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Unemployment in Kazakhstan

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Objectives of thesis

The aim of the thesis is to define trends and specific features of the labor market in Kazakhstan. Partial aim of the thesis is to find out whether employment in Kazakhstan is dependent on the growth of the oil industry in the country.

Methodology

The thesis consists of two main parts and is processed using analytical methods. The first part presents the theoretical foundations of the thesis. The theoretical part is focused on the definition of main concepts in terms of economic theory and methods that are used during the analysis.

The second, practical part is focused on analysis and evaluation of the selected labor market indicators. The Kazakhstan labor market is analyzed in terms of demographic and geographical structure.

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JANDA, K. – TORKHANI, M. Energy, carbon, and economic growth: Brief literature review. Mnichov. 2016.

2. GANDOLFO, G. International finance and open-economy macroeconomics. Berlin: Springer, 2002. ISBN 3-540-43459-3.

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Declaration

I declare that I have worked on my diploma thesis titled "Unemployment in Kazakhstan" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on April 6th, 2020 _____

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Unemployment in Kazakhstan

Abstract

The thesis focused on issues of the labour market in Kazakhstan. The aim of the thesis was to define trends and specific features of the labour market in Kazakhstan. Partial aim of the thesis was to find out whether employment in Kazakhstan is dependent on the growth of the oil industry in the country. The first part of the thesis included the theoretical economical basis and takes into account the specifics of the methodology of data collection on the labour market in Kazakhstan, of the Kazakhstan employment policy, outlines the specific concept of "self-employed" used in Kazakhstan statistics. In the second part, time series analysis (2003-2018) was performed using data by the Kazakhstan Statistical Office (ComStat), by The World Bank and other organizations. According to the results, the situation with unemployment in the Republic of Kazakhstan at first glance is relatively good, compared to other post-Soviet countries and non-CIS countries. Despite this, the real situation in the country differs from the image, made by the official statistics. Numerous experts claim underestimated rates of actual unemployment in KZ. The correlation analysis showed the dependence of employment growth in industry on the development of a significant oil and gas sector in KZ (especially on the volume of crude oil production and oil and gas sector gross value added). Highly qualified, performance oriented and flexible workforce is needed to the further development of Kazakhstan and its full integration into a market economy system.

Keywords: Kazakhstan, labour market, labour-surplus, self-employment, unemployment, unemployment policy, unemployment rate.

Nezaměstnanost v Kazachstánu

Abstrakt

Diplomová práce byla zaměřena na problematiku trhu práce v Kazachstánu. Cílem práce bylo definovat trendy a specifické rysy trhu práce v Kazachstánu. Dílčím cílem práce bylo zjistit, zda je zaměstnanost v Kazachstánu závislá na růstu ropného průmyslu v zemi. První část práce obsahovala teoretický ekonomický základ a zohlednila specifiku metodiky sběru dat na trhu práce a politiky zaměstnanosti v Kazachstánu, nastiňila specifický koncept „sebezaměstnaných“ používaný v kazašské statistice. Ve druhé části byla provedena analýza časových řad (2003–2018) s využitím dat Statistického úřadu Kazachstánu (ComStat), Světové banky a dalších organizací. Podle výsledků je situace s nezaměstnaností v Kazachstánu na první pohled relativně dobrá ve srovnání s ostatními postsovětskými zeměmi a zeměmi, které nejsou členy SNS. Přes toto se skutečná situace v zemi liší od obrazu, který vytváří oficiální statistika. Řada odborníků tvrdí, že míra skutečné nezaměstnanosti v KZ je podhodnocena. Korelační analýza ukázala závislost růstu zaměstnanosti v průmyslu na vývoji významného ropného a plynárenského sektoru v KZ (zejména na objemu produkce ropy a hrubé přidané hodnoty v ropném a plynárenském odvětví). Vysoce kvalifikovaná, výkonově orientovaná a flexibilní pracovní síla je potřebná k dalšímu rozvoji Kazachstánu a jeho plné integraci do systému tržního hospodářství.

Klíčová slova: Kazachstán, míra nezaměstnanosti, nezaměstnanost, politika nezaměstnanosti, přebytek pracovních míst, sebe zaměstnanost, trh práce.

Table of content

List of pictures

List of tables

List of diagrams

List of abbreviations

ComStat	Kazakhstan Statistical Office
GDP	Gross domestic product
GVA	Gross value added
ILO	International Labour Organization
KZ	Kazakhstan

1 Introduction

The labour market as a multifaceted, heterogeneous and dynamic system of socio-economic relations is designed to ensure continuous reproduction and efficient use of labour force. With the development of scientific, technical, technological and informational progress, the role of the labour market is growing. Therefore, the creation of a balanced labour market in order to fill up the growing sectors of the economy with highly qualified personnel is becoming necessary in modern conditions.

Of all the macroeconomic problems that countries face, unemployment poses the greatest threat to their socioeconomic structure and well-being. Unemployment affects almost all aspects of public life. Economy falls as a result of inefficient use of the country's resource potential: unemployed people do not participate in the creation of a national product and income. The social sphere is degrading under the pressure of crime, drunkenness, the decline of social morality, the crisis of family relations, the growth of psychosomatic disorders and other social impacts of high unemployment. State politics can be changed in the direction of strengthening authoritarianism of the government or in the direction of irresponsible populism.

This work is aimed at studying unemployment in Kazakhstan, the former republic of the USSR. According to authorities, the unemployment rate in Kazakhstan is 4,8 percent – a little more than 442 thousand unemployed people throughout the country. Experts say that official statistics are underestimated and there are actually many more people without a permanent job (Radio Azattyq, 2019).

