

## Алматинская академия экономики и статистики

Ежеквартальный научно-практический журнал

# Статистика, учет и аудит

Статистика, есеп және аудит

Statistics, account and audit

Алматы 3(78)2020



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#### WAGES IN KAZAKHSTAN: TRENDS, FACTORS, WAYS TO INCREASE

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Abstract. Presidential address K-J Tokaev's to people of Kazakhstan" Constructive public dialogue - the base of stability and prosperity of Kazakhstan" refers about necessity of structural changes to ensure annual sustainable GDP growth of 5% and above by 2025. In essence, we are talking about the transformation of economy of Kazakhstan and, on this basis, increasing its socio-economic efficiency, including increasing wages[1]. This article identifies trends in the sectoral structure of the economy of Kazakhstan over the past decade, identifies wage trends under the influence of individual factors and ways of increasing it.

**Key words:** economy of Kazakhstan, structural changes, wages, trends, factors, increasing of wages.

**Introduction.** The growth of the economy of Kazakhstan significantly depends on the dynamics of development of the world economy. To the greatest extent, this dependence manifested itself during the 2008-2009 crisis, which negatively affected to the growth rate of GDP and per capita GDP and showed the need to change the sectoral structure of the economy and employment. The structural transformation of the economy has become an important part of government policy that aimed at accelerated industrial and innovative development of the country [2]. This was to ensure a steady rate of economic growth based on increasing the competitiveness of domestic goods in the domestic and foreign markets. On this background, the topic of the impact of structural changes on the social efficiency of the economy, and primarily on wages, remains insufficiently studied.

The economic success of a country is often assessed by the dynamics of gross domestic product (GDP). According to this criterion, the economy of Kazakhstan reached 42 (140) places [3], which was facilitated by favorable conditions on the world hydrocarbon market. However, in subsequent years, the country's rating began to decline and in 2019 it took 55th place among 141 countries of the world [4]. The downward trend of this indicator was due to the exhaustion of potential of the raw material orientation of the country's economy. In terms of GDP per capita, labor productivity, wages and other social indicators Kazakhstan is seriously behind developed countries.

There is a relationship between social and economic efficiency. When assessing the effectiveness of the national economy, it is not enough to take into consideration just the GDP growth rates, but it is necessary to take into account changes in social efficiency. The range of indicators reflecting social efficiency is quite wide, in this article we consider only one of them - wages. This indicator sufficiently characterizes the degree of satisfaction of the needs and interests of workers, while at the same time determines the efficiency of the use of human resources in the framework of economic efficiency. Such an approach to assessing production efficiency is important for shaping the country's socio-economic policy.

Methods.In article authors focus on identifying the main trends in wage changes in Kazakhstan under the influence of certain factors, as well as on issues of increasing wages. In the analysis were used official statistical materials of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan [5] and OECD [6]. The analysis covers a twenty-year period from 2000 to 2019, and it was divided into two periods of ten years. In the process of research, the authors along with such theoretical methods as problem statement, hypothesis construction, also were used the following methods: analysis, synthesis, grouping, comparison, correlation and regression analysis, etc.

**Results and discussion.** According to official statistics in Kazakhstan, since 2000, against the background of dynamic economic growth, positive shifts have been taking place in solving the problems of increasing wages (see table 1).

Our calculations to identify the correlation between the growth rate of nominal wages and GDP over a long period of time from 2000 to 2019 showed a fairly close relationship between them: the correlation coefficient is 0.748601; between the growth rates of real wages and GDP, the correlation coefficient is 0.775561.Indeed, the data in table 1 show that for 2000-2019, the average annual growth rate of GDP, nominal and real wages amounted to 106.8, 114.8 and 106.0%. In 2000-2009 these salary indicators had high values at higher values of GDP and, conversely, in 2010-2019 they decreased in line with the decline in GDP growth rates.



Table 1

Dynamics of real GDP, nominal and real wages in Kazakhstan, in percent \*

			Ye	Average annual growth in the period					
	2000	2004	2009	2010	2014	2019	2000- 2009	2010- 2019	2000- 2019
1	2	3	4	5	6	7	8	9	10
Real GDP growth, as a percentage of the previous year	109,8	109,6	101,2	107,3	104,2	104,5	108,5	104,8	106,8
Growth in nominal wages, as a percentage of the previous year	121,2	122,5	110,7	115,3	110,9	114,3	119,0	110,7	114,8
Real wage growth, as a percentage of the previous year	107,1	114,6	103,2	107,6	103,9	108,5	109,0	103,2	106,0

In 2019, the President of Kazakhstan, K-Zh. Tokaev attached particular importance to the problem of raising wages in for solving the problem of Kazakhstan becoming one of the 30 most developed countries in the world. Searchfor a solution to this problem requires a comprehensive retrospective analysis of wages with the involvement and processing of a huge amount of data. Given the recommended format of this article, the authors limited themselves to studying the trends in wage changes only by industry.

