managerial competencies. Interest in learning foreign languages
3	Level of labor discipline	Poor adherence to the established schedule
4	HR management strategy	The core of the strategy is to retain key staff and build a sense of commitment
5	Management of Kazakhstan branches	European top manager
Note - compiled by the author on the basis of data [16]		

According to the results of questionnaires of modern organizations, a comparative description of labor values was developed as shown in Figure 2.

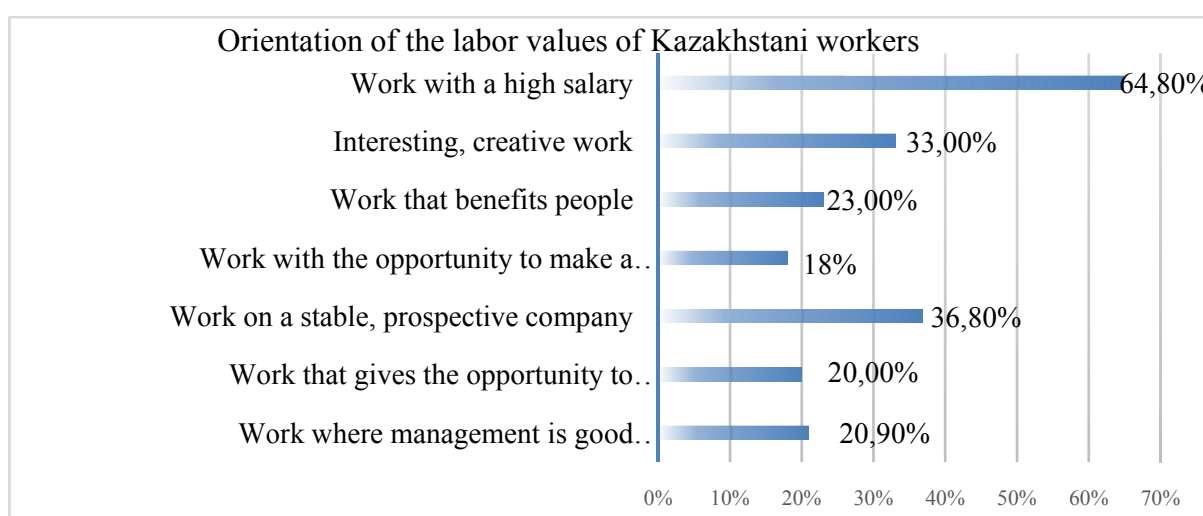


Figure 2 - Orientation of the labor values of Kazakhstani workers

Note - compiled by the author on the basis of data [18]

In Figure 2, it is clearly seen that in market conditions the most significant method of motivation for our compatriots is the high level of wages.

**Conclusion.** Thus, it can be concluded that human resource management in Kazakhstan is still at the development stage. With the dynamic growth rate of many international companies, technological progress and in the context of globalization, the personnel management system will have large-scale transformations. However, it should be noted that in the history of the development of the country, many substantive and strategic changes in the field of personnel management were carried out, therefore it is impossible to unambiguously assess the system of human resource management in the country.

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#### **ПЕРСОНАЛДЫ БАСҚАРУДЫҢ ДАМУ ЭВОЛЮЦИЯСЫ МЕН ОНЫҢ ҚАЗАҚСТАНДАҒЫ ЕРЕКШЕЛІКТЕРІ**

**Аннотация.** Мақалада адам қызметі дамуы мен оның тарихына негізделген персоналды басқару эволюциясының сұрақтары және Қазақстандағы ерекшеліктері қарастырылған. Адами ресурстарды басқарудың дамуы бастапқыда өндірістік революция кезеңі алдындағы шектелген өндірісті аграрлық экономикада дамыған. Әрі қарай дамуы келесі кезеңдерде қарастырылып дамыған: адами ресурстарды басқаруға өзгерістерді енгізіп, «еңбекті ғылыми ұйымдастыру» түсінігінің пайда болуы мен жариялануы, кәсіподақ қозғалысының дамуы және қызметкер мен жұмыс берушінің арасындағы қатынастарына мемлекеттің белсенді араласуы арқылы персоналды басқарудың алғы шарттарының пайда болуы. Өз кезегінде персоналды басқару, даму және жетілу фазаларына бөлінген.

Персоналды басқаруды дамуының Қазақстандағы ерекшеліктері географиялық жағдайына байланысты аталған типтердің бірде біреуіне де келмейді, себебі Қазақстан ұзақ уақыт бойы КСРО құрамында болғандықтан отандық жүйе Азия мен Еуропа мемлекеттерінің мәдениеттерінен құралған, сонымен қатар пост Кеңестік мәдениеттерінің белгілерінен

тұрады. Қазақстандағы персоналды басқару қазіргі уақытта әлі де дамуда. Ескере кететін жағдай, мемлекет даму тарихында адами ресурстарды басқару аясы бойынша персоналды басқаруды әрі қарай дамыту мен жетілдіруге мүмкіндік беретін көптеген мазмұнды және стратегиялық өзгерістер болды.

**Түйінді сөздер:** еңбек, персоналды басқару, адами ресурстар, адами ресурстарды басқару, кадрлар, қызметкерлер, персоналды басқару жүйесі, персоналды басқару концепциялары, еңбек заңмасы, персоналды басқару принциптері

**Б.А. Алибекова, А.М. Бакирбекова**

### **ЭВОЛЮЦИЯ РАЗВИТИЯ УПРАВЛЕНИЯ ПЕРСОНАЛОМ И ЕЕ ОСОБЕННОСТИ В КАЗАХСТАНЕ**

**Аннотация.** В статье рассмотрены вопросы эволюции управления персоналом, основанные на развитии человеческой деятельности и ее истории. Ранее развитие управление человеческими ресурсами осуществлялось до периода промышленной революции, в аграрной экономике с ограниченным производством. Далее по периодам: промышленной революции, постиндустриальной революции, которые внесли значительные изменения в управлении человеческими ресурсами и внесли предпосылки управления персоналом через появление и распространение «научной организации труда», развитие профсоюзного движения и активное вмешательство государства в отношения между работниками и работодателями. В свою очередь развитие управления персоналом разделено на фазы: развития и зрелости.

Особенности развития управления персоналом в Казахстане заключаются в том, что ее нельзя отнести к одному типу, из-за географической позиции, т.к. Казахстан долгие годы был в составе СССР и отечественная система представляет собой смесь культур Азии и Европы, а также признаки пост советской культуры. Управление персоналом в Казахстане на сегодняшний день все еще в стадии развития. При этом необходимо отметить, что в истории развития страны были осуществлены множество содержательных и стратегических изменений в сфере управления человеческими ресурсами, которые дают возможность для дальнейшего развития и совершенствования управления персоналом.

**Ключевые слова:** труд, управление персоналом, человеческие ресурсы, управление человеческими ресурсами, кадры, сотрудники, система управления персоналом, концепции управления персоналом, трудовое законодательство, принципы управления персоналом.

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OF THE DEVELOPING ECONOMY**

**Abstract.** This article examines the features of the unobserved economy, which requires improvement by market institutions and formal legal acts. Having limitations reduces the opportunities for effective use of resources in this area. The scale of the non-observed economy in many respects testifies to the degree of the formation of market instruments in Kazakhstan and the CIS countries. As is known, the non-observed economy includes informal, hidden (shadow) and illegal (illegal) production activities. Improvement of institutional reforms will allow to create an unobserved economy and include it in a single economic turnover, which will allow economic growth and social transformations in the country.

**Keywords:** non-observed economy, informal economy, shadow economy.

An unobserved economy in post-communist states is an important potential resource for increasing production and social progress. The scale of the non-observed economy in many respects testifies to the degree of completeness of the transition period in post-communist countries and the quality of the capitalist economic system that has developed there. The quality and completeness of institutional changes predetermine the nature of economic development.