There are various types of unemployment, such as natural and cyclical unemployment, in Kazakhstan. Unemployment in this country has some specific features. For example, low level of unemployment is in the west of the country (in Atyrau and Mangystau) and in the North Kazakhstan, and it is connected with high developed oil production and the oil-and-gas machine building in these regions. It’s interesting, that the highest unemployment rate is observed in the largest city, former capital – in Almaty. I tis the same as in other south regions in Kazakhstan – in Shymkent and Turkestan region (5,2 % in 2018). There are significant labour-surplus and widespreaded self-employment. The

level of training for the unemployment population doesn’t match the needs of labour market.

Statistics show that 65 % of unemployed population are women, it’s almost twice as many as men. This is due to the fact that at the moment one of the main requirements for candidates for vacancies is the availability of special technical education, which is not typical for women education. But the most common unemployment in Kazakhstan is among young people under 25 years old. Its share is 41,2 % of the total number of people applying to employment centers. This is often explained by the fact that young people immediately want to find work "to their liking" and are considered unemployed while they are engaged in these searches. This is also due to the fact that vacancies are filled, mainly, by specialists with a certain work experience. And young people who do not have work experience are not even given the opportunity to get it.

Another important reason for the high level of unemployment in Kazakhstan can be called the mentality and inappropriateness of the population, living before in the socialist system, in a modern market economy. An acute problem is the decline in industrial production in the country. High taxes and administrative duties force private enterprises to cut labour costs, which increases the unemployment rate.

As you can see, there are several problems in the labour market in Kazakhstan. The topic of work can be considered as relevant. Conducting research in this area is important and can serve as the basis for making recommendations for improving the situation.

2 Objectives and Methodology

The aim of the thesis is to define trends and specific features of the labour market in Kazakhstan. Partial aim of the thesis is to find out whether employment in Kazakhstan is dependent on the growth of the oil industry in the country.

The thesis consists of two main parts and is processed using analytical methods. The first part presents the theoretical foundations of the thesis. The theoretical part is focused on the definition of main concepts in terms of economic theory and methods that are used during the analysis. Part of the theoretical part is a description of the methodology of data collection for government statistics in the labour market. Using the method of description, the state policy of labour market support in Kazakhstan is described – especially in the area of employment support, support of labour resource mobility, support of youth employment.

The second, practical part is focused on analysis and evaluation of the selected labour market indicators. The Kazakhstan labour market is analysed in terms of demographic and geographical structure. There are described features and trends in the development of the labour market in Kazakhstan.

It is assumed that Kazakhstan's labour market is highly dependent on one of the key areas of the country's economy – the oil industry. Using the correlation analysis method, the dependence of the employment rate in industry on the selected economic indicators (volume of crude oil production, oil real GDP growth, oil and gas sector gross value added) is tested. With this analysis, it will be concluded whether employment rates increase with the growth of the oil sector in Kazakhstan. The monitoring covers the period 2003-2018.

The hypothesizes of the thesis are:

H1: there is a positive correlation between employment growth in industry and the crude oil production in Kazakhstan in 2003-2018.

H2: there is a positive correlation between employment growth in industry and the oil real GDP growth in Kazakhstan in 2004-2018.

H3: there is a positive correlation between employment growth in industry and the oil and gas sector GVA in Kazakhstan in 2010-2018.

The zero hypothesizes assume the absence of statistically significant variability of variables. The chi-squared distribution test was made, as well the Pearson correlation coefficient was calculated. The correlation table with actual available data was made, then the theoretical frequencies were calculated, using this formula:

$$n'_{ij} = \frac{n_i \cdot n_j}{n} \tag{1}$$

The chi-squared distribution is calculated using this formula:

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{s} \frac{\left(n_{ij} - n'_{ij}\right)^2}{n'_{ij}} \tag{2}$$

The value of the chi-squared distribution is compared to the critical value of chi-squared distribution on the selected significance level and particular degrees of freedom (df). Based on this, the conclusion about the possibility to dismiss the null hypothesis (the hypothesis about the absence of dependence) can be made.

The correlation rate can be expressed using the Pearson correlation coefficient (r) It is a statistical indicator of the strength of a linear relationship between paired data. The calculation is made using the Excel formula (CORREL). Positive r values mean positive linear correlation, negative r values indicate negative linear correlation. A value of zero means that there is no linear correlation between variables. The value closer to 1 or -1 means the strong linear correlation. Furthermore, it is advisable to compare the Pearson coefficient with the values of the following scale (MathStat, 2014, p. 4):

- 0.00 - 0.19 “very weak”,
- 0.20 - 0.39 “weak”,
- 0.40 - 0.59 “medium”,
- 0.60 - 0.79 “strong”,
- 0.80 - 1.00 “very strong”.

3 Literature Review

This part contains the theoretical bases of the thesis: description labour market terms, demand and supply on this market and specifics of their behaviour. There are also described types of unemployment, methods of calculation of main labour market indicators, specific features of methodology of statistical data collection in Kazakhstan. The issue of employment policy in Kazakhstan is also outlined in this part.

3.1 Labour market

To better understand the issues taking place in the labour market, the terms “labour” and “market” are defined. In economic theory, labour is one of the factors of production[1]: “*it is the work done by human beings*” (Krugman, Wells, 2006, p. 282). Work is a complex of human activities that influences personal satisfaction and well-being of a person, its economic and social evaluation and recognition, its personal identity, self-confidence and the level of interactive social cooperation. Work has always been a basic activity to develop and maintain social groups. Step by step the psychological and social links were created from biological dependence of people on work. Thousands of professions have emerged as a result of market development and division of labour. The diversity of incomes has led to the division of the population into different social classes according to incomes (rich, middle, working classes).

Work is defined by Kohoutek (2019) as purposeful human activity, the results of which depend on the objective conditions (natural and social) of the environment and on the characteristics (features) of the personality (especially physical, psychic and professional qualification). In this definition, the role of external and internal conditions for achieving work results is emphasized. Similarly, labour that is "sold" and demanded on the market is influenced by many factors. The place where labour supply and labour demand collide is called the labour market (also known as the job market).