Table 2 presents the dynamics of wages in the context of those types of economic activity in which the vast majority of the able-bodied population is employed.

Table 2
The growth rate of the average monthly nominal wage per employee for certain types of economic activity, as a percentage of the previous year \*

			Y		Average annual growth					
				cui			in	the perio	d	
	2000	2004	2009	2010	2014	2019	2000-	2010-	2000-	
	2000	2004	2009	2010	2014	2019	2009	2019	2019	
1	2	3	4	5	6	7	8	9	10	
For all types of activities	121,2	122,5	110,7	115,3	110,9	114,0	119,0	110,7	114,7	
Agriculture, forestry and fisheries	119,7	124,5	108,8	108,4	114,0	117,1	122,2	113,0	117,5	
Industry	124,6	120,1	107,7	116,0	115,0	110,0	117,0	112,4	114,6	
Mining and quarrying	128,5	119,2	111,6	120,1	119,6	109,8	117,6	112,7	115,1	
Manufacturing industry	128,9	121,6	104,8	114,2	111,9	111,8	117,0	111,7	114,3	
Building	135,0	112,0	110,1	116,5	117,6	112,6	118,9	110,4	114,6	
Wholesale and retail trade; car and motorcycle repair	121,1	120,6	109,5	114,4	113,4	110,4	119,1	110,5	114,7	
Financial and insurance activities	108,8	113,7	100,4	110,1	107,4	110,1	115,3	109,9	112,5	
Public Administration and Defense; compulsory social	109,6	144,3	125,3	119,1	102,4	115,9	118,0	110,2	114,0	
security										
Education	104,3	124,6	121,8	117,3	107,6	122,7	117,7	111,6	114,6	
Health and social services	106,7	125,7	127,0	120,0	109,6	119,8	120,9	111,4	116,1	
* Compiled and calculat	* Compiled and calculated by the authors based on data: http://stat.gov.kz									

The data in table 2 confirm that, firstly, the tendency of changing of wages in the economy as a whole remain fair for each type of activity. Secondly, the average annual increase in wages by type of activity did not reveal significant deviations from its value in the economy as a whole: the range of deviations was (+2.8) - (-2.2) percentage points (p.p.). This suggests that significant differences in the wages of workers in various sectors of the economy continue to persist (see table 3).



Table 3

Change in the average nominal wage by type of economic activity in relation to the average wage for all types of activity, in percent \*

2000	2005	2010	2015	2019
2	3	4	5	6
100	100	100	100	100
37,8	43,2	47,0	57,5	61,8
145,3	121,9	120,0	138,4	138,9
218,7	193,1	190,8	218,7	220,0
128,8	103,4	101,5	109,0	112,2
149,3	140,7	134,6	122,8	129,7
94,8	98,4	95,4	96,0	94,6
262,4	241,4	203,7	187,8	198,4
86,3	91,6	90,8	85,6	84,2
59,8	59,7	63,4	61,5	68,1
50,6	53,0	70,4	72,9	72,2
	2 100 37,8 145,3 218,7 128,8 149,3 94,8 262,4 86,3 59,8	2 3 100 100 37,8 43,2 145,3 121,9 218,7 193,1 128,8 103,4 149,3 140,7 94,8 98,4 262,4 241,4 86,3 91,6 59,8 59,7	2     3     4       100     100     100       37,8     43,2     47,0       145,3     121,9     120,0       218,7     193,1     190,8       128,8     103,4     101,5       149,3     140,7     134,6       94,8     98,4     95,4       262,4     241,4     203,7       86,3     91,6     90,8       59,8     59,7     63,4	2         3         4         5           100         100         100         100           37,8         43,2         47,0         57,5           145,3         121,9         120,0         138,4           218,7         193,1         190,8         218,7           128,8         103,4         101,5         109,0           149,3         140,7         134,6         122,8           94,8         98,4         95,4         96,0           262,4         241,4         203,7         187,8           86,3         91,6         90,8         85,6           59,8         59,7         63,4         61,5

So, in 2019, the average wage in the mining industry is 2.2 times higher than the average wage in the country's economy, and in agriculture it makes up only 61.8% of the average wage in the country. It can be stated that for the study period, despite certain positive shifts in wages in certain types of economic activity (agriculture, education, healthcare), overcoming sharp differences in wage levels by industry remains an urgent problem.

