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ASSESSMENT AND FORECASTS OF EMPLOYMENT IN THE CHEMICAL AND PETROCHEMICAL INDUSTRY OF THE REPUBLIC OF KAZAKHSTAN TILL 2025 YEAR

Abstract

Purpose – the main goal of this article is methodological bases of forecasting of employment in the chemical and petrochemical industry of Kazakhstan.

Methodology – The method research research/methodology at the forecast of the employed population and the number of the enterprises in chemical industry has been used a *method of econometric modeling of temporary ranks*. Also were the logical method for the offer of system of technical professional education was used. The graphic method - tables, drawings for a material explanation has been used.

Originality/value – is as follows: Kazakhstan have defined the strategic purpose - to become the competitive country of the world in the nearest future. These objectives can be achieved when ensuring high-quality labor market, in particular labor market in the chemical and petrochemical industry. This market will make qualitative production. Respectively forecasting of employment in the chemical and petrochemical industry of Kazakhstan will help with formation of quantitative demand in labor market and education market with the chemical and petrochemical industry of Kazakhstan. This research will help with development of methodological bases of training of qualified personnel in the chemical and petrochemical industry. Also will help with improvement of further development of the chemical and petrochemical industry of the Republic of Kazakhstan. The directions of improvement of technical professional education on the basis of foreign experience are also offered.

Findings – On the basis of the forecast of chemical specialties growth of number of the chemical companies and growth of number of the employed population in chemical industry till 2025 have been revealed. Use of this forecast will help with formation of a methodic of preparation of number of qualified personnel in the chemical and petrochemical industry of RK. This research will help with formation of the state order of amount of chemical and petrochemical specialties for the Ministry of Education and Science of RK till 2025. Also in work were offered creation of system of vocational training, training at work as one of the main directions of improvement of quality of technical education.

Key words – the chemical and petrochemical industry, employment in the chemical and petrochemical industry, the forecast of employment of workers in the chemical and petrochemical industry of RK, vocational training, professional standards.

Introduction

Principles of the present article are works of assessment of the current state of the chemical and petrochemical industry have been considered by scientists Trevino (1980), Dzhimenez (1980), Mikkelsen (1981), they considered the petrochemical industry as an integral part of industrial policy of the country. In works of Ores Fati-Ashfar and Dzhemenez (1975, 1981 and 1982) the petrochemical industry and some methods of modeling and forecasting of employment in the petrochemical industry was considered [1]. The research is based also on works of the Russian scientists, experts in the field of forecasting, economic-mathematical modeling, the analysis and forecasting of development of the chemical and petrochemical industry – A.I. Anchishkin, Yu.V. Yaremenko, A.G. Aganbegin, N.P. Fedorenko, V.V. Leontyev, V.L. Makarov, A.A. Makarov, G.B. Kleyner, A.S. Nekrasov, G.V. Martynov and others.

Questions of development of forecasts in relation to the petrochemical industry were considered in E. Young, O.B. Braginsky, E.P. Schukin's works. The research is based also on works of the Russian scientists, experts in the field of forecasting, economic and mathematical modeling, the analysis and forecasting of development of the chemical and petrochemical industry - A.I. Anchishkin, Yu.V. Yaremenko, A.G. Agenbedzhin, N.P. Fedorenko, V.V. Leontyev, V.L. Makarova, A.A. Makarova, G.B. Kleinera, A.S. Nekrasova, G.V. Martynova and others.

Questions of development of forecasts of rather petrochemical industry are considered in works in E. Young, O.B. Braginsky, E.P. Schukin's works. And also the forecast to 2025 has been made at works of such scientists as K.Dougerty (1950) – Introduction to Econometrics, works of the Russian scientists in Magnus Ya. forecast R., Katysheva P.K., Perezetki A.E. –Econometrics were used, works of the Russian economists Yeliseyeva I.I. Orlova A.I., V.S. Mkhiteryan, Sazhina I.V., Ivanova I.A. in the field of Econometrics of were used. Darbin J. works, Watson G.S. are applied to assessment of quality of the constructed models.