Unchecked by direct statistical methods, the economy includes informal, hidden (shadow) and illegal economic activities, as well as activities not taken into account due to shortcomings in the program for collecting basic statistical data. The scale of the non-observed economy is mainly determined by sampling surveys and various expert assessments, which leads to a discrepancy between the specific data obtained at different times using different methods. But regardless of the specific values, indicators measured by one method always indicate that in countries with a developed market system the level of the informal economy is lower than in the developing and former socialist states. Official statistical agencies assess only informal and hidden economic activity. Estimates of illegal economy in GDP indicators are not officially included. Although it is possible to determine the boundaries of various types of unobserved economy only conditionally. For example, "hidden compensation for hired workers is determined by the balance method, as the difference between total expenditures for all household needs, including the increase in their financial assets, and formally registered income." [1, p.310] What are the sources of unregistered incomes, it is completely unclear how it is not clear why this is a hidden remuneration of labor, and not other sources. The purpose of this article, however, is not the analysis of methods for determining the scale of an unobserved economy, but the institutional significance of this phenomenon for the development of a market economy.

According to official data of the International Statistical Committee of the CIS in 2015-2016. the share of the non-observed economy in GDP was estimated in Armenia, Georgia, Moldova, Uzbekistan in the range of 29-33%, in Kazakhstan, Russia, Tajikistan, Turkmenistan - 22-27%, in Azerbaijan, Kyrgyzstan, Ukraine - 17-19%, in Belarus - eleven%. [2, p.61] Approximately at the same level, the value of the non-observed economy was estimated in 2015, "from 10% in Belarus to 30% in Tajikistan". [2, p.38] This means that in the CIS countries up to one-third of GDP is an estimated value that is not

properly included in official documents, therefore, not included in the legal system of countries and limitedly included in the reproduction process of the national economy.

In the informal sector of the economy of Kazakhstan, which includes legally unregistered producers, according to some estimates, in 2014, 5.9% of the total number of employees were employed, in 2016 - 18.8% (if in 2014 in the informal sector there were 4 , 1 million people, then in 2016 - already 18.8 million people). In some regions of the Republic of Kazakhstan, informal employment reached 30-40% of the total number of employees. [3, p.37]

The largest part of the adjustments to the informal economy is made in the following spheres of production: production of agricultural products for own needs in personal subsidiary plots of the population; construction and repair of housing and other buildings by households for themselves and to order; production in households of food, alcohol, clothing, footwear, furniture, car and household appliances repair services; small trade in food and clothing markets, including "shuttle" trade; services of private doctors, additional payment to doctors and other personnel of medical institutions; transportation of passengers by individual motor transport; educational services for private tutors and educators. [4, p.4].

As is known, the unobservable economy in the CIS countries, in particular in Kazakhstan, is an essential part of the national economy. Consequently, countries have large monetary, material assets and labor resources that are not equipped with modern market institutions, or even completely outside the norms of the official legal system: registered property, bank deposits, loans, equity, liabilities and assets of the firm. And this means that the means of the unobserved economy are only limited in the national and international circulation of goods, capital and loans. Hence, they can not at the right time get the necessary resources for business development, make the necessary checks to maximize revenues or acquire the necessary technologies and benefits. It is difficult for them to offer their funds, manufactured goods in open competitive markets for obtaining the greatest benefits. Transparent business and impersonal transactions for them are not fully available. Their choice and range of possible alternative solutions is very limited, it is mostly based on personal trust and personalized transactions. Thus, the assets of the unobserved economy are limited in choosing the most efficient transactions and often simply stagnate, instead of making a move in the form of goods and capital. In the informal and informal economy there is money, but it is difficult for them to join the channels of legal national business, there are real estate objects there, but their value can not properly manifest themselves in the market and in the credit sphere, there are a lot of labor resources, but the value of their labor and social security of employees do not rely on the law. Such assets, by definition of De Soto, "remain dead capital locked within the boundaries of the illegal sector." [5, pp. 214]. This is the fundamental inferiority of the unobserved economy, it can not achieve the efficiency characteristic of assets secured and protected by market institutions, the legal system and official registered documents.

To bring the non-observed part of the economy to the "white light" means equipping it with the institutions of the capitalist economy, protecting it by the norms of modern law, through which it will acquire the necessary forces for dynamic development. Complete the transition period from administratively managed to a full-fledged capitalist market economy, and at the same time create conditions for overcoming economic backwardness, will not succeed if a significant part of the national economy remains in the legal shadow, where the institutions "dominate".

The economy needs certain rules, guided by which market agents make transactions with the least risks. In the non-observed economy, accordingly, unobserved institutions are formed, their own rules for recognizing property rights, legality, reliability of transactions and their protection. Institutes of an unobserved economy can function in the formation of illegal institutions. Even worse, when the same institutions guarantee the observance of both legal and illegal institutions, when quite respectable banks, trade establishments, state institutions "launder" "dirty" assets. A significant amount of the non-observed economy testifies to the incompleteness of the institutional construction of a market economy and a democratic society. Not only the economy, but the whole society has an unobserved subsystem of relations. Thus, the unity of the economic and institutional system of society is being destroyed.

Institutes provide transactions of goods and resources of the economy. Transactions, economic agents, bear costs. Legitimate institutions in developed economies, in principle, ensure the greatest cost savings when making market transactions. In an imperfect institutional environment where explicit and implicit institutions play a significant role, economic agents in transaction transactions carry high risks and high

transaction costs. Relatively speaking, economic agents often have to "feed two masters." And this applies not only to those who are in the sphere of the unobserved economy, but also often those who function in the open legal sphere. The non-observed economy is not in closed reservations, in a certain sense it forms a subsystem of a single economy, and somehow interacts with the observed economy. In this case, the interaction of legal and illegal institutions and institutions is more or less.

Agents of the non-observed economy shy away from paying taxes, but still have to pay for being in an unobserved institutional space, there it is necessary to maintain their "roofs" and "authorities". You can, of course, compare the direct costs of functioning in an open and unobservable economy, but it's not just that. The main thing is that the unobserved economy has limited access to legal resources and the benefits of legal protection and, consequently, loses to them in the medium and long term.

The transitional nature of the economy will not be overcome until a significant part of the resources remain in the sphere of the unobserved economy and, accordingly, guided by rules and institutions that are outside the scope of official law.

As already mentioned, the non-observed economy includes the informal and hidden (shadow) economy. As for the hidden economy, we are talking about hiding part of the turnover and revenues from official accounting, that is, it is, by definition, commodity. The informal economy, from the point of view of economic analysis, includes two fundamentally different sectors: subsistence economy and unregistered small commodity production of goods and services. With further analysis of the unobserved economy, let us consider separately, as far as possible, the natural and commodity sector of the non-observed economy.

Non-market, subsistence farming is part of the non-observed economy, accounting for the majority of its informal economic activity. From the statistics of the survey published by the Committee in 2017, 42,200 households follow that in 2016, natural incomes averaged 7.0% of their gross income, in urban families this figure was 4.8%, in rural - 17.2%. In the poorest decile group of rural households, natural incomes accounted for 30.4% of gross income, while in the richest decile group, 11.4% accounted for natural incomes. In general, in the most prosperous decile group of rural households, the amount of in-kind income was 60% higher than in the most dysfunctional decile group.

As is well known in Kazakhstan, two-thirds of the economy of agriculture functions in the informal sector, this state of affairs can not be estimated otherwise than catastrophic. Since most of the resources and production in agriculture exist in an informal form, national and international markets for goods, services and capital are inaccessible to him. In such a situation, serious development of agriculture can not be said.

The data of the Interstate Statistical Committee of the CIS countries show the significant importance of subsistence farming in the CIS countries and its further expansion. "Due to the significant growth in the number of individual entrepreneurs and the increase in production in personal part-time households for self-sustainment, there has been a steady increase in the production of gross value added by the household sector, and now in Kyrgyzstan they produce more than half of the gross value added, in Azerbaijan and Tajikistan - more third" [2, pp. 13] Strictly speaking, self-sufficient households do not produce any added value. Here we are talking about estimating the volume of production equivalent to the added value.

Indirect evidence of a high level of conservation of subsistence economy in transition economies is the relatively low level of wage labor in the total number of employed. In 2015, the proportion of self-employed people in the total number of employed in Azerbaijan was 66.2%, in Kyrgyzstan - 59.2%, in Tajikistan - 49.1%, in Armenia - 48.3%, in Moldova - 37, 0%, in Kazakhstan - 36.1%, in Poland - 27%, in Ukraine - 18.2%, in Kazakhstan - 7.3%, in Belarus - 6%. For comparison, the percentage of such persons in the US, Norway, Sweden was 7-10%, in Great Britain, Germany - 12-14%, in Canada, Japan - 15%, in Mexico and Turkey - 38 and 49%, respectively. [2, pp. 25, 322-323] During the reform period, the share of wage labor in the total number of the able-bodied population declined in all CIS countries. A high level of employed wage labor is a characteristic feature of developed capitalism. In all the CIS countries, the share of wage labor in the total number of employed population decreased during the period of market reforms. Assuming that the level of labor marketability is one of the most important criteria for the development of capitalism, the dynamics of wage labor testifies to the weak institutionalization of capitalism in a number of CIS countries.