Modern challenges predetermine the need to strengthen the orientation of the state economic policy of Kazakhstan to increase the social efficiency of social production. The task of reducing the dependence of the national economy on foreign markets dictates the building of an effective sectoral structure through accelerated innovative development of high value-added industries. This will ensure an increase in the living standards of the population and, above all, an increase in wages based on economic growth, labor productivity and high employment. In this regard, it is important to analyze the growth trends in the volume of production in industries in relation to general economic growth (see table 4).

Table 4

The growth rate of real GDP and production volumes in certain sectors of the economy of Kazakhstan, as a percentage of the previous year \*

Indicators	2010	2012	2013	2014	2015	2016	2017	2018	2019	2010-2019
1	2	3	4	5	6	7	8	9	10	11
Rates of growth:										
GDP	107,3	104,8	106,0	104,2	101,2	101,1	104,1	104,1	104,5	104,8
industrial products	109,6	100,7	102,5	100,3	98,4	98,9	107,3	104,4	103,8	102,9
mining products	107,2	100,4	103,3	99,7	97,5	97,3	109,3	104,6	103,7	102,3
manufacturing products	113,9	101,2	101,9	101,1	100,2	100,6	105,6	104,5	104,4	104,0
agricultural products	89,6	85,2	109,7	101	103,4	105,4	103,0	103,5	100,9	101,9
completed construction work	102,4	103,1	103,5	104,6	105,8	107,4	102,8	104,6	112,9	104,9
retail	117,9	113,4	116,0	107,9	97,5	102,0	102,7	105,7	105,8	107,9
* Compiled and calculate	ed by the	authors	based o	on data:	http://sto	it.gov.kz	•		•	

From the data of table 4, it is seen that the pace of general economic growth is ahead of all branches of material production, with the exception of the construction industry. Although the state program of industrial and innovative development was implemented during this period, it did not have a no-



ticeable effect on the increase in the share of high-tech industries in the formation of aggregate output. In fact, the prevalence of low-tech industries that took place in the country's economy has not been overcome [7]. This is also evidenced by the data of the WEF Report for 2019, where according to the "Innovation capability" indicator, Kazakhstan occupies 95th place among 141 countries of the world and is far behind developed countries [8]. In 2018, research and development expenditures in OECD countries averaged 2.03% of GDP, the Republic of Korea and Israel - 4.53 and 4.94% of the GDP of these countries. In the same year, the average salary in OECD countries amounted to 46686 US dollars, Korea - 39472, Israel - 37655 US dollars [6]. According to our estimates, in Kazakhstan, research and development expenditures amounted to only 0.12% of the country's GDP, the average wage - 5664 US dollars. Such indicators of comparison with developed countries allow us to identify the features of the structure of the economy of Kazakhstan, consisting in low internal incentives for innovative development, which ultimately affects the level of wages in the country.

If we compare the dynamics of changes in the share of various industries for the study period, then by 2019 the share of industry in the overall structure of GDP decreased by 5.1 percentage points, of agriculture - 3.7 percentage points; the share of construction increased by 0.3 percentage points, the services sector - by 7.2 percentage points (see table 5).

Table 5 Change in the structure of GDP and employment in Kazakhstan, in percent \*

·	Gl	DP stru	cture (p	roductio	on	Employment structure by type				
Type of economic activity		1	nethod)	)		of economic activity				
	2000	2005	2010	2015	2019	2000	2005	2010	2015	2019
1	2	3	4	5	6	7	8	9	10	11
Agriculture, forestry and fisheries	8,2	6,4	4,5	4,8	4,5	31,0	31,9	28,3	18,0	13,5
Industry	32,6	29,8	32,9	24,7	27,5	14,1	12,2	11,7	12,6	12,5
Mining industry	13,0	15,8	19,5	12,7	14,5	3,3	2,7	2,4	3,3	3,2
Manufacturing industry	16,5	12	11,3	10,1	11,4	7,8	6,9	7,0	6,4	6,6
Building	5,2	7,8	7,7	6,0	5,5	3,6	5,7	7,0	8,0	7,2
Services sector	48,3	52,0	51,7	59,4	55,5	51,3	50,2	53,0	61,4	66,8
* Calculated by the authors based on data: http://stat.gov.kz										

Sectoral shifts in the structure of GDP for 2000-2019 led to a decrease in the share of workers in agriculture by 17.5 percentage points, industry - 1.6 percentage points. The share of construction increased by 3.6 percentage points, the services sector - by 15.5 percentage points In turn, changes in the structure of the produced GDP seriously affected the change in the structure of the employed population, the quantity and quality of the workforce. The predominant part of the employed population is concentrated in the service sector, which corresponds to modern world development trends. At the same time, this sphere is characterized by low wages, which is also one of the main factors restraining the increase in wages throughout the country.