In its most general form, the market is a system of economic relations between sellers and buyers of goods and services, where the market price for the object of exchange is established and the object owner changes. Under the market also understand the

[1] The all factors of production are land, labour, physical capital and human capital.

mechanism bringing together sellers and buyers of goods and services. The different market forces, affecting the private interests of sellers and buyers, adjust market prices, bringing them closer to a balance rate. The market mechanism, balancing supply and demand, establishes a balance of prices and production volumes, becomes a way of economic development based on self-regulation. (Tarasov, 2005, p. 111).

Depending on the commodity traded on the market, different markets are defined: e.g. capital market, market of raw materials, real estate market etc. Among these markets, a special place is occupied by the labour market. Labour is a specific commodity, because the ability to work (the work force as the sum of physical and mental forces), is inseparable from the person, but does not identify with it. Every person has its own work dimension, individual personality and biological dimension, its distinctive wishes, values and rights (Dvořáková et al., 2007, p. 67). Historically, this has not always been the case.

Societies in earlier times used the unfree labour (e.g. in slavery, serfdom). During the era of feudalism, workers could work for themselves and independently regulate the time and intensity of labour, but they could also be forced to work for the feudal lord or give him the part of the produced goods as the form of a tax. Moreover, many people in that period could not freely choose the profession, but often "inherited" the job of their parents: the son of a farmer became a farmer, the son of a wine maker – continued the traditions of the family, etc.

At the end of the 18th century, a school of thought in which man was perceived as a "machine" was formed. It expresses a contemporary rationalistic view of the world and an effort to "calculate everything", including man and his work. Scientists and philosophers tried to grasp human beings and to argue the claim of "man a machine". However, in the end, J. O. de la Mettrie had to say: "*Man is so complicated a machine that it is impossible to get a clear idea of the machine beforehand, and hence impossible to define it*" (Metrrie, 2016, p. 84).

In the second half of the 19th century sociology, the science of society, was formed. Its task was to study human behaviour. At the end of the 19th century, the behaviour of people at work and the tools of its management, the essences of manufacturing organizations and the patterns of people's behaviour in these organizations became the

subject of scientific research. The introduction of new technologies and machines created tensions between employees and employers. At the turn of the 19th and 20th centuries, there were mass strikes in industry. Employers began to realize the need to find compromises. Some changes in the social conditions of work and communication took place (Vojtovič, 2011, p. 32, 38).

Over time, the nature of the work and the approach to its offering and buying on the labour market has changed. Modern labour market has these specific characteristics (Zenchenko, Vartanova, 2013, p. 303-304):

- inseparability of the goods (labour) ownership from its owner. Labour is the process of spending labour from its carrier. In the process of labour selling, special relationships arise,
- significant contact times between seller and buyer. A transaction in the labour market involves the beginning of a long relationship between seller and buyer,
- the action of non-monetary factors of the transaction (working conditions, microclimate in the team, prospects for professional growth),
- the presence of a large number of institutional structures, which include the labour legislation system, various institutions and services for regulating employment, state programs in the field of labour and employment, etc.,
- high degree of individualization of transactions. They are very diverse, because each employee is unique in its own way, and each workplace in one way or another differs from another and requires specific skills from the job applicant.

The essence and main purpose of the modern labour market is the allocation of labour (labour force) among employers, or more precisely – between sectors and regions (Dvořáková, 2007, p. 68). On the labour market there is an interaction between the entities operating on it, i.e. between employees, employers and the state or their authorities. Today's relations and processes in the labour market can be described using economic theory.

The theoretical foundation of the labour market was laid by the representatives of the classical school in economics. Thus, the basis of the teachings of the Scottish economist Adam Smith (1723-1790) was the thesis of free competition as a condition for the optimal

use of material, financial and human resources. He argued that the volume of employment in the country's economy is determined by the average wage rate of one employee. If the average wage rate of one employee increases, then the possibility of providing employment decreases (Tarasov, 2005, p. 111).

Another representative of the classical school, the English economist David Riccardo (1772-1823) substantiated the provision on the dependence of wages on labour supply. The dependence is manifested in the fact that an increase in wages above the minimum level, necessary for normal reproduction of the population, leads to an increase in labour supply, and this, in turn, affects a decrease in wages. A contemporary of D. Riccardo – French economist Jean-Baptiste Say (1762-1832) formulated a market law of the supply and demand interaction and achieving on this basis an equilibrium price for the subject of sale, including labour. The theory of the labour market appeared in the variety of studies of such outstanding scientists and economists as Alfred Marshall (1842-1924), John Maynard Keynes (1883-1946) and others (Tarasov, 2005, p. 111).

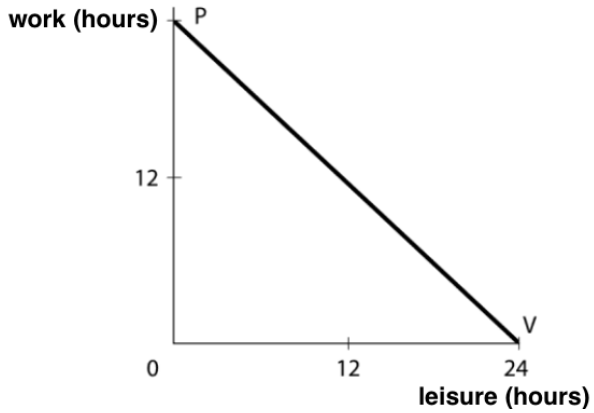
The labour market is very important economic, political and social sphere. Given the social-economic role of the employment, it is always in the center of attention of many different economic doctrines and theories that give ambiguous interpretations of the labour market mechanism (Lemanova, 2014, p. 97). For a correct understanding of the concept of employment and unemployment should consider the main forces in the market – the side of supply and demand.