It is known that natural production is an important segment of the economy, and it needs serious attention of society and power structures. Natural production is a controversial object of economic

analysis and a complex sector of reform. First, in modern society it is an object of private property, that is, it is within the framework of law. Secondly, this is informal production, that is, it is not properly equipped with legal institutions. Thirdly, this is a non-manufactured production, thereby it represents the economy of past eras, does not receive a single market monetary estimate. Fourthly, this is a non-capitalist production, its assets are not capital. Fifth, subsistence economy serves as a kind of shock absorber, mitigating the negative consequences of transition economies. With a relatively low level of incomes of the population, the natural nature of production is maintained, both through full and part-time employment. With low incomes for hire, relatively low pensions and benefits, people are trying to supplement their income through additional efforts, producing natural goods for their own needs. This concerns not only food, but also construction, repair, consumer services.

The natural sector of the economy in transition economies is wholly and completely related to private property. There are no privatization problems here. Private owners have all the rights corresponding to this status, but do not realize them in the system of market relations and capitalist production. Here, private owners are neither commodity producers, nor capitalists, nor employees, nor employers. They own the means of production, property, but do not own capital.

Natural economy in the modern market economy is, first of all, the production of households for own end use. In this case, the organization of production activities, consumption of production products, the accumulation of material goods are not included in the market exchange. The exchange of material goods and services between subsistence farms is also partly realized in kind. In-kind payment of hired labor, rent can be made.

Production and consumption in the natural sector of the economy is not mediated by the national market, is relatively closed in separate economic cells. It itself is not a kind of integrity, is fragmented. Economic cells interact weakly with each other and with the national market. The product of production is not included in the circuit of the national economy, does not receive the public form of the goods. Therefore, it does not have a single measure of value. The factors of production do not have a single monetary estimate: labor, tools and means of labor, land. In this case it is impossible to estimate the costs and results of production, determine the effectiveness of a subsistence economy.

Laws of the market in subsistence economy do not work and can not be its regulators. The monetary instruments of state regulation can not have a significant effect on their state. The natural economy exists as if by itself, outside of time and the economic system.

The products of production, the ownership of subsistence farms do not have the generally recognized symbolic forms of capitalist wealth, are not reflected in the number of signs of value, are not reflected in official documents in the form of money or financial instruments: debt obligations, claims, loans, bills, mortgage bonds, lease contracts, rental payments, mortgage, shares, bonds, etc. Guided by the logic of Hernando de Soto, it can be said that the assets of a subsistence economy can not be turned into capital, and thereby gain its strength and dynamics of development.

The natural economy in many countries with developing economies represents a huge potential for development resources, which remains beyond the scope of market reforms, is not included in the process of capitalist economy formation. As long as subsistence economy remains an essential part of the economy of transitional societies, they can not include it in the social process of capital reproduction, impart a dynamic character of development, and doom themselves to an eternal backwardness. The transitional nature of the economy and society, in this case, lasts infinitely long, using the terminology of R. Kapelyushnikov, we can say that subsistence farming is an element of a permanently developing economy.

Occupied by subsistence farming, they drop out of the active part of civil society, the political process, they can not be a support for the development of a democratic society. All this is alien to them and can be perceived not only indifferently, but also hostile, as a threat to the established way of life. At the same time, they can be manipulated, they tend to perceive the most incredible ideas, to follow the skillful "puppeteers" anywhere. Authoritarian regimes easily gain public support in natural societies. Their relationship with the authorities is not mediated by the laws of the market, the power of money and the rule of law, the rule of law for them does not matter. They do not possess the dignity of an independent commodity producer, the owner of capital. They perceive power in its physical form, as an inevitable part of personified relations. Relations "by concept" for them are a natural form of collective being. Pothole,

nepotism, clan character of relations, admiration, fear, obedience to the power of any level for them is a natural state.

And yet, subsistence farming is a part of the national economy, it is the source of labor resources, which, one way or another, are in all spheres of the economy and society. As a result, all economic, social, political structures and relations of transitional systems are less or more, are imbued with the way of life of natural societies. Reformers trained in the latest theories created in developed democracies and market economies, proclaiming radical economic and social transformations, using the rhetoric and vocabulary of the newest political and economic trends, in fact "go their own way," reproducing the way of life at the political, economic and even everyday level traditional societies. There is a mutation of all forms of political and economic life. In the form of a president - in fact a leader, in the form of a joint-stock company - in fact a clan, in the form of a charitable society - in fact a form of legal corruption, in the form of a gift - in fact a bribe, instead of law enforcement bodies, personal protection bodies, etc.

Countries with developing economies should have special programs to overcome the nature of production, this is a fundamental issue of development, economic and social renewal of society. This task is much more difficult than, for example, to privatize state property. The long-term system of measures, the complex of state measures designed to overcome the natural character of the economy, to give it a commodity form and content, to open up the possibilities of capitalist development, and to include it in a single national economic process of production must be consciously developed here. This work is done to some extent by the market itself, but without the conscious activity of state power, as is evident from the example of developing countries, this process can last for centuries. In addition, market forces can be devastating. In many countries with the developing economy, there is simply the destruction of the rural economy, the desolation of villages, the withdrawal of young people to the cities. The task is to breathe new life into obsolete forms of management, to include them in the national economy as producers of goods, to hold, if one might say so, the capitalization of traditional societies.

A very important role for small peasant and farm economies in developed economies is played by cooperatives and the specialization of production. There are no diversified small farms. Each farm is included in a single national economic process through a system of cooperatives, contractual relations, state guarantees and state regulation of conditions and volumes of production, quotas, specialization through commodity-money and credit relations secured by land, dwellings, crops, livestock and other property. This is not so much spontaneous, as consciously directed process.

It seems that in countries with developing economies, natural production is beyond the attention of society and power structures. Meanwhile, this is a huge economic resource, which is used very primitively, as it is excluded from modern commodity capitalist production and market institutional system. Natural production is not only a testimony, but also a condition for the relative underdevelopment of countries with a developing economy, as well as for all developing countries.

The hidden (shadow) market economy includes the shadow and partially informal sector of production of goods and services, both in the sphere of large and small businesses. The hidden economy accounts for about half of the non-observed economy. The shadow economy takes place in legitimate and accessible spheres of production, and is a deliberately hidden part of turnover and incomes from the official state registration in order to evade taxes, social insurance contributions, evasion of compliance with the standards, norms, and administrative procedures prescribed by law. Production in the informal sector includes an unregistered unincorporated sector that produces market products and services.

Informal "gray", shadow deals in countries with a weak legal system, in particular in Kazakhstan, constitute a permanent element of the official legal business. Therefore, "the very division of the economy into" one hundred percent legal "and" shadow ", according to GA Yavlinsky, looks not quite correct." [6, p. 92]. Shadow operations include "direct" unaccounted for ", overstating costs, concealing incomes, carrying out certain operations under the guise of others, creating" one-day "firms, incorrect use of internal zones of preferential taxation and transfer prices," customs clearance "for fake documents, payment of fictitious consulting services, all kinds of "gray" salary schemes and much more "[6, p.92] Although the informal economy in a number of countries with the developing economy is 20-30% according to official data, but as a legal, open economy" sin "deals, then the informal economy includes much more business structures, according to some data in Kazakhstan, for example, this figure reaches 50-60%.