Another significant factor holding back wage increases is the government's policy of maintaining a high level of employment and low unemployment. The Kazakhstan model of the labor market was also tuned to this, in which this goal was achieved by maintaining a low level of wages. This problem considered in detail by us in work [9].

Thus, based on the results of the analysis, it can be stated that the increase in wages is constrained by the inefficient sectoral structure of the economy. State program of industrial and innovative development for 2000-2019 had to carry out structural and technological modernization of the national economy, create innovative areas of growth. However, the facts indicate insufficient rates and low quality of economic growth. This is largely due to the downward trend in the share of industries with a higher level of potential for the development of high-tech industries and wages. A significant increase in the share of services in the structure of GDP, in particular wholesale and retail trade, resulted in the outflow of labor to low-tech industries with low wages.

Conclusion. The results of our study and the experience of leading developed countries confirm the thesis that significant reserves for raising wages are laid in the creation of an effective sectoral structure of the economy. Our analysis of statistics for 2000-2019 confirms the ineffective structural dynamics of the economy of Kazakhstan. The selection of targets for socio-economic policy in Kazakhstan should be based on recognition of existing structural imbalances in the national economy. Structural deformation can be eliminated due to the optimal combination of government regulation measures and strengthening the role of market incentives. In particular, we can talk about the priority direction of the state's investment resources in high-tech sectors of the



economy and the increasing role of the collective bargaining process in ensuring a direct relationship between the amount of wages and the achieved labor productivity. Under these conditions, structural changes will ensure high rates of qualitative growth of the economy and an increase in the wages of workers.

#### Acknowledgment

This work was financially supported by the grant project of the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan for 2017-2020, project number AR 05135300.

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## ҚАЗАҚСТАНДАҒЫ ЕҢБЕКАҚЫ: ТРЕНДТЕР, ФАКТОРЛАР, АРТТЫРУ ЖОЛДАРЫ $\mathit{C.K.}\ \mathit{Джумамбаев}^{1}, \mathit{A.}\ \mathit{Досмбек}^{2}$

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Түйін. Еңбекақы деңгейін арттыру мәселесінің табысты шешімі көп жағдайда экономиканың тиімді салалық құрылымын жасаудан тәуелді болады. Онда еңбекақы деңгейін арттыруда елеулі резервтер бар екендігін алдыңғы қатардағы дамыған елдердің оң тәжірибесі көрсетеді. Өткізген талдау нәтижелері Қазақстанда экономиканың тиімсіз құрылымдық динамикасы қалыптасуын көрсетеді, бұл жұмыспен қамтылған халықтың құрылымын, жұмыс күшінің саны мен сапасының өзгеруіне айтарлықтай әсер жасады. Жұмыспен қамтылған халықтың басым бөлігі төменгі еңбекақы төленетін қызмет көрсету аясында шоғырлануда. Мұндай жағдай елде еңбекақы деңгейін арттыруды тежейтін негізгі факторлардың бірі болады. Мемлекеттік реттеудің жігерлі шараларын және нарықтық ынталандырамаларын күшейтуді оңтайлы үйлестіру жолымен экономиканың құрылымдық деформациясын еңсеру экономиканың сапалы өсуінің жоғары қарқынын және жұмыскерлердің еңбекақысын арттыруын қамтамасыз етеді.

**Түйінді сөздер:** Қазақстан экономикасы, құрылымдық өзгерістер, еңбекақы, трендтер, факторлар, еңбекақыны арттыру.

## ЗАРАБОТНАЯ ПЛАТА В КАЗАХСТАНЕ: ТРЕНДЫ, ФАКТОРЫ, ПУТИ ПОВЫШЕНИЯ

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Резюме. Успешное решение задачи по повышению уровня заработной платы во многом зависит от создания эффективной отраслевой структуры экономики. Положительный опыт ведущих развитых стран свидетельствует о том, что в ней заложены значительные резервы повышения уровня заработной платы. Результаты проведенного анализа показали, что в Казахстане складывается неэффективная структурная динамика экономики, которая серьезно отразилась на изменении структуры занятого населения, количества и качества рабочей силы. Преобладающая часть занятого населения продолжает концентрироваться в сфере услуг, для которой характерна низкая заработная плата, что является также одним из основных факторов, сдерживающих повышение уровня заработной платы по стране. Преодоление структурной деформации экономики путем оптимального сочетания энергичных мер государственного регулирования и усиления роли рыночных стимулов обеспечит высокие темпы качественного роста экономики и повышение заработной платы работников.