The petrochemical branch is essential branch for forward development of national economy of the Republic of Kazakhstan. Oil takes the central position in ensuring energy needs of the whole world that predetermines a role of oil-producing countries as guarantor of market stability.

According to the statistical review of world power prepared by the British company British Petroleum and Annual Report JSC Oil Company KazMunaiGas for 2016 year- for the end of 2015 Kazakhstan on reserves of oil has taken the 12-th place.

Table 1 – The place in the world on volumes of the proved reserves of oil and gas condensate in 2015 year

	Country	The volume of the proved stocks, one billion tons	Share in universal stocks, %	Security of stocks (ratio)
1	Venezuela	47,0	17,7%	313,9
2	Saudi Arabia	36,6	15,7%	60,8
3	Canada	27,8	10,1%	107,6
4	Iran	21,7	9,3%	110,3
5	Iraq	19,3	8,4%	97,2
6	Russia	14,0	6,0%	25,5
7	Kuwait	14,0	6,0%	89,8
8	UAE	13,0	5,8%	68,7
9	USA	6,6	3,2%	11,9
10	Libya	6,3	2,8%	306,8
11	Nigeria	5,0	2,2%	43,2
12	Kazakhstan	3,9	1,8%	49,3
Note – completed by authors based on source [2]				

Accumulation of economic capacity of the oil and gas sector in the sphere of subsurface use communicates from the increasing dynamics of oil production in general on the republic, creation of an extensive network of infrastructure productions, formation of new branches of specialization.

For January 1, 2017 the proved residual recoverable oil reserves and gas condensate of JSC Oil Company KazMunaiGas (taking into account shares) were at 785,8 million tons. At the same time the general gain of reserves of oil and condensate (taking into account shares) has made 7,2 million tons [2].

Table 2 – The consolidated (proved) stocks – hydrocarbons of the KazMunaiGas group of categories A, B, C1 at 2016 year

	Explored reserves of raw materials on category C1		Total raw material inventories of the developed fields on category C1	
	At 1/1/2016	All a gain (+)	Production (–)	At 1/1/2017
Oil, one billion tons	755,07	6,8	22,214	739,66
Natural gas, trillion. m3.	46,159	0,37	0,388	46,14
Total Oil and gas	801,2	7,17	22,6	785,8
Gas condensate of one million t.	486,2	1,37	7,47	480,1
Note – completed by authors based on source [2]				

Considerable parts of hydrocarbonic resources are the share of the western part of Kazakhstan and in particular of the Caspian oil and gas pool.

In 25 years of independence of Kazakhstan in oil branch was made much. The largest oil fields, gas and condensate Tengriz and Karachaganak are brought into industrial development, oil and gas production in new regions- Kyzylorda and Zhambyl regions has begun, large-scale calculations for studying of oil and gas structures in a shelf zone of the Caspian Sea are performed [3].

The oil fields of Kazakhstan (7 of 14 administrative areas) with its fields occupy about 62% of the territory of the country. The expected resources of oil are estimated at 4,5 billion t. [4].

The main oil and gas extraction region of the country is the Western Kazakhstan which territory includes four administrative regions-Atyrau, Mangystau, West Kazakhstan and Aktyubinsk areas. The main sources of the current and its perspective development are large reserves of the hydrocarbonic raw materials which are at various stages of development.

Table 3 – Share of regions in % of hydrocarbonic resources of Kazakhstan for 2016 year

Name of region	%
Atyrau region	59
Kazakhstan sector of the Caspian Sea	17
Mangystau Region	8,5
West Kazakhstan region	7
Aktyubinsk region	5,6
Other	2,9
Note – completed by authors based on source [2]	

The research of opportunities of Kazakhstan in the specified sector of economy has shown that for creation and development of petrochemical productions in the country there are exist all main compounds: high volumes of raw material resources (oil and gas), a wide choice of offers on petrochemical technologies and the equipment of the international scale, real demand for the concrete nomenclature of petrochemical production [5].