"At present, the shadow economy should be viewed as a powerful social and economic factor that has a serious impact on all aspects of society. The shadow and official sectors of the economy are tightly intertwined, and it is pointless to consider them in isolation from each other." [6, p.20]

The state structures, the bureaucracy itself, are included in shadow operations, there are so-called "shadow" taxes, a well-known practice of "kickbacks" when concluding deals. "In such areas as public procurement, construction contracts, leasing of state and municipal property, transparent and disinterested relations are encountered only in the form of misunderstandings." [6, p. 111]

To produce products in the informal and informal sector makes sense if it can be realized in the same sector and receive hidden revenues, shadow profits and labor incomes. Shadow production generates shadow construction, shadow transportation services, shadow trade and the shadow banking sector. On the whole, an illegal subsystem of the reproduction process is being formed. In all phases of the reproduction cycle, in all sectors of the economy there is an official and shadow economy. [7, pp. 18-31, 8, pp. 12-22]

The large illegal sector of the economy is supplemented, and sometimes generates, the illegal activities of small and individual manufacturers of goods and services in the field of repair and construction of housing, repair of household appliances, dwellings, small trade, transport services, health care, education, culture, recreation, tourism.

The hidden shadow market economy by definition is illegal, although it is carried out in the legal spheres of business. Consequently, it can exist only with the permission of law enforcement agencies, tax services and other bodies of official authority. Representatives of the official authorities are accordingly rewarded for their services, do not see anything, hear nothing, do nothing. So the shadow market economy forms an interlayer of law-abiding citizens, who are selective to laws. What is profitable, it is legal. According to the official statistics of Kazakhstan, the share of hidden payment for wage labor in the total wage is 25% and is more than 12% of the country's GDP. This means that millions of both hired employees and entrepreneurs are involved in the informal sector of the economy. Opportunism becomes a moral, ethical norm of behavior in society. Evasion from laws by a large part of society is not condemned, and sometimes considered valor.

From the point of view of economic efficiency, this means that a certain part of the economic potential, income and property, and in some countries with the developing economy, a very significant part, is outside the legally recognized rights and titles of property. That transactions here are purely personal, confidential, officially not registered, not taken into account, not protected. This business can not get proper public evaluation, it is difficult for it to get involved in the financial turnover, to acquire the strength and effectiveness of the traded and officially recognized titles of property and securities. Thus, the potential of the shadow economy can not unfold in full force and, on the whole, negatively affects the efficiency of the use of existing factors of production.

Since the shadow economy captures the public sector, it is very difficult for a legal and law-abiding business to carry out its activities, as it too has to "unfasten" part of the proceeds or "to feed" officials, or to so-called charitable purposes and various public needs. Thus, production, transaction costs increase and in official documents should be formalized as expenses for other purposes. The shadow economy penetrates into all spheres of business, as an additional element, and sometimes the condition for the existence of an official economy. This, again, reduces the effectiveness of the use of available resources. In addition, not everyone can do business in such conditions, many people shy away from such an opportunity, which reduces the entrepreneurial potential of the society. It is no accident that in some countries with the developing economy there is a very weak founding activity, a weak dynamics of entry and exit from the spheres of business.

Somehow, the shadow economy brings real benefits, someone does not understand the losses that are incurred while in the sphere of informal activity, someone is not able to evade the "gray" and "black" deals, but in general for the national economy, the losses are much more than benefits. The point is not only that the level of tax collection decreases, it is a matter of incomplete and not quite effective use of existing material and monetary assets that can not fully turn into modern forms of legal business, join the national and world economy in modern forms of capital. "Shadow" operations, "shadow" revenues do not have a long-term sustainable perspective, somehow the participants of the shadow schemes consider them as temporary, or the rules will change, or the actors will change. Hence their incomes and resources are



very weakly included in the legal economy. In developed economies, the unregistered market economy occupies a very modest place.

In an open legal economy, market laws are more fully manifested. First, as already mentioned, the subjects of market relations have more choice, greater access to resources and more options for decision-making, which ultimately has a positive effect on the effectiveness of transactions. Secondly, competition and openness of entry and exit from the economic process leads to the most equitable distribution of the produced product between labor and capital, between owners and managers, between creditors and debtors. In other words, in an open economy equilibrium markets are more intensively formed, since there are fewer obstacles to the movement of labor and capital resources. Thirdly, the illegal economy, by definition, is personified, burdened by personal dependence. The more market economy is burdened with shadow results, the more difficult it is for it to reveal its potential, to turn resources into efficiently operating capital.

So, the shadow economy is a private economy sector dominated by private property, it is a market economy that somehow evades official registration of transactions, official registration of income and expenses, payment of taxes and other mandatory payments, incomplete registration of property rights. The task, therefore, is to take this part of the market economy as completely as possible out of the shadow and reveal its creative potential. For this, first of all, it is necessary to take advantage of the experience of developed countries with a market economy, what institutions, rules and procedures exist there that nullify the shadow economy. To begin with, it is necessary to achieve a clean accounting of transactions, income and expenses in the sphere of large and medium-sized businesses. The difficulty, maybe, is not so much in business as in officials and state services that are accustomed to fueling through illegal incomes. They need to undergo the procedure of self-cleaning, and this is very difficult, almost impossible, without a developed democratic system.

As for illegal (criminal) business, its scope is entirely determined by how well the state government is, how effectively it is able to perform its functions to protect the rights of the individual and society.

In general, for all types of non-observed economy, limited contacts, a relatively narrow circle of exchange, and, consequently, incomplete use of the possibilities for choosing the most effective solutions are typical. When concluding contracts, the choice is made not in favor of the most effective, but the safest transactions. In principle, not all kinds of market transactions are accessible to the shadow economy. An unobserved economy bears enormous transaction costs and thereby exacerbates its own development opportunities. The non-observed economy goes not only from taxes, but also from standards of quality, safety, damaging public welfare. The costs of an unobserved economy are borne by the whole society. An open economy is forced to bear an excess tax burden, society must take upon itself the neutralization of damage caused by an unobserved economy.

An unobserved economy is a huge reserve for the effective development of countries with developing economies. It can be used, first of all, by improving the institutional foundations of a market economy and the democratic foundations of the state system. It is necessary to complete the formation of a single market and institutional space of the social and economic system.

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#### **БАҚЫЛАУСЫЗ ЭКОНОМИКА ДАМЫҒАН ЭКОНОМИКАНЫҢ БӨЛІГІ РЕТІНДЕ**

**Аннотация.** Мақалада бақылаусыз экономиканың ерекшеліктері қарастырылады, ол нарық институттары және формалды құқық актілерімен жетілдіруді талап етеді. Бар шектеулер бұл саладағы ресурстардың тиімді пайдалану мүмкіндіктерінің төмендетеді. Бақылаусыз экономиканың масштабтары көп жағдайда Қазақстан және ТМД елдерінде нарық құралдарының құрылған дәрежесі туралы куәландырады. Белгілідей, бақылаусыз экономика формалсыз, жасырынды (көленкелі) және заңсыз (астыртын) өндірістік әрекетті қосады. Институционалдық өзгерістерді жетілдіру бақылаусыз экономиканы шығаруға және оны біркелкі шаруашылық айналымға қосуға мүмкіндік береді, ал ол еліміздегі эконономикалық өсу мен әлеуметтік өзгерістерге жол ашады.

**Түйін сөздер:** бақылаусыз экономика, формалсыз экономика, көленкелі экономика.

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### НЕНАБЛЮДАЕМАЯ ЭКОНОМИКА КАК ЧАСТЬ РАЗВИВАЮЩЕЙ ЭКОНОМИКИ

**Аннотация.** В данной статье рассматриваются особенности ненаблюдаемой экономики, которая требует совершенствования рыночными институтами и формальными правовыми актами. Имеющие ограничения снижает возможности эффективного использования ресурсов, находящихся в этой сфере. Масштабы ненаблюдаемой экономики во многом свидетельствуют о степени образования рыночных инструментов в Казахстане и в странах СНГ. Как известно, ненаблюдаемая экономика включает неформальную, скрытую (теневую) и незаконную (нелегальную) производственную деятельность. Совершенствования институциональных преобразований позволит вывести ненаблюдаемую экономику и включить ее в единый хозяйственный оборот, что позволит экономическому росту и социальных преобразований в стране.

**Ключевые слова:** ненаблюдаемая экономика, неформальная экономика, теневая экономика

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## **REGIONAL SPECIFICS AND DIRECTIONS OF THE AGRICULTURAL PRODUCTS EXPORT IN TERMS OF THE ECONOMIC INTEGRATION**

**Abstract.** This article reviews regional specifics of the economic integration performance and directions of the agricultural products export. It includes characteristics of distinguishing specifics of the regions, forms and types of economic integration, main principals and suggested measures on improving them in the regional aspect taking a certain rice planting region as an example.