**Ключевые слова:** экономика Казахстана, структурные изменения, заработная плата, тренды, факторы, повышение заработной платы.



#### MRNTI (МРНТИ) 06.81.23 UDC (УДК) 330:001.31

#### PROBLEMS OF FORMING KNOWLEDGE ECONOMY IN KAZAKHSTAN

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**Abstract.** This article is devoted to the problems of the formation of a knowledge society in Kazakhstan. In the context of the knowledge economy, the approach to determining the essence of innovation and the innovation process is changing: from now on, innovations are based not so much on new combinations of resources and inventions as it was in the conditions of the industrial economy, but on the flows of knowledge and information resulting from the purposeful development of science and technology.

Based on a synthesis of foreign experience and an analysis of industrial and innovative development of Kazakhstan, the article gives recommendations on improving the mechanism for the formation and development of a "smart economy". Kazakhstan needs to develop and implement an effective innovation-technological and structural strategy focused on an innovative breakthrough, widespread production of the fifth and the development of production of the sixth technological order, diversification of the economy and progressive structural changes.

**Key words:** intellectual intensity of production, innovations, technological way of life, human capital, human potential, innovation of gross domestic product.

**Introduction.** Currently, the knowledge economy is a fundamental factor influencing the development of the productive forces of society. Based on this, the development of human potential in a global and open market is able to bring the country to a higher level of socio-economic development.

The Republic of Kazakhstan for further qualitative transformations needs to focus on the following areas: accelerated development of human potential, improving the living standards of the population, the introduction of effective management in enterprises of all sectors, improving the quality of education and supporting the development of high-tech specialties in the domestic market.

The task setting in countries where market relations have a long history is constantly increasing the need for people who can serve the "smart economy". Qualified and educated specialists make a significant contribution to the competitive advantages and overall performance of the national economy. The development of the economy should take place in accordance with the trends of a socially oriented economy, where the key indicators of the effectiveness of the country's intellectual potential and the competitiveness of domestic specialists are the conformity of their qualities to international standards. The emerging need to study the theoretical aspects of the essence of the concept of "knowledge economy" and study the practice of foreign countries are necessary to measure the contribution of the human factor to the development of the economic system. Today, to ensure the development of the economy, the preservation of statehood and the increase of general welfare, a high level of development of the knowledge economy is required.

In this connection, the development of a science-based base, trends, patterns and trends in the development of the knowledge economy is timely and has important theoretical and practical value.

**Research methods.** Theoretical and methodological issues of raising the efficiency and effectiveness of the application of human potential and the formation of the knowledge economy are studied in the scientific works of Kazakhstan and foreign researchers, such as: V.S. Avtonomonova, Yu.V. Batalova, S.A. Belova, V. Bryleva, V.S. Goylo, A. Gorts, A. Doktorovich, S.A. Dyatlova, R.I. Kapelyushnikova A. Zubkova, M.B. Kenzheguzina, V.P. Kolesova, A. Korsani, V.I. Marunkevich, V.M. Moiseenko, E.V. Pilipenko, L. Sarykulova, L. Suetina, I.N. Tasmagambetova, O.S. Chudinovsky, Yu.K. Shokamanova and others.

The methods of economic and comparative analysis were used to justify the theoretical principles and reasoning of the conclusions; economic and statistical methods were used to process the information.

**Results and discussion.** The knowledge economy or "knowledge-based economy" is different from the agrarian and industrial economies that preceded it. Although natural and material resources continue to serve as the basis for creating economic benefits, the growth and development of the economic system is provided not so much by external as by internal, intangible factors, the most important of which are knowledge and human capital.

Currently, knowledge production is the main source of economic growth in developed countries. This thesis is proved by the fact that 90% of scientists and engineers who have worked in the entire history of the development of mankind are our contemporaries. Also, 90% of the total volume of knowledge created over the past thirty years [1].

The most advanced countries in terms of the share of high-tech sectors of the economy in gross domestic product (GDP) are: Republic of Korea, Sweden, Switzerland, Germany, Japan, USA.