The prospects of development of the petrochemical industry connected with a leading position in the republic demand new approaches to a question of training in this branch. In this regard it will be necessary to develop and to introduce a methodic of an average and long-term forecasting of structure of demand in labor market of specialists with higher education. It is necessary to provide the volume of the state order for training of specialists for the petrochemical branch.

For this purpose the prognosis of number enterprises in the chemical and petrochemical industry and prognosis of number employed people in the chemical industry by 2025 year by method was calculated.

Table 4 – Number of the enterprises in the chemical industry and number of employees in the chemical industry for 2004-2016 years

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of the enterprises and productions of chemical industry RK	274	282	283	272	276	206	202	214	232	238	242	259	277
Number of employed people in the chemical industry one thousand people RK	16,1	14	13,6	13,6	14,2	16	15,5	16,2	12,8	14,5	14,4	13,7	14
Note – completed by authors based on source [6]													

It wasn't succeeded to pick up to the above-stated temporary ranks (table 5) adequate models with linear, polynomial or other trend. Application of model of autoregression 1 – about [7, 8, 9], i.e.

$$Y(t) = a + b\,Y(t\text{-}1) + e(t)$$

has yielded rather satisfactory results and this model could be used for obtaining expected values.

Addition of a linear trend in model (1) has considerably improved qualitative characteristics of model. Thus, it is supposed to apply look model

$$Y(t) = a + bY(t\text{-}1) + ct + e(t)$$

For Number of the enterprises and productions of chemical industry RK given a row, or for a number of N(t), with use of PPP Excel the following results are received:

Regression statistics	
Multiple R	0,9964
R-square	0,9929
Rated R-square	0,8922
standard error	23,1
monitoring	12

dispersion analysis

df		SS	MS	F	Importance of F
regression	2	746316,5	373158,3	699,52	0,000
rest	10	5334,5	533,4		

Total	12	751651				
coefficient		Standard mistake	t-stat	P-mean	Low 95%	High 95%
Y- crossing	0					
t	2,199	1,684	1,306	0,220	-1,553	5,951
N(t-1)	0,933	0,0556	16,78	0,000	0,809	1,057

$$N(t) = 0,933N(t-1) + 2.199t + e(t)$$

By means of Darbin-Watson's (DW) criterion it is possible to show that errors of e(t) in this model meet conditions of classical model [10,11]. The statistics of DW is equal 1.91 that speaks about lack of autocorrelation in the remains [12].

Thus, as appears from the results given above the model of a look (7) is satisfactory and can be used for forecasting. Finally the model has an appearance:

The expected values calculated on model (8) are given below, and the schedule of the actual and expected values of an indicator is provided on the figure 1.

Table 5 – Prognozis of number enterprises in the chemical industry and number of employed people in the chemical industry RK for 2025 year

	2017	2018	2019	2020	2021	2022	2023	2024	2025
Number of the enterprises and productions of the chemical industry RK	289,3	302,9	317,9	334,0	351,3	369,6	388,9	409,1	430,2
Note it is calculated by authors									

Analyzing this table we can see that number of enterprises of the chemical industry increased from 317,9 in 2019 year enterprises to 430 in 2025 year. Difference is 112,3 enterprises.

2017 year – 289,3
2018 year – 302,9
2019 year – 317,9
2020 year– 334,0
2021 year – 351,3
2022 year – 369,6
2023 year – 388,9
2024 year – 409,1
2025 year – 430,2

In this table we can see increasing number enterprises in the chemical and petrochemical industry. Chemical industry is part of the petrochemical industry. And increasing number in this branch automatically mean increasing number in the petrochemical industry.