**Key words:** economic integration, regional specifics, forms (stages), seasonal character, production and sales of the agricultural products, agricultural formation, rice companies, criteria and indicators of efficiency, methods and assessment of cost indicators, perishable products, stability of functioning, agrarian sphere, agro industrial production, bordering areas, organizational management mechanism of controlling sales of agricultural products.

### **Introduction**

In the modern conditions it is critically to resolve an issue of food security in any country. On the one hand the full provision of some types of own agricultural products to population increases exporting possibilities of the country, but in this case a specialization of separate regions in respective kinds of agricultural products is required. That is why it is necessary to define strategic aims of the regions for increasing export potential and possibilities of regions as well as for the implementation of competitive advantages in one or another agricultural product.

For the agricultural industry in terms of market economy the most important problem is a sale of manufactured goods. This problem did not take place in the period of planned economy – as there were governmental orders and respective procurement orders permanently regulated by the government depending on the status of economic development. Without sale of agricultural products the agrarian sphere is “a kingdom of peasant relations”.

That is why the control of sales in agricultural industry becomes a topical issue in any region and impacts on financial condition of agricultural formations and return of funds into the budget. The forms and methods of control in the agricultural industry are defined by empiricism taking into account the external and internal reasons. To a large extent it is an organic combination of forecasts and the market itself.

Today the agricultural industry in the regions suffers difficulties as the control system itself was not totally adapted to the market. This situation of agricultural industry control system obstructs the ultimate goal that does not define optimization of the structure of food market not mentioning about price parity that affects on the structure of production. In this aspect one cannot refer only to disparity of prices, the deeper meaning is in an every-increasing difference between the purchase and the consumer or retail price.

At the same time the government’s control and financial support do not define priorities in development of one or another kind of agricultural product, vice versa it tends to complete subsidization without taking into account the scale of the industry and specifics of the spheres that do not motivate labor efficiency and strengthening of material and technical base of agricultural formations.

At the same time the financial capacity of agrarian goods manufacturers does not improve, and intermediaries get the highest incomes rather than agrarian goods manufacturers. It is the intermediaries

who get the maximum profit due to big variation between the purchase and retail prices. The first one grows slower than inflation, and the second one grows much faster. At the same time the legislative power by initiative of the government of Republic of Kazakhstan subsidizes the agricultural industry or has a certain interest in entering into an agreement between authorities.

In the regional aspect the government gives some rights to the local executive bodies which additionally finance various branches of the agrarian industry. Thus at times export commitments taken by authorities towards other countries are not performed. All this defines the necessity to take into account the requirements of regional peculiarities and direction of export of agricultural products in the terms of economic integration and globalization of national economics. Given this the subject of the article has an actual meaning and defines respective novelty of proposals on improving of reviewed problem at the regional level.

#### **Scientific novelty.**

This article offers different opinions on effectiveness of the agricultural industry, that, if taken into account, allow for increasing the export possibilities of the relevant regions. Along with that it is proposed to take into account the regional peculiarities and directions of exporting agricultural products in the terms of economic integration that may include the corresponding criteria such as organizational-management, organizational-household, organizational-technological, organizational-technical; specific; market. Besides, one of the key elements of the integrated development of the region is adherence to these criteria by business entities that may include such features as interpenetration and interlacement of national production processes; deep structural changes, taking place in economics of regions; necessity and purposefulness of control of integration processes in regions; formation of regional structures at the different levels.

#### **Main part.**

In terms of the market economy system, the key problem of agricultural products and consumption goods, produced in the agrarian sphere and in the processing spheres of agro industrial production, are food products, demand in depends on the economic, social, historical and physiological factors and mentality of population. Unlike industrial products, agrarian products are consumed almost daily, and manufacturing of production means has mostly seasonal character and depends on bio technical, physiological, agro technical and veterinary specifics of animals and types of plants. Eventually all of these set duration of the production cycle which in comparison with industrial production is mostly related to the calendar year. On the other hand, products of the agrarian sphere are considered as perishable products which additionally require production expenses for storage, processing, refining, transportation and sales increasing expenses of production of these products.

Another distinguishing peculiarity of the agrarian products is comparative homogeneity and standartization of the manufactured products, characterized with various properties including physical (durability, size and form); chemical (content of protein, gluten, fats, sugar, starch and etc.); biological (level of contamination with pests, disease, content of micro organisms, nitrates and etc.). Combination of these properties determines suitability of the products, possibility to satisfy the needs in accordance with the designation, characterizing various qualitative properties, distinguishing specifics from other types of similar products, demanding to consider technological specifics during processing, storing and transportation of the products of agro industrial production.

If speaking of regional specifics and sales of the agricultural products in terms of economic integration, it is necessary to note efficiency of the work performed in the region. In addition many researchers have studied the issues of efficiency of the agrarian production and sales, including representatives of the classic market economy.

Currently there are many concepts related to the sales of the agricultural products, and also methods and assessment of cost estimates of the financial economic indices of the company activity. So, P.Heine made stress on that “efficiency is the result of using the means to achieve the goals” [1].

In order to ensure the domestic consumer market and the export of agricultural products to foreign markets, the availability of cultivated areas and their rational and efficient use are of paramount importance, as can be seen from table 2.

Table 1 - Sown area of major crops in the Kyzylorda region  
(thousand hectares)

Indicators	the years				
	2013	2014	2015	2016	2017
Total sown area	157,5	158,3	167,8	168,1	181,2
including: cereals	79,3	87,1	87,1	6,6	97,7
of them: rice	74,0	81,1	84,2	80,3	90,8
wheat	3,5	4,1	2,0	5,5	5,1
barley	0,1	0,6	0,1	0,2	0,4
oilseeds					
barley oilseeds	1,9	0,9	6,0	6,2	6,8
potatoes	7,8	5,5	4,2	4,3	4,4
vegetables	6,3	4,8	4,7	4,8	5,0
melons and gourds	8,4	7,6	6,5	7,2	7,3
feed crops	-	52,4	0,1	58,6	60,1
Welcome - Data of the department of statistics of Kyzylorda region					

The decrease in the sown areas of agricultural crops is influenced by, first, the lack of seed material, secondly, the lack of financial resources and agricultural equipment, thirdly, the lack of irrigation water in some years, fourthly, the inability to clean up Years of land that are overgrown with reeds and shrubs, fifthly, are not the development of a scientifically based strategy for the development of farms themselves for the long term. Some scientists believe that it is important to compare obtained results with the expenses made. At that the effect as per unit of cost shall be compared which is important during macroeconomic assessment of the conducted agrarian policy of the state on one or another types of agricultural crops.

However, many other researchers, particularly G.Emerson believes that even having enough natural resources, it is possible to lose national efficiency due to their irrational and non-efficient use, which characterizes limited resources used for production purposes [2].

By agreeing with arguments of these researchers, it is necessary to note that assessment of efficiency of activities on macro and micro level shall be reflected by means of uniform criteria and indicators of efficiency when in any case efficiency of the used resources and their feedback should be considered. According to some researchers, it is required to set up an effective organizational management mechanism of strategic partnership in the concept of marketing strategy when performing economic integration of the regions [3].

At present time, the key problematic issues are controlling the whole cycle of production process, which includes mutually related and mutually supported stages of supply, production and sales of the final agro industrial products [4].

One of the main indicators characterizing activity of rice agro-industrial complex is a gross product of crops, that is, we can see these figures in the table below:

Table 2 - Gross product of main crops of Kyzylorda region (tons)

Indicators	the years				
	2013	2014	2015	2016	2017
Cereals and legumes after processing	295180	323826,8	368637,1	404872,9	447545,3
Including:					
the rice	288683	316705,5	364025,3	393787	436743
The crayfish	1710	996,6	1344,9	4679,7	1654,8
Autumn Wheat	800	2550,1	824,3	3582,9	6112
cell	120	103,6	64	212,1	184,7
masculine cultures	750	591,8	5074,6	4223	4795,5
potatoes	124140	71786,7	56915,9	61069,1	60050,3
podsolnwx	310	151,7	129,2	183,1	311,6
owl	107970	70221,5	72902,8	80310,2	82686,4
Garden goods	155360	122721,1	116933,6	136180,9	136632
vinograd	190	142,9	280,9	299,8	302,1
Fruit and berry crops	1170	924,8	1632,2	1506,7	1506,9
Welcome - Data of the department of statistics of Kyzylorda region					

Nowadays, improvement of the efficiency of the agricultural products sales, including rice, becomes important for the Aral Sea rice planting areas and requires elaboration of relevant sales policies for operating agro formations of the region. Unfortunately, presently small and medium farms cannot successfully compete at the agrarian or other market due to high production expenses. Therefore, when setting up a strategy of further development of rice planting local executive authorities shall consider specifics of planting this crop and create priority for the large cooperative forms of planting, in order to improve efficiency of using existing resources and returns of the investments.