3.1.1 Labour supply

Labour supply is dependent on a person – more precisely, it depends on how much work a person is willing to offer in the labour market, in accordance with the legislation in force. For each person, this means a choice between work and leisure time. The time available to the person is limited by the length of his life, and therefore he is forced to consider how to deal with it. More time spending in work means less time for leisure and other non-job activities (Image 1). Given this, the person must compare benefits from work and leisure and define, if there will be more profit form the goods, could bought for wages, or from leisure benefits.

An individual labour supply can be understood as a work offer for one company or also as a work offer by one person. The market labour supply represents different amounts of labour, that are offered and are able to be offered by their owners on a particular labour market at a changing wage rate (Soukupová et al., 2018, p. 387, 428).

Image 1 Curve of the possible time allocation by person



Source: Jurečka et al., 2018, p. 260

Individual labour supply is affected by so called substitution effect and income effect. They are the impacts of the wage rate on decision-making between leisure and work.

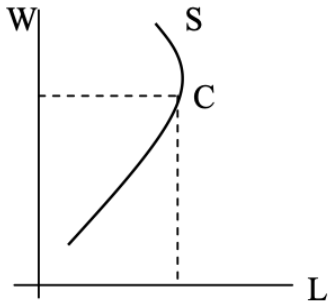
The substitution effect expresses the impact, when higher wages increase interest in work. People begin to use more of their available time for work and reduce the use of leisure time. In this situation leisure time is "too expensive" to be devoted to entertainment instead of well-paid work (Kuchař, 2007, p. 14).

The income effect occurs when the household has a stabilized level of needs saturation and is not forced to offer more work. It reaches the standard of living at a rising income level with a given amount of offered work. In general, the substitution effect prevails over the income effect (Kuchař, 2007, p. 14).

If the substitution effect outweighs the income effect, the amount of offered work increases with the increase in the wage rate. Otherwise, when the income effect outweighs the substitution effect, the amount of labour offered decreases as the wage rate rises.

Due the substitution effects the labour supply curve is growing, because if the wage rate increases, the number of people who want to work increases. Then, due the prevalence of the income effect, the curve becomes reverse. The labor supply curve is graphically displayed using the following chart (Image 2).

Image 2 Labour supply curve



W – wage rate

L – amount of work offered

S – labour supply curve

C – wage rate, when the person begins to prefer leisure to work

Source: Schiller, 2004, p. 273.

According to Dvořáková (2007, p. 67) the main determinants of the labour market supply are:

- real wages, their current and expected levels,
- ownership rates of households,
- non-working income, including government transfers,
- demographic trends, i.e. number and structure of population by sex and age,
- the rate of economic activity of the population,
- working habits, culture and traditions.

3.1.2 Labour demand

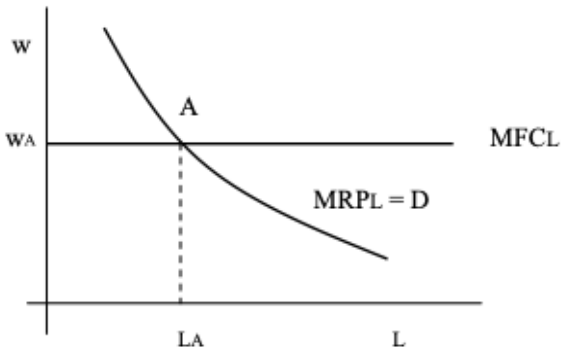
Labour demand is the amount of work that an employer hires at different wage rates over a given period. The basic unit representing the demand side on the labour market are enterprises, or rather employers. Their main goal is to maximize profits. For this reason, the size of demand is also affected by other factors. The hiring of new employees probably causes the growth of overall production of the company, but at the same time cause the growing costs (wages) (Kuchař, 2007, p. 40).

A company, maximizing own profit, hires such amount of work that balances the income from the marginal labour product with marginal costs, or wage rate. Income from

marginal labour product is a multiple of marginal labour product and product price. The marginal labour product is the increase in the amount of output resulting from the additional unit of labour (Macáková, 2009, p. 161).

The labour demand curve in the perfect competition is displayed by the image 3. "*Perfect competition describes a market structure so highly competitive that any individual participant has but a negligible impact on prices. It is a theoretical situation used primarily as a benchmark against which actual market structures are compared*" (English Editorial Service, 2016).

Image 3 Labour demand curve



W – wage rate
L – amount of work offered
D – labour demand curve
MRP_L – marginal income
MFC_L – marginal costs

Source: Schiller, 2004, p. 273

At the wage rate W_A the optimum employment L_A is determined by point A in image 3, the marginal income from the labour product coincides with the wage level. Since the marginal income from the labour product is declining (the MRP_L declining curve) and the wage rate is constant, if the company employs fewer than L_A workers, the MRP_L will be greater than W. If it hires more workers, the MRP_L will be less than W. It means, with less labour (than L_A), with increasing labour, profit increases, while with higher labour (than L_A), it declines.

According to Dvořáková (2007, p. 67-68) the main determinants of the demand side of the labour market are:

- the price of labour, the level of the real wage or wage scale,
- demand for products and services and their price,
- work productivity,

- price of other inserts,
- expected future revenue,
- free labour available on the labour market.

On the labour market, individual labour demand and market labour demand are differentiated. The market demand is the horizontal sum of the individual demands of all companies that request labour (Václavíková, Kolibová, Kubicová, 2009, p. 30).