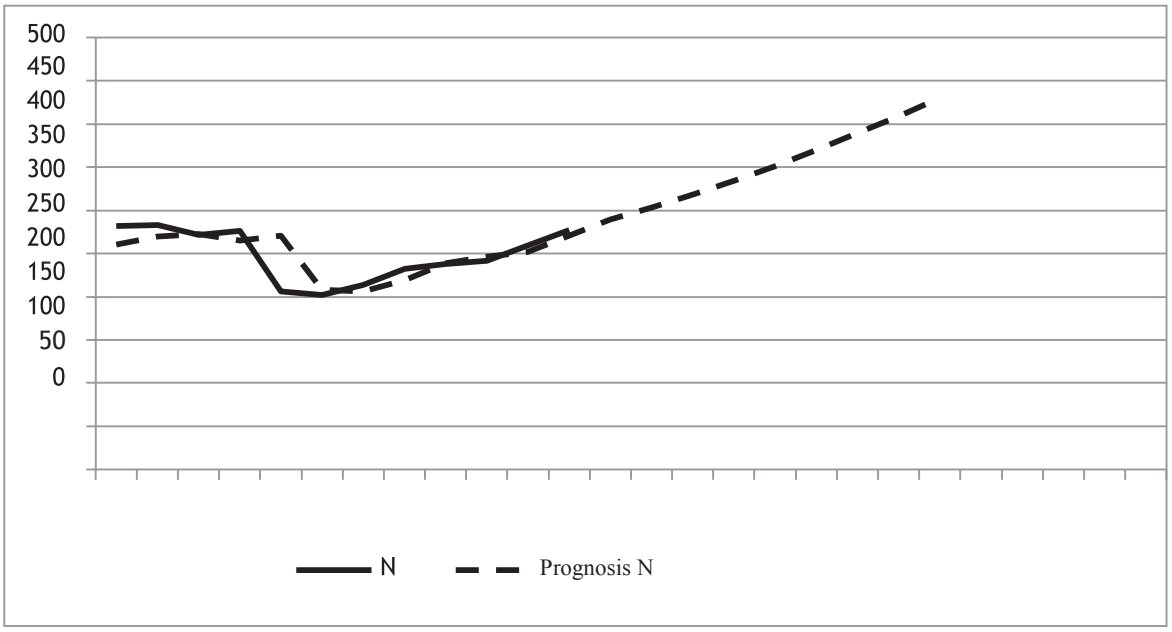

Figure 1 – Schedule of the actual and expected values of an indicator of N (t)

The same way was calculated the number of employed people in the chemical industry.

2017 year – 14.4
2018 year – 14.8
2019 year – 15.3
2020 year – 15.8
2021 year – 16.4
2022 year – 17,1
2023 year – 17,8
2024 year – 18,5
2025 year – 19,3

As a result of the forecast of the chemical enterprises until 2025 and the forecast of number of the employed people in the chemical industry the following has been revealed: increase in number of the employed people in the chemical industry and increase in number of the enterprises of the chemical industry. All this says that it is necessary to increase graduates of specialties for the enterprises of the chemical and petrochemical industry and also to create conditions for the further growth of the chemical and petrochemical industry in Kazakhstan. It is also necessary to prepare new specialties which will be demanded in labor market of the chemical and petrochemical industry.

For good preparation specialists in the chemical and petrochemical industry will be available creation systems of professional standards. Advantages which professional standards give to the system of vocational training, widely are recognized, it is equal as their additional favorable impact on the enterprises and educational institutions [13].

Considering foreign experience of creation of professional-technical education which was used in foreign countries:

1) In Spain all post-secondary (as well as upper secondary) VET (Vocational Education Training) programmes include a compulsory module of workplace training. Only students who have at least one year full-time relevant work experience may be exempted. The work placement lasts between 10 and 20 weeks,

depending on the qualification targeted by the programme [15]. The objectives of work placements include complementing school-based learning to facilitate transition into the labour market, learning about work environments, promoting professional identity and maturity, and evaluating learning outcomes that cannot be assessed outside a work context. Generally, students participate in workplace training after successful completion of other modules included in the programme. But if the type of training or the availability of places in companies requires it, work placement may be completed at another point of the programme. During the work placement students receive guidance and support from a teacher at the VET institution they attend and from the person who supervises their work at the company.