Experience shows that the most efficiently operating large rice planting companies in the agrarian industry are those which have large areas of rice seeding and rice crops rotation, and which can successfully invest financial current assets and successfully resolve social issues of the personnel. Meanwhile there are rice planting companies operating in the region which include rice planting agro formations, companies processing brown rice and selling white rice, also companies dealing with marketing only.

The largest rice planting companies dealing with the full cycle of cultivation, processing and sales of rice are: “Abzal & CO” LLP, “Arai Agro” LLP, “Dikhan” LLP, “Zhana Zhol” LLP, “RZA AGRO” LLP, “Zhagan Zher” LLP, and rice marketing companies are: “Baidala” LLP and others. Profitability of these rice planting companies and various medium and large agro formations inside these companies differs based on the level of economy management which reflects on stability of agro formation functioning and on the level of social economic development of the rural areas where they are located in.

Unfortunately, many rice planting small and medium companies are not able just to resolve sales functions, but also to timely finance the current capital, not even mentioning consolidation of the logistics base and timely performance of agro technical actions. At the same time it should be mentioned that there is a lack of qualified personnel, material and financial resources, high wear of the main production funds, low prices for products and many other problems which require improved control of activities of the rice planting objects.

Scientific researches of many authors as N.P.Alexandrov, A.I.Bodak, V.V.Grigoruk, R.O.Dzhibabov, G.M.Duisenbiev, A.S.narynbayev, K.L.Obolensky, V.A.Tikhonov, Y.V.Shumatbayev, M.I.Sigarev and others were dedicated to the matters of agrarian products marketing challenges. In their works these authors focus on formation and improvement of the system of the agricultural products marketing, market infrastructure, problems of improving the form of selling agricultural products. However the aspects of controlling sales activities of the agro formation reviewed by them are of local character and do not allow to provide for complexity and consistency of the approach how to resolve the problems of marketing control in the sphere of agro industrial production.

The efficiency of agricultural products marketing control in the regional aspect under conditions of severe competition determines optimization of all agro industrial production activities in order to gain and preserve the required segment or a niche of the agrarian market, to achieve superiority over competitors, including complex activities of the agro formations and rice planting companies.

In the regional aspect special mention should go to principles and methods of the agrarian products marketing which is a task-oriented process of production and supply of the ready product to the end user, including transportation, processing till commercial standards, storage, execution of contracts with consumers [2].

If speaking of the regional specifics and directions of the agricultural products export in terms of economic integration, we believe the following distinguishing features should be noted:

- organizational administrative
- organizational economic
- organizational technological
- organizational technical
- specific
- market.

“BRUMA.RU” encyclopedia gives the following definition of economic integration term: (integration, integratio translated from Latin means - restoration), i.e. it defines interrelation and mutual adjustability of the national agricultural economies of various countries leading to their gradual economic merging. At that economic integration can be national and international [5].

In the Online dictionary – Financial dictionary – this definition is described as the highest stage of international division of labor, process of development of deep and stable mutual relations of the groups of countries based on conducting or agreed international economy and policy. Whereby the economic integration includes merging of reproduction process, scientific cooperation, creation of close economic, scientific production and trade connections with their various forms. So the second suggested definition is the one which completely discloses the meaning of economic integration [6].

The financial dictionary gives the following definition of regressive integration: “acquisition of ownership or setting under strict control by the company of a system of own supply chain”.

The same financial ONLINE dictionary gives the following definition of this term: combination of several subsequent stages of production or marketing, arranged vertically in one company, while the last stage (for example baking bread) is being combined with the initial stage of production (for example flour milling process), i.e. integration is performed in chain order. At that the purpose is to reduce expenses and to ensure guaranteed supply of resources [7].

In the modern economic dictionary this term has the following definition: integration during marketing when company tries to bring under command and control its suppliers [8].

Comparing these definitions to the term of regressive integration, we can say that during economic integration it is required to apply all the peculiar elements and tools, not telling about variety of the integration itself under conditions of having benefits from them.

At the same time economic integration shall be reviewed at the level of economy of the countries and between companies, firms and corporations. While economic integration appears both in expansion and deepening of the production technical connections, in joint usage of resources, combination of assets, setting favorable conditions for each other to perform economic activities, and elimination of mutual barriers.

Under world globalization, economic integration has its positive and negative sides, considerably affecting development of regions inside any given country and identifying possibilities of regions to expand the markets and attract various external resources, not speaking of international separation of labor, demographic situation and development of the national economy.

These days when Kazakhstan has established open national economy, created favorable conditions for agro industrial production in order to integrate with the world community, which requires to consider regional specifics in terms of the self management and self financing, making it possible to improve the common national effect based on observance of the international norms and rules adopted by participants of the integration process.

When performing economic integration it is important to follow the forms (stages), which include the preferential zone, zone of free trade, customs union, Eurasian Economic Union, common market, Shanghai Cooperation Organization, Work Trade Organization, full integration. Relatively forms (stages) of the economic integration require from the agricultural production objects of the regions to follow regulatory legal acts adopted by these international organizations, also rules of trade in effect in any given country. Also, nowadays internal integrations in the national economy of Kazakhstan, as well as between CIS countries, get widely spread. In particular, in recent years external integration between regions was developed in Kazakhstan and neighboring Russian Federation, when the neighboring oblasts of these sovereign countries perform economic integration. An example of such economic integration is integration of North Kazakhstani and East Kazakhstani Oblasts, also West Kazakhstani and Aktobe Oblasts with neighboring Omsk, Tomsk and Kemerov, Orenburg Oblasts of the Russian federation. Such practice allows to expand and deepen production technical links, to mutually use resources, to combine assets and successfully keep trading operations based on the favorable conditions by eliminating mutual barriers.

While economic integration may impact on not only certain regions or countries, but also on low-level production structures as firms, companies, corporations and agro formations of various agricultural spheres. In this term we believe it is required to perform economic integration between regions of the neighboring countries more deeply considering specialization of these regions. For example the main rice planting region of Kazakhstan, Kyzylorda oblast, may successfully perform economic integration with rice planting region of Krasnodar area of Russian Federation. Such practice will allow to widely apply mutual possibilities of these regions, more efficiently use production potentials of the agro formations, and implement advanced technologies and units in the sphere of rice planting of Kazakhstan. Today Kyzylorda oblast purchases rice seeds in Krasnodar region of RF. Similarly it is required to expand economic integration of the region with the rice planting regions of the neighboring Republic of Uzbekistan which will allow to improve production possibilities for agro formations and scientific institutions in implementing advanced experience in producing rice.

One of the main terms of integration development in the region is observance of the attributes by business structures, which may include:

- interpenetration and interlacing of the national production processes;
- deep structural changes which take place in the economy of the regions;
- requirement of regulation of the integration processes;
- establishment of the regional structures at various levels.

Implementation of economic integration processes in the agro formations and business structures of the region is possible in case if developed marketing infrastructure is established, such as communications, transport, motor and railway roads and others. In Kazakhstan under conditions of development of the local self control and self provision of the regions there was a political and economic base set, but it is required to strengthen the legislation of this area, to accept state programs, to develop relevant tools of regional economic policy.

Development of the market relations in terms of world economy globalization requires, first of all, development of interregional market and informational space in regions. Secondly, spatial dispersion of the elements of production forces requires expansion of the production, trade and other relations. Thirdly, consolidation of the state support in the sphere of irrigated agriculture requires improved efficiency of using land and other production and material resources. Fourthly, it is required to conduct agreed interregional structural, investment, social, external economic, financial loan, ecological and scientific technical policy which will consider specifics of the development of regions, diversification of the production to provide for stable development of agro industrial production and solution of the production safety in the country and certain world geographic regions. At that development of the national economy of Kazakhstan at present stage shows that despite of world economic and political crisis, the country has concentrated the required capital which needs rational and careful use by joint efforts of the regional authorities and business structures. Overall this will assist in improving the economy, the welfare of population and strengthening the competition in the world market.