3.1.3 Labour market equilibrium

The classical concept of the labour market functioning was abided by A. Smith, D. Ricardo, J.-B. Say, A. Marshall, D. Clark, A. Pigou. According to them, the norm of a market economy is full employment, and the best economic policy is a state non-intervention policy. Adherents of this concept believe that the labour market, like all other markets, operates on the basis of price equilibrium, and the main market regulator is the price – in this case, labour price (wages). (Lemanova, 2014, p. 98). Winkler and Wildmanová (1999, p. 54) also reported, that the tool of the labour supply and demand harmonization is labour price – wage.

With the help of wages, labour demand and supply, and their balance is maintained. According to the model of price equilibrium, an individual "invests in qualifications" until the rate of return on these investments decreases. The labour price flexibly responds to market needs, increasing or decreasing depending on supply and demand. If there is equilibrium in the labour market, then unemployment is impossible. It's important to note, that full employment, in accordance with the classical theory, is not the absence of unemployment, but the situation on the labour market, when any interested person can find a job. So, A. Pigou described the concept of "voluntary unemployment", according to which a certain part of employees, being dissatisfied with the current level of wage, voluntarily refuses to look for work (Trunin, 2009, p. 137).

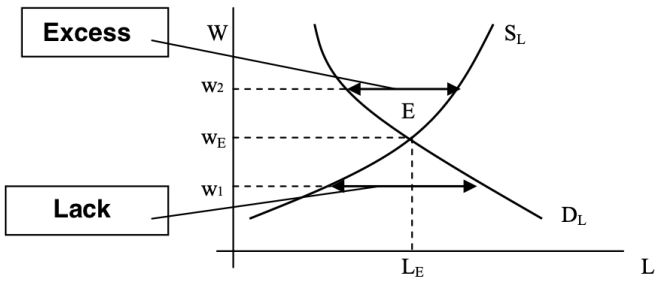
As already mentioned, in accordance with the classical model, the labour demand is presented by employers, and the labour supply is carried out by hired workers. According to the classical concept of the labour market functioning, workers are not interested in the monetary equivalent of wages, but in the volume of goods and services that they can purchase for the monetary expression of wages. According to the classics, wage workers,

concluding labour contracts with employers, are able to influence the amount of real wages. They proceeded from the fact that real wage rates are flexible and can both increase and decrease. Because of this, equilibrium is achieved in the labour market (Lemanova, 2014, p. 98).

According to Kuchař (2007, p. 15) labour market equilibrium occurs when aggregate market supply is equal to aggregate market demand. It is a situation where households offer as much work as they want at a given real wage. In the same time businesses hire as much workforce as they want to hire at a given real wage. At this point of intersection, the economy works at the level of the natural rate of unemployment, i.e. at full employment. Absolute equilibrium on the labour market is unrealistic, from both economical and sociological point of views. Because of this, the aim is achieving at least a certain degree of equilibrium.

Image 4 shows the equilibrium situation on the labour market. The letter S_L indicates the market labour supply curve and D_L denotes the market demand for labour. Point E indicates the equilibrium situation on the labour market. If the wage rate (W) deviates from the equilibrium wage rate (W_E), then there is an excess (surplus) or a lack of labour on the market. When the wage rate decreases, there is a lack of labour in the labour market, and if the wage rate rises, there is a surplus of labour.

Image 4 Equilibrium on the labour market



W – wage rate

L – amount of work offered

E – equilibrium situation

Source: Macáková, 2009, p. 165

Let's assume that the market wage rate is higher than the equilibrium. The result is unemployment. Then there will be unemployed people who agree to work for a lower than the prevailing wage rate. Following them, employed workers will agree to such a decline. Consequently, the wage rate is reduced, and equilibrium is achieved. Events will develop

similarly if the salary rate is below the equilibrium. Then a situation is possible when part of the jobs will remain unoccupied, that is, the labour demand will be larger than its supply. At the same time, there will always be such employers who will hire workers at a higher wage rate. Following them, other employers will agree with the wage growth. As a result, wages will rise to an equilibrium level and the labour market will be balanced (Trunin, 2009, p. 138).

J. Keynes showed that the state has real opportunities to ensure effective demand in the economy through the implementation of a stimulating monetary and fiscal policy. With the same real wages (defined by the classics, and later neo-classicists, as the equilibrium labour price) effective demand will allow to occupy a greater number of people who want to work. Thanks to this, it's possible to reduce unemployment, thus the equilibrium point will shift to the right (Benava, 2011, p. 141).

3.2 Unemployment

Unemployment is a situation when people want to work and look for work, because it is a source of livelihood for them, but they still cannot get any reasonable and affordable paid work (Hartl, Hartlová, 2000). The unemployment is caused by the mismatches between the labour supply and demand (ILO, 2019, p. 4).

A significant part of unemployment arose at the beginning of the 19th century, while social payments appeared only in the 20th century after a stubborn struggle of the working class. At present, laws on employment in different countries usually provide for the payment of unemployment benefits, compensation for dismissal, when transferring to a new job, the payment of scholarships during studies, the creation of conditions for retraining and re-involvement of the released workers in the labour process (Zenchenko, 2013, p. 304).

Unemployment is also a socio-economic phenomenon due to the lack of labour demand on the market for part of the workforce. In each country there are groups of people who are unemployed but are not actively seeking it, e.g. such as young children. In order to consider unemployment, it is necessary to allocate these groups of people who do not need to look for a job and therefore unemployment do not relate to them (Jadourek, 2003).