2) In Denmark participation in workplace training has been mandatory in all post-secondary VET (vocational educational training) programmes since 2009 [16]. The aim of making it mandatory was to ensure that programmes are professionally oriented, and relevant to employers and students. In the majority of occupations vocational provision is limited to the availability of workplace training opportunities – institutions cannot increase student intake if work placements are not available for additional students. In a small number of occupations (e.g. teachers, nurses) provision is regulated by government defined quotas. The duration of the work placement is three months in short-cycle (academy) programmes and six months in medium cycle (professional bachelor) programmes and it can take place at one or several companies. VET institutions are responsible for ensuring that the work placement is adapted to the content of the programme. Although not required by law, many institutions prepare an agreement with the company that offers workplace training, setting out the content of the work placement. At the end of their placement students are individually assessed to check that they have acquired the targeted competences.

3) In Belgium (Flanders), the development of a qualifications framework since 2009 aims to make qualifications more transparent and comparable [17]. The intention of the framework is to clarify which programmes lead to the same qualification level and to the same job, making qualifications equivalent regardless of where the students have been taught – in a centre for adult education, a university college, or a competence centre. It will also give more visibility to the different qualifications for both students and employers. In the case of new qualifications, creating a new professional qualification starts with an assessment of how the qualification will translate into an education programme and identifies providers best suited to deliver the programme. The fact that the qualifications are defined by competences should help to support recognition of prior learning.

4) The Integrated Basic Education and Skills Training (I-BEST) provides a strong example of a programme designed to improve labour market outcomes and entry rates to professional training among adults with low basic skills in the USA [18]. Developed in Washington State, it has proved successful and is now being introduced in other parts of the United States. The programme combines basic skills teaching with professional training that yields college credits and contributes to a credential [19]. Courses are provided in occupations in high demand. In Washington State combining basic skills with vocational content is facilitated by the availability of both types of programme at community and technical colleges, and I-BEST programmes are available in every college in the state. Individuals must score below a certain threshold on an adult skill test and qualify for adult basic education to participate. In practice, this translates to around 2% of basic skills students. I-BEST students earn more credits and were more likely to complete a programme than a comparable group of students not participating in the programme. [20].

Today in an education system and vocational education is in a full disproportion. Training of specialists with the higher education on several orders exceeds training of specialists of working professions. It is noted that in this regard in labor market the high specific weight of the "high diploma" unemployed at bigger deficiency of workers with technical and professional education [5].

Ensuring regional use of manpower in all regions of the republic is one of important problems of social and economic development of Kazakhstan. Its decision requires objective definition of a condition of existence of manpower at the moment, the needs of economy for labor and ways of the most effective full use in regions.