If we say about economic integration, we should not forget about regressive integration which is specific for the marketing sphere; it allows the business structures to bring under their command and control its suppliers, or it is specific to the economic freedom of the market relations. Nowadays with wide propagation of corruption and confederacy, which is typical for the market economy, it is required to strengthen management and control functions in various operations not only while selling agro industrial products, but also during establishment of the production process itself.

Differences and directions of the agricultural products export in terms of economic integration are also represented by markets. Meanwhile the agro industrial products of rural producers can be sold in five types of markets: consumption, industrial, market of intermediate sellers, market of state institutions (market of social products) and international. As agrarian production has features of free competition market, they are characterized with multi-industrial character, spatial territorial dispersion and variety of the supplied products, which clearly reflects oligopolistic and in some cases monopolistic markets of the first and third spheres of the agro industrial complex.



Researches show that currently the marketing management in the regional scale is the weakest chain of the agro industrial companies which causes large losses of products and profits. The problem is imperfectness of the pricing process, poor infrastructure, lack of required information about state of the market, weak state private partnership, non-compliance of information on prices of the state statistics bodies and others.

At the same time the rice planting region of Kyzylorda oblast has large opportunities to increase sales of agro industrial products, as actions taken by the state on development of the infrastructure opened large opportunities for transportation of the products on vehicles into various regions of the country. Also convenient location of the Aral Sea Region in Kazakhstan with railway transport should be noted as it improves export capabilities of the region. In this aspect on the regional level it is required, first of all, to focus the agricultural production on demands of consumers, to enhance the tactics and to determine the marketing strategy by means of state regulation of this sphere; secondly, to ensure consistent and complex approach to the process of production and sales issues resolution, to consider them taking into account their interrelation, interdependence and interconditionality; thirdly, to expand the list and range of agricultural products subject to specific demand of the world market; fourthly, to conduct diversification of the agrarian production of the region by following the agriculture management, to identify export oriented branches of the agrarian production; fifth to improve efficiency of using watering tillage by rational usage of the technically prepared lands; sixth, to optimize the structure of cropping areas and to ensure specialization of rural territories on inter-oblast division of labor; seventh, to apply principles and forms of economic cooperation at national level and at the level of external economic activity of the country based on scientific forecasted developments; eighth, to provide for monitoring and assessment of achievement of final results, to control fulfillment of the management decisions made.

Distinctive characteristics of the most agricultural goods and food products, also goods made of agrarian products, are they are perishable products which require following some certain consumption and technological specifics of their storage, in the process of sales and export operations, including the agricultural products. In this aspect even grain crops and seeding material shall be stored in accordance with the physiological and technological specifics, sometimes treatment of agricultural crops must be done, including storage premises, also certification and standardization of the products designated for sales inside the country and outside of its borders must be performed.

Perishable products that need industrial processing shall be supplied to the next distribution channel as per earlier concluded contracts. At the same time in case of selling transportable agricultural products of longer storage, options and possibilities of choosing the channels and periods of sales from producers of goods are wider. For the seasonal products it is required to choose more profitable periods of sales if agro formations and sales companies have access to the grain depots and refrigerators for storing relevant types of products [9,10].

In this aspect, there is being conducted fruitful and purposeful work in the Aral Sea rice planting region, which allows to expand possibilities of selling produced agricultural products. Along with it, management of the oblast supports socially vulnerable layers of population providing them with the primary products and processed agricultural products.

“Baikonur” SPK does a good work on achievement of the strategic goals, set by local executive authorities, it has a network of storages for agricultural products, concludes contracts with other regions of Kazakhstan to supply potatoes, vegetables and flour.

When considering regional specifics and orientation of specialization of the export of agricultural products in terms of economic integration, properly developed marketing strategy of the region becomes important, as well as the strategy of the agro industrial production objects. Marketing strategy shall set marketing goals, comparing them to opportunities of the region and of the agrarian formations and companies on selling products produced in the agrarian sphere. Based on the market researches, competitors, requirements of the potential consumers, perspectives of selling various types goods were identified, demands were predicted, and the most probable sale prices were estimated for each type of

product, a commodity balance of the region has been planned on an annual basis as well as for certain large agro formations and companies on selling goods produced from agrarian products.

Special attention in the process of marketing research shall be given to the analysis of intensity of the competition in any certain market. At the same time the most serious competitors at the regional market shall be identified in order to study agro formations and companies which sell agrarian products. Also focus will be placed on assessment of strengths and weaknesses, threats and risks, potential possibilities for the region and agro industrial producers.

For the purposes of agro industrial products sales control in terms of economic integration at regional level, it is required to distinguish political, economic, ecological and social aspects.

Political aspects of agricultural products and processed agricultural products sales control include products safety assurance, supply of high quality food to population, strengthening of self-sustainability of the region, improving export potentials, reducing the risk of emergency situations of internal and external nature and ensuring stable prices in regions.

Table 3 - Exports of the Republic of Kazakhstan rice

Indicators	the years									
	2013		2014		2015		2016		2017	
	thous. ton	thous. USD	thous. ton	thous. USD	thous. ton	thous. USD	thous. ton	thous. USD	thous. ton	thous. USD
Rice, ton	529,2	20,5	51,8	21,3	63,3	30,06	65,6	16	98,6	21,9
CIS countries	52,8	20,5	51,9	21,3	63,3	30,05	645	16	91,3	19
Kyrgyzstan	12,53	4,5	9,9	4,04	7,5	2,5	2,07	0,6	1,2	0,2
Tajikistan	10,4	4,9	15,9	7,9	12,02	5,3	31,1	8,5	24,8	6,02
Russia	21,3	5,4	21,4	6,2	17,3	5,1	23,2	4,2	47,3	7
Azerbaijan	0,51	0,2			0,3	0,2	0,4	0,006	2,2	1
Turkmenistan	7,7	5,4	1,08	0,8	2,9	1,7	3	1,5	2,6	1,4
Ukraine	0,3	0,1	0,2	0,07	-	-	4	0,7	13	3,3
Uzbekistan			3,4	2,4	23,2	14,9	1,4	0,2	0,2	0,1
The rest of the world	0,13	0,004	-	-	0,02	0,007	0,6	0,2	7,2	2,9
Turkey	0,11	0,003	-	-	-	-	-	-		
Mongolia	0,03	0,004	-	-	0,02	0,007	0,2	0,1	2,6	1,6
Afghanistan	-	-	-	-	-	-	0,4	0,05	4,6	1,3
Republic of Iraq Ирак									0,04	0,01

Welcome - the table was compiled by the author according to the statistics for the pk

Economic aspects of agro industrial products sales control in the regional scale comprise of ensuring growth of agricultural production and quality improvement, ensuring sustainable operation of agro industrial producers, improvement of pricing, tax, loan, insurance and customs tariff policy, development of the agrarian market infrastructure, update and improvement of the logistics base of the agro formations.

Ecological aspects of agro industrial products sales control in the regional scale include environmental safety assurance for agrarian products, improvement of physiological, technological and consumption values, refusal from production of transgenic crops and gene modified products, reduction of soil and water resources contamination with various herbicides, pesticides, salts of heavy metals, industrial wastes and etc.

Social aspects of agro industrial products sales control in the regional scale consist of development of rural and suburban territories, improvement of life level and life activity of the population, preserving the culture of nutrition and healthcare of nation, improving motivation of labor and reduction of the level of outflow of the rural population, allocation of the human resources in the rural areas, reducing the level of poverty of population, especially in the rural territories.

Hence in the process of agricultural products export in terms of economic integration of regions, it is required to follow systemic and complex principles of agricultural products sales control, and this works

for all agricultural producers, when they employ relevant ways of execution and adoption of timely management solutions based on the commonly accepted project management method.