3.2.1 Types of unemployment

There are usually defines these types of unemployment:

- Frictional unemployment: it depends on the natural movement of labour between regions, jobs and life cycle stages. It occurs when people are looking for the first job after graduation or when people move to another city. It is rather short-lived, has no significant negative impact on the economy, it is rather a benefit. It is tagged also as voluntary unemployment. From the perspective of monetarists, frictional unemployment is natural and arises as a result of changes in the labour market, under the influence of the emergence and disappearance of some enterprises and the existence of imperfect (asymmetric) awareness of subjects (Rojíček et al., 2016, p. 290).
- Structural unemployment arises in case of a mismatch in the qualification structure of labour offered and demanded. For example, there may be a surplus of miners on the labour market, but also a lack of nurses. As a cause of this phenomenon there can mentioned changes in the structure of the economy. Another cause may be due to technical progress, where the development of automated or robotized workplaces replace people labour force. The term "technological unemployment" is also used for this situation. It is very regionally different and tends to last long in the economy. For these reasons, it is considered to have the most negative effects on the economy (Jurečka et al., 2018, p. 253).
- Cyclical unemployment is the result of changes in the demand level linked to the economic cycle. Cyclical unemployment is referred to as involuntary unemployment, and it is "*the sum of involuntary unemployment and the short-run variations in structural and frictional unemployment from their full-employment levels*" (Jagdish, 2011, p. 312).
- Seasonal unemployment is part of the natural unemployment rate of monetarists and the new classical macroeconomics. It reflects the seasonal course of labour demand for some jobs. Sometimes it is classified as a part of the frictional unemployment rate (Rojíček et al., 2016, p. 290).

The problems of the employment development are exclusively relevant for the economy of each country, facing the need to preserve, increase and rationally use the existing labour potential. Without an analysis of the labour market, further integration of employment policy elements is not possible. One of the key indicators that informs about the labour market is unemployment rate. Measurement of this indicator is related to understanding other important terms in relation to the labour market – labour force, unemployed and employed person, economically active / inactive population, etc.

3.2.2 Unemployment rate

As stated, unemployment rate is a kay indicator of the labour market and it widely used around the world. For example, data on the unemployment rate are able for over 210 countries and regions, almost 180 countries have post-2010 data (ILO, 2019, p. 4). International and time comparability of this indicator is important, because of this the international method of its calculating is mostly used.

By the International Labour Organization (ILO, 2019, p. 6) „*the unemployment rate is calculated as the percentage of persons in the labour force who are unemployed* ":

$$\textbf{Unemployment rate} = \frac{Unemployment}{Labour\ force} \text{ x } 100 = \frac{Unemployment}{Employment + Unemployment} \text{ x } 100 \quad (3)$$

Employment includes persons "*of working age, who during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit*"(ILO, 2019, p. 6).

Employed persons can be contemporary "at work" or also not to be at work due to temporary absence from their job, or to working-time arrangements (e.g. shift work, flexible time, compensatory leave for overtime etc.). Therefore, the main criterion for being classified as employed is the inclusion in any remunerated work activity. It is therefore irrelevant whether the work activity of these persons was of a permanent, temporary, seasonal or occasional nature, and whether they had only one or more concurrent jobs, or whether they studied, received a pension at the same time. The category of employed persons includes all remunerated employers and all persons employed in own enterprises.

According to the international methodology (ILO), the following groups of persons are also included among the employed:

- military personnel,
- persons on maternity leave who worked before taking up employment (not additional or parental leave).

According to the international methodology, the following groups are not included among the employed:

- persons on maternity leave who did not work before joining,
- persons on further maternity (parental) leave.

They are classified as economically inactive or rather as unemployed persons (if they meet the ILO criteria for being classified as unemployed) (CZCO, 2019).

Unemployment includes persons „*of working age who were not in employment, carried out activities to seek employment during a specified recent period and were currently available to take up employment given a job opportunity* "(ILO, 2019, p. 6).

According to Eurostat (2010), unemployed person is defined by these criterions:

- working-age[2]: it means the age 15 and above by ILO (2019, p. 6). By the Eurostat (2010) unemployed person is someone aged 15 to 74 or, in some countries as Italy, Spain, UK, Iceland, Norway – aged 16 to 74 years,
- without work during the reference week,
- available to start work within the next two weeks (or to start within the next 3 months if the person has already found a job),
- actively having sought employment at some time during the last 4 weeks.

The classification in this category is not related to the category of registered job seekers at labour offices, nor to the fact whether or not these persons receive unemployment benefit or other social benefits or allowances (CZCO, 2019).

[2] The employment / uneployment rates can be calculated for the specific age group and/or gender, particular geografphical area etc. (Eurostat, 2014).

Labour force is then the sum of persons in employment and in unemployment and presents the current supply of labour, can be used for the "*production of goods and services in exchange for pay or profit*" (ILO, 2019, p. 6).

Economically inactive are all persons aged 15 and over, usually residing in the monitored area, who did not belong to the category of "workforce" in the reference period, i.e. they cannot be classified as employed or unemployed (CZCO, 2019).

3.2.3 Methodology of statistical data collection in Czech Republic

The unemployment rate in the Czech Republic is calculated by the Czech Statistical Office (CZCO). Statistical data on employment and unemployment within the CZSO are published mainly from the results of the Labour Force Survey (LFS). The scope of the survey and the employment and unemployment indicators fully comply with the definitions of the ILO and the Eurostat methodological recommendations. The main objective of this survey is to obtain regular information about the situation on the labour market, enabling its analysis from various perspectives, especially economic, social and demographic (CZCO, 2019).

The general unemployment rate expresses the ratio of the unemployed number to the total labour force (in percent). Number of unemployed and total labour force are constructed according to international definitions and recommendations applied in the LFS.

Based on an agreement with the Ministry of Labour and Social Affairs, a new indicator of registered unemployment has been used since January 2013 – the so-called "share of unemployed persons" (the share of available job applicants aged 15-64 among all residents of the same age). This indicator replaces the previously published "registered unemployment rate", which measures only all available job applicants to economically active persons only (CZCO, 2012).

3.2.4 Methodology of statistical data collection in Kazakhstan

Official statistics on the labour market in Kazakhstan (KZ) are compiled by the Statistics Committee (ComStat) according to ILO rules. In Kazakhstan, a study of population employment has been carried out quarterly since 2001, during which about

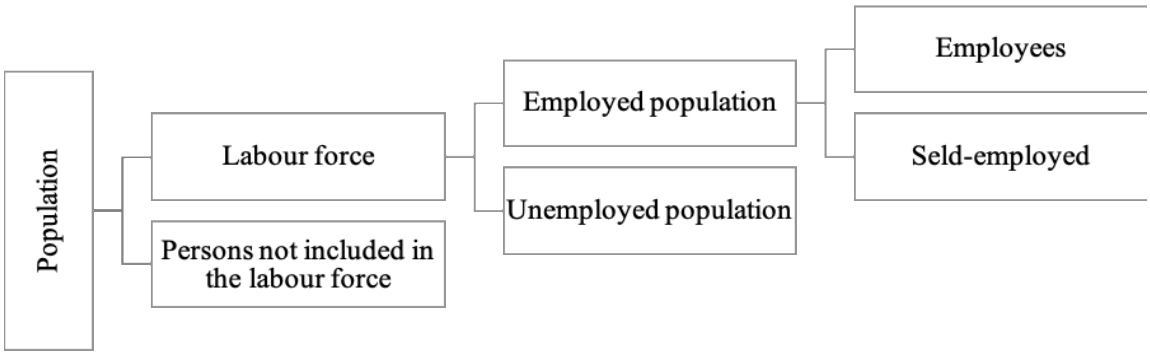
75 thousand people aged 15 years and older are examined. The study covers all regions of the country (Kalkabaeva, 2014, p. 2).

The legislation of the Republic of Kazakhstan on employment is based on the Constitution of the Republic of Kazakhstan, consists of Law KZ No. 203-VI and other regulatory legal acts of the KZ. The legislation of the KZ on employment applies to citizens of the Republic of Kazakhstan, oralmans, foreigners, stateless persons living in the Republic of Kazakhstan. International treaties ratified by the Republic of Kazakhstan take precedence over the Law No. 203-VI and apply directly, unless the international treaty implies that its application requires the publication of a law (KZ, 2020).

According to the Law no. 203-VI, the labour force in KZ (Image 5) is an employed and unemployed population. Law includes its definitions:

- employed person – an individual carrying out activities for payment or by generating income through the use of property, production and sale of goods, carrying out tasks, and the provision of services,
- unemployed person – an individual who is searching for work and is ready to start work.

Image 5 Labour force in the population structure of Kazakhstan



Source: author

Many experts say that the official statistics on unemployment in Kazakhstan have several shortcomings. They say that in all of Kazakhstan, the unemployment rate is underestimated, mainly due to so called “unproductive self-employed”.

Self-employed workers are those who work at their own risk with one or more partners. As a rule, they do not conclude formal labour contracts and, accordingly, often do not have normal working conditions, adequate social protection and voting rights through the effective representation of their interests by unions and similar organizations (IMF, 2014, p. 6).

As a result of the adoption of the new methodology, most of the unproductively self-employed who did not register as unemployed were classified as “inactive”. This made it possible to maintain the overall unemployment rate, instead of rising. Although, the total number of unemployed, unproductively self-employed and part of the “inactive” without good reason is very large (Oshakbaev in Kuatova, 2017).

3.3 Employment policy in Kazakhstan

The Government of the Republic of Kazakhstan develops the main directions of the public policy in the field of employment and organizing their implementation. It also approves the procedure for establishing a quota for attracting foreign labour to the KZ and its distribution between the regions. The Government should perform other functions assigned to it by KZ laws. The central executive bodies in KZ responsible for the development and implementation of public and government programs, monitoring the creation of job places, submit relevant information about the employment (Law KZ no. 203-VI).

Public employment policy includes two main areas (Dvořáková, 2007, p. 82):

- regulation of the level and duration of unemployment (active employment policy),
- social protection of people affected by unemployment (passive employment policy).

An active employment policy includes a set of government actions aimed to remove the roots causes involuntary unemployment. The aim of implementing an active employment policy is to turn the real unemployment into natural unemployment, in terms of level and duration. If this goal is achieved and current unemployment does not exceed its natural level, then the government can remain inactive in the labour market. An active

employment policy is one of the main social priorities of the Government of the Republic of Kazakhstan. Ensuring decent employment is the basis of social protection of the population, the most important condition for the development and realization of the human resources potential. It is the main tool for increasing social wealth and improving the quality of life. Starting from 1991, the regulation of the labour market and the sphere of employment in the Republic of Kazakhstan was carried out mainly in the form of special employment programs for the population (Dyusenbaeva, Abel'dinov, 2012).

Employment Program-2020, approved by Decree of the KZ Government No. 316 dated March 31, 2011 define these main objectives (KZ, 2012):

- involving self-employed, unemployed and low-income people in active employment programs,
- development of human resources for the implementation of the State Program for the Forced Industrial and Innovative Development of the Republic of Kazakhstan,
- improving the system of targeted social assistance.

It should be noted that the implementation of the Program is primarily aimed at training, employment, assistance in opening and expanding own businesses at the place of residence. In the case of absence of such opportunities, there is a support for facilitating voluntary relocation from settlements with low economic potential to settlements with high economic potential and centers of economic growth in order to expand the availability of productive employment. In this regard, the implementation of the Program is carried out in the following areas (Dyusenbaeva, Abel'dinov, 2012):

- training and assistance in the employment of self-employed, unemployed and low-income population,
- promotion of rural entrepreneurship,
- increasing labour mobility.

Also, the actual Strategy "Kazakhstan-2050: the new course of the established state" takes in the account the issue of labour market modernizing and increasing the level of social security of the population.

4 Practical Part

At the beginning of the part, a brief description of Kazakhstan is presented (hereinafter, the abbreviation – KZ is used). To study the labour market indicators of the Republic of Kazakhstan, the main labour market indicators for the period 2003-2018 or until 2019 if available) were studied: economically active population, employed population, unemployed population, unemployment rate. The analysis of unemployment in certain sectors of the economy is made. It is analysed which demographic groups are most vulnerable to unemployment.

4.1 Characteristics of the Republic of Kazakhstan

Kazakhstan (Republic of Kazakhstan, KZ) is a state in the center of Eurasia, most of which relates to Asia, the smaller – to Europe. It borders in the north and west with Russia, in the east with China, in the south with Kyrgyzstan, Uzbekistan and Turkmenistan. It is washed by the waters of the inland Caspian and Aral Seas. It has no access to the sea and is the largest country in the world with such a feature.

The length of the country from east to west is 2963 km, and from north to south – 1652 km. Surface area of the KZ is 2 724,9 thousand sq. km (The World Bank, 2020). Kazakhstan is the link between the large and fast-growing markets of China and South Asia and the markets of Russia and Western Europe, providing road, rail and sea links to the Caspian Sea.

Administratively, it is divided into 14 regions and 3 cities of republican significance: Nur-Sultan, Alma-Ata and Shymkent. In addition, there is a city with special status, Baikonur, which was leased by Russia until 2050 and for this period is endowed with a status corresponding to the city of federal significance of the Russian Federation. Economically-geographically, Kazakhstan is divided into Central, Western, Eastern, Northern and Southern regions.

4.1.1 Population of the Republic of Kazakhstan

According to CountryMeters (2020), at the end of 2019, the population of Kazakhstan was 18 896 318 people. In 2019, the population of Kazakhstan increased by

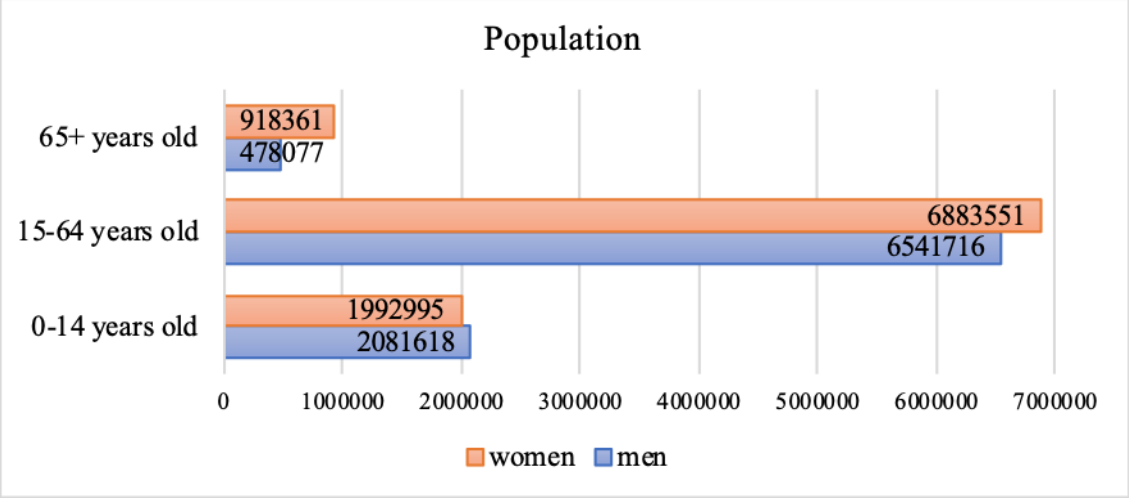
approximately 288 239 people. Considering that the population of Kazakhstan at the beginning of the year was estimated at 18 608 079 people, the annual increase was 1,55 %.

Here are the key demographic indicators for Kazakhstan for 2019 (Country Meters, 2020):

- Born: 418 310 people
- Dead: 165 054 people
- Natural population growth: 253 256 people
- Migration growth: 34 983 people
- Men: 9 054 486 (estimated at December 31, 2019)
- Women: 9 841 832 (estimated as at December 31, 2019)
- The average life expectancy at birth is 68,5 years (years) (this is below the average life expectancy in the world, which is around 71 years)
- Age composition: 21,6 % of people under 15 years of age, 71 % of people aged 15 to 65 years, 7,4 % of people over 64 years of age.

The distribution of the population by age group and gender at the beginning of 2020 is presented using the diagram 1. As it can see, the age pyramid of Kazakhstan has a stationary or rejuvenating type. Such a pyramid is typical for developed countries, which are characterized by a decrease in fertility. Despite this, with a relatively low mortality rate, the population of such countries has a relatively high life expectancy.

Diagram 1 Population of the Republic of Kazakhstan



Source: based on CountryMeters, 2020

The area of Kazakhstan is comparable with the territory of Western Europe, while the population density in the country is one of the lowest in the world. Population density is 6,9 people per square kilometre. The ethnic composition of the Republic of Kazakhstan is multinational. More than 100 ethnic groups and 18 faiths live in the country (MNE KZ, 2019, p. 13).

The population forecast for Kazakhstan is positive. It is expected that by 2030 more than 20,3 million people will live in Kazakhstan, by 2050 – almost 23 million people (UN, CountryMeters, 2020).

In 2006, Kazakhstan moved from the category of countries with income below the average to the category of countries with income above the average. In 2014 and 2015, progress in poverty reduction almost stopped, which was the result of slow growth and adverse changes in labour market conditions. But amid rising wages and increasing social assistance, poverty continued to decline to 8,5 percent in 2018, which was the second consecutive year when poverty declined (The World Bank, 2020).

4.1.2 Economy of the Republic of Kazakhstan