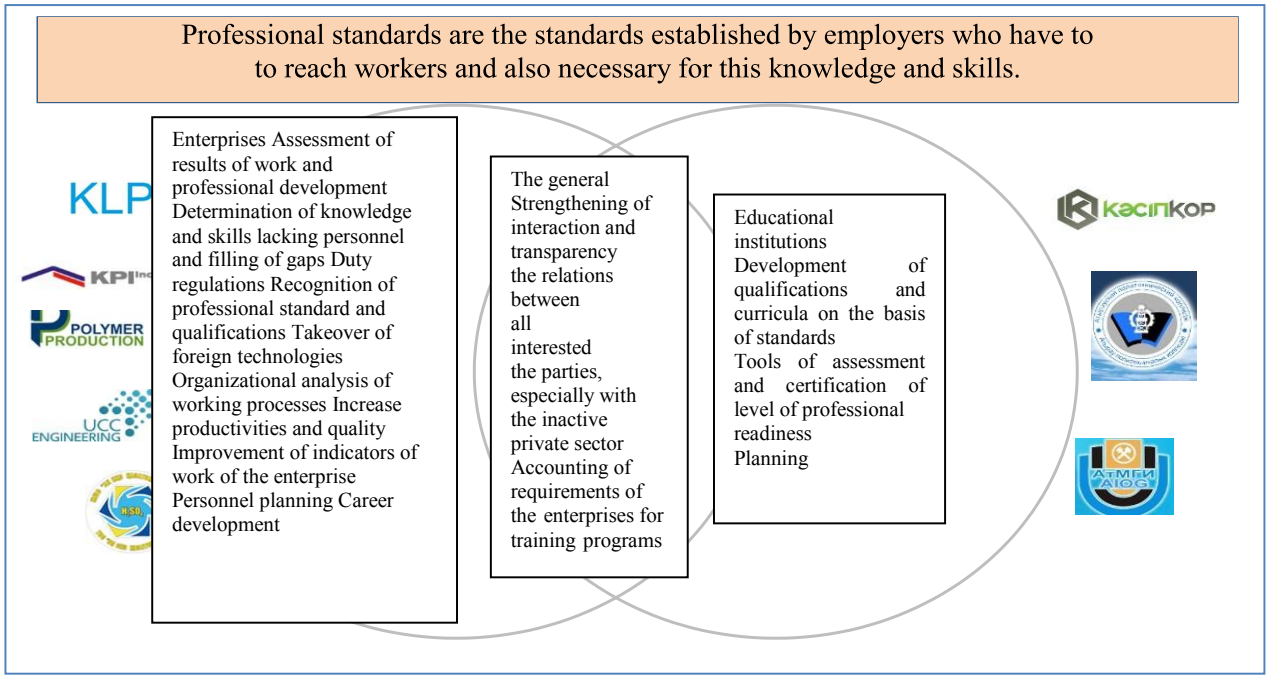

Figure 2 – Professional standards – pledge of harmoniously working system of Professional Education [13, 14]

Conclusion

Successful and sustainable development of economy of any country in many respects depends on security with skilled workers with shots. The modern condition of technical and professional education (further Technical and Professional Education) Kazakhstan doesn't allow to solve this problem according to the available economic and social requirements [5]. Using foreign experience will help for creation good system of technical-professional education in Kazakhstan.

Modernization of technical and professional education is caused by need of quality break for training of the technical and serving work in link with growth of scale and complexity of problems of industrial innovative development of Kazakhstan in the conditions of globalization.

Creation of highly effective national system of technical and professional education will become that core of ensuring sustained economic growth of the country, social stability of the Kazakhstan society, the mechanism of maintenance of stability of employment of youth and growth of the economic potential in the chemical and petrochemical industry Republic of Kazakhstan!

References

1 Morales J. A. Strategic Development in the Petrochemical Industry. Thesis for PhD. University of London and for the Diploma of Membership of the imperial College. – 2007. – p.39.

2 Годовые отчеты НОКа КазМунайГаз на 2016, 2017 гг. [Электрон. ресурс]. – 2017. – URL: http:// www.kmg.kz (дата обращения: 16.01.2018)

3 Бабашева М. Н., Муссина Ж. М. Увеличение эффективности геологических работ разведки и дизайна в Казахстане // Нефть и газ. – 2015. – № 6 (90). – с. 77-79.

4 Егоров О. И., Чигаркина О. А. Приоритеты развития переработки нефти и газа в Казахстане // Нефть и газ. – 2015. – № 4 (88). – с. 42-43.

5 Нурсултанова Л. Н. Нефтегазовая промышленность современного Казахстана (1991-2010). – Алматы, 2010. – с. 206-207.

6 Промышленность Казахстана и его регионов, 2009-2016 [Электрон. ресурс]. – 2017. – URL: stat.

gov.kz/getImg?id=WC16200014008 (дата обращения: 07.02.2018)

7 Магнус Я. Р., Катышев П. К., Пересецкий А. А. Эконометрика: Исследования. – 5-й выпуск. – М.: Бизнес. – 2001. – 400 с.