According to the Oblast Agricultural Department, at present time the Kyzylorda Oblast rice planting areas incorporate 240 th. hectares of irrigated land with 168,7 th. hectares of agricultural crops planted. This year 78,4 th. hectares of rice were planting, which by 2,1 th. hectares more than in 2015. The current year in Oblast crop rotation areas amount to 180 th. hectares, which is by 10 th. hectares more than in previous year. All these efforts make it possible to successfully fulfill the state program on enhancement of irrigated land us, and also to intensify export capabilities of the Oblast. Moreover, based on the state program “Agriculture Development Road Map 2020”, there are works in the progress on construction and reconstruction of water supply facilities to rural areas, it is planned to build a water storage facility in Zhanakorgan Rayon and to revamp water dividing ridges in Karauzyak. Nowadays such countries as China, Iran, European Union countries, Russian Federation demonstrate their high interest to Kazakhstani agricultural products. Also Germany, Denmark, Holland, Belgium and Austria are interested in fish coming from the Aral Sea, which requires certification of the fish products and acceptance of the Eurocode. For these purposes, modern fish products storages with 750 tons capacity were built in Aral Rayon this year. Another positive event is an example of businessman Amanbai Erkhatorov, who started operation of a fishery plant with 1500 tons per year capacity in Dimitrovgrad city of Uliyanovsk oblast of Russian Federation, which demonstrates great opportunities of Kyzylorda oblast in resolving economic integration goals.

At the same time, setting favorable taxation and other conditions for foreign investors enables to expand boundaries of economic integration not only in the area of agrarian production, but also in such areas as logistics, agricultural products processing, scientific support and etc.

The introduction of EU countries’ experience is quite important for the development of agricultural industry in the whole in Kazakhstan and in its regions. In particular, since 2011 Germany has been focusing on Kazakhstan striving to propose new pilot projects in the field of agriculture. A positive example of development of these friendly relations is dry shubat and kumys, produced in Germany, which increase export possibilities of these products from Kazakhstan. At this the majority of regions in the country have potential possibilities of increasing livestock of horses and camels.

Along with it according to the Ministry of Agriculture of the Republic of Kazakhstan the representatives of the Federal Institute on consumer protection and food security «LAVES» provided their own system of veterinary check as well as recommendations on improving the system of veterinary control of Kazakhstan. Particularly, a German project on identification of animals was presented to Kazakhstani experts in the field of veterinary security [11, 12].

The establishment of the wholesale and distribution network basing on the example from foreign countries of the European Union will help to stimulate the business activities of the agricultural producers, to reduce product loses and will satisfy internal needs in food products. The development of agricultural complex in the context of providing food security is considered as one of the priorities of the state social and economical policy. At present this problem has become more urgent due to the introduction of import bans on certain type of agricultural products due to political decisions, customs, tax, veterinary and other conditions.

The experience of neighboring Russian Federation is worth of noticing, this country focuses on agricultural products sale. Thus, in December 2014 the Government of Russia approved the State Program of development of agricultural industry and control of markets of agricultural products, raw materials and food products for 2013-2020. As the result, 93 billion rubles will be allocated under the subprogram “Development of wholesale and distribution centers and infrastructure of social feeding system”, and in 2015 more than 2,4 billion rubles were spent for these purposes, and in Y2016 году - 10,3 billion roubles. The main purpose of this program is to ensure the sale of agricultural products, to enhance its marketable value by means of creation of conditions for its seasonal storage and conditioning. Meanwhile the share in turnover of wholesale and distribution centers and production logistic centers realized through the state and municipal order including for rendering internal food aid to population is set at 20%.

The positive example of development of the food and food-processing export potential in Kazakhstan is Kostanay confectionery factory “Bayan Sulu” JSC which implements high-priority projects and exports ready products to different countries: such as Russia, Uzbekistan, Azerbaijan, Kyrgyzstan, Germany, China and etc.

The investments from the European Union countries: including Germany, France, Israel; Southeast Asia countries: such as Japan, South Korea; and Asian countries: as Iran and others, will contribute to the development of agricultural industry in the regions of Kazakhstan. In this aspect the production of new sorts of agricultural crops, the development of the field of agricultural machine building etc. should be noted. With vast crop areas, Kazakhstan is able to successfully develop all fields of technical service of agricultural machine building. For instance, nowadays, Iran, China and other countries of the Middle East and Southeast Asia increase import of grain crops including rice from one year to another. That is why in the regional aspect it is required to vary assortment of produced agricultural products, to strengthen material and technical base of agricultural formations.

**Conclusion:**

Kazakhstan as an agricultural and industrial country has huge possibilities for integration into the world market, however this requires to conduct a task-oriented and efficient agricultural policy aimed at development of regions by means of applying the system of management of agricultural industry. In this aspect it is required to attract new German projects oriented on intensification of agricultural industry. Through a broader lens to use a positive experience of Israel, EU countries as Holland, Sweden and others. The positive thing is the development of big production in Sweden which allows to use large crop areas of the north regions of Kazakhstan more efficiently on the basis of cooperation of the agricultural formations. As well it is required to fulfill diversification of agricultural industry taking into account requirements of the world market. Today, notwithstanding the high financial support from the government, Kazakhstan is dependant in sugar needs from the world market, covering own needs only by 11%. The same situation is observed in relation to milk and dairy products. That is why it is required to develop a cattle breeding taking into account pedigree peculiarities by means of attracting investments and projects from Holland, Germany, Russia and other countries.

Positive examples of the agricultural development, in particular in rural areas, include the experience of rural development in Germany and other countries of the European Union. In order to develop the agricultural machine building sector it is required to integrate this sector with the German agricultural machine building experience in some regions of our country. For instance, the Kazakhstani professionals speak positively about the German harvester “Case”, which is successfully used in some rice-sowing farms of Kyzylorda oblast. The establishment of subsidiaries in this region will enable expanding the sale market of German companies in the Central Asia that accommodates vast agricultural areas.

The construction of the “West Europe-West China” Highway has made it possible to bring close together the integration possibilities of the European Union countries and Kazakhstan, using logistics and other tools of the market mechanism of economy management, expanding sale markets of agrarian products.

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**ЭКОНОМИКАЛЫҚ ИНТЕГРАЦИЯ ЖАҒДАЙЫНДА АУЫЛШАРУАШЫЛЫҒЫ ӨНІМДЕРІ  
ЭКСПОРТЫНЫҢ АЙМАҚТЫҚ ЕРЕКШЕЛІКТЕРІ МЕН БАҒЫТТАРЫ**

**Аннотация:** Мақалада экономикалық интеграцияны жүзеге асырудың аймақтық ерекшеліктері және ауыл шаруашылығы өнімдерінің экспорттық бағыттары қарастырылады. Аймақтардың айрықша ерекшеліктері, экономикалық интеграцияның нысандары мен түрлері, негізгі ережелері және оларды аймақтық тұрғыда жақсарту жөніндегі шаралар күріш өсірудің нақты аймағының мысалында берілген.

**Түйін сөздер:** экономикалық интеграция, аймақтық сипаттамалар, нысандар (сатылар), маусымдық табиғат, ауылшаруашылық өнімдерін өндіру және маркетинг, агроформациялар, күріштік компаниялар, критерийлер мен көрсеткіштер, құндылық көрсеткіштері, тез бұзылатын өнімдер, операциялық тұрақтылық, аграрлық сала, агроөнеркәсіп өндірісі ауылшаруашылық өнімдерін сатуды басқарудың ұйымдастырушылық және басқару тетіктері.

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## РЕГИОНАЛЬНЫЕ ОСОБЕННОСТИ И НАПРАВЛЕНИЯ ЭКСПОРТА СЕЛЬСКОХОЗЯЙСТВЕННОЙ ПРОДУКЦИИ В УСЛОВИЯХ ЭКОНОМИЧЕСКОЙ ИНТЕГРАЦИИ

**Аннотация:** В статье рассматриваются региональные особенности при осуществлении экономической интеграции и направления экспорта сельскохозяйственной продукции. Приводятся характеристики признаки отличительных особенностей регионов, формы и типы экономической интеграции, основные положения и предлагаются меры по улучшению их в региональном аспекте на примере конкретного региона рисосеяния.

**Ключевые слова:** экономическая интеграция, региональные особенности, формы (стадии), сезонный характер, производство и сбыт сельскохозяйственной продукции, агроформирования, рисоводческие компании, критерии и показатели эффективности, методы и оценка стоимостных показателей, скоропортящиеся продукты, устойчивость функционирования, аграрная сфера, агропромышленное производство, приграничные области, организационно-управленческий механизм управления сбыта сельскохозяйственной продукции.

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