8 Елисеева И. И. Эконометрика: учебник. – М.: Финансы и статистика. – 2003. – 344 с.

9 Орлов А. И. Эконометрика. Учебник. – М.: Издательство Экзамен, 2002. – 576 с.

10 Dougerti K. Introduction to econometrics: The lane with English. – M.: INFRA-M, 1999. – 402 p.

11 Мхитарян В. С., Сажин Ю. V., Иванова И. А. Эконометрика: учебник. – Саранск: Мордовский Государственный университет, 2014. – 316 с.

12 Durbin J., Watson G. S. Testing for serial correlation in least squares regression I. // Biometrica. – 1950. – № 37 (3-4). – pp. 409-428.

13 The report for expert assessment Professional development of shots in petrochemical and chemical industry Kazakhstan at the expense of professional standards. – Astana, 2015. – p. 38.

14 CEDEFOP. The Dynamics of Qualifications: Defining and Renewing Occupational and Educational Standards. – 2009. – 84 p.

15 Spanish Ministry of Education and Science (2007), Real Decreto 1538/2006, Boletín Oficial del Estado; Spanish Ministry of Education, Culture and Sport, (2011), El portal de la formación professional. – 2007. – URL: www.todofp.es (accessed: 02.12.2011)

16 Danish Agency for Higher Education and Educational Support. Skills beyond School: OECD Review of Post-Secondary Vocational Education and Training, National Background Report for Denmark. – 2012. – URL: http://ufm.dk/en/publications/2012/files-2012/oecd-review-skills-beyond-school-denmark.pdf.p.32 (accessed: 02.12.2011)

17 Álvarez-Galván. OECD Reviews of Vocational Education and Training. A Skills beyond School Review of Kazakhstan José-Luis. – 2014. – pp. 20-28.

18 National Standards Skills Council (NSSC) [Electronic source]. – 2015. – URL: www.ivet.com.au/a/186.html (accessed: 23.10.2017)

19 Musset P. A Skills beyond School Commentary on Flanders [Electronic source] // OECD Reviews of Vocational Education and Training, OECD. – 2013. – URL: www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnFlanders.pdf (accessed: 23.10.2017)

20 Kuczera, M., Field S. A Skills beyond School Review of the United States, OECD [Electronic source] // Reviews of Vocational Education and Training. – Paris: OECD Publishing, 2013. – URL: http://dx.doi.org/10.1787/9789264202153-en (accessed: 23.10.2017)

References

1 Morales J.A. (2007), "Strategic Development in the Petrochemical Industry", Thesis for PhD. University of London and for the Diploma of Membership of the imperial College.

2 "Godovye otchety NOKa KazMunaiGaz na 2016, 2017 gg." (2017), available at: http://www.kmg.kz (Accessed January, 16, 2018) (In Russian)

3 Babasheva M.N., Mussina Zh.M. (2015), "Uvelichenie effektivnosti geologicheskikh rabot razvedki i dizaina v Kazakhstane", *Neft' i gaz*, Vol. 6 No. 90, pp. 77-79. (In Russian)

4 Egorov O.I., Chigarkina O.A. (2015), "Prioritety razvitiya pererabotki nefti i gaza v Kazakhstane", *Neft' i gaz*, Vol. 4 No. 88, pp. 42-43. (In Russian)

5 Nursultanova L.N. (2010), "Neftegazovaya promyshlennost' sovremennogo Kazakhstana (1991-2010)", Almaty. (In Russian)

6 "Promyshlennost' Kazakhstana i ego regionov, 2009-2016" (2017), available at: stat.gov.kz/getImg?id=WC16200014008 (Accessed February, 07, 2018) (In Russian)

7 Magnus Ya.R., Katyshev P.K., Peresetskii A.A. (2001), *Ekonometrika: Issledovaniya*, 5th Edition, Biznes, Moscow. (In Russian)

8 Eliseeva I.I. (2003), *Ekonometrika*, Finansy i statistika, Moscow. (In Russian)

9 Orlov A.I. (2002), *Ekonometrika*, Izdatel'stvo Ekzamen, Moscow. (In Russian)

10 Dougerti K. (1999), *Introduction to econometrics: The lane with English*, INFRA-M, Moscow.

11 Mkhitaryan V.S., Sazhin Yu.V., Ivanova I.A. (2014), *Ekonometrika*, Mordovskii Gosudarstvennyi universitet, Saransk. (In Russian)

12 Durbin J., Watson G.S. (1950), "Testing for serial correlation in least squares regression I", *Biometrica*, Vol. 37 No. 3-4, pp. 409-428.

13 "The report for expert assessment Professional development of shots in petrochemical and chemical industry Kazakhstan at the expense of professional standards" (2015), Astana.

14 "CEDEFOP. The Dynamics of Qualifications: Defining and Renewing Occupational and Educational Standards" (2009).

15 "Spanish Ministry of Education and Science (2007), Real Decreto 1538/2006, Boletín Oficial del Estado; Spanish Ministry of Education, Culture and Sport, (2011), El portal de la formación professional" (2007), available at: www.todofp.es (Accessed December, 02, 2011)

16 "Danish Agency for Higher Education and Educational Support. Skills beyond School: OECD Review of Post-Secondary Vocational Education and Training, National Background Report for Denmark" (2012), available at: http://ufm.dk/en/publications/201 2/files-2012/oecd-review-skills-beyond-school-denmark.pdf.p.32 (Accessed December, 02, 2011)

17 "Álvarez-Galván. OECD Reviews of Vocational Education and Training. A Skills beyond School Review of Kazakhstan José-Luis" (2014).

18 "National Standards Skills Council (NSSC)" (2015), available at: www.ivet.com.au/a/186.html (Accessed October, 23, 2017)

19 Musset P. (2013), "A Skills beyond School Commentary on Flanders", OECD Reviews of Vocational Education and Training, OECD, available at: www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnFlanders.pdf (Accessed October, 23, 2017)

20 Kuczera, M., Field S. (2013), "A Skills beyond School Review of the United States, OECD", *Reviews of Vocational Education and Training,* OECD Publishing, Paris, available at: http://dx.doi.org/10.1787/9789264202153-en (Accessed October, 23, 2017)

Аннотация

В статье рассмотрено формирование химической и нефтехимической промышленности в мире и в Казахстане. Данная отрасль является наиболее перспективной в мире и в Казахстане. Без дальнейшего развития данной промышленности невозможно развития сопутствующих отраслей, и также качественного эффективного роста экономики страны. Казахстан может стать существенным игроком на нефтехимическом рынке мира и что существенно скажется на соотношении сил на мировых рынках нефти. Занятость имеет стратегическую роль в данной отрасли, без ее увеличения невозможно развитие самой отрасли, а значит и дальнейших перспектив сценариев развития рынка нефти в Казахстане.

Түйін

Мақалада әлемдегі және Қазақстандағы химиялық және мұнай-химиялық өнеркәсіптің қалыптасуы қарастырылған. Бұл сала әлемде және Қазақстанда келешегі зор сала болып табылады. Осы өнеркәсіпті әрі қарай дамытусыз ілеспелі салалардың дамуы және ел экономикасының сапалы, тиімді өсуі мүмкін емес. Қазақстан әлемдегі мұнай-химиялық нарықтарда елеуліойыншы бола алады және бұл әлемдік мұнай нарығындағы күштердің қатынасына айтарлықтай ықпал етеді. Бұл саладағы жұмыспен қамтылу стратегиялық рөлге ие, оны арттырусыз саланың дамуы мүмкін емес, сондықтан Қазақстандағы мұнай нарығының кейінгі даму сценарилерінің келешегі де мүмкін емес.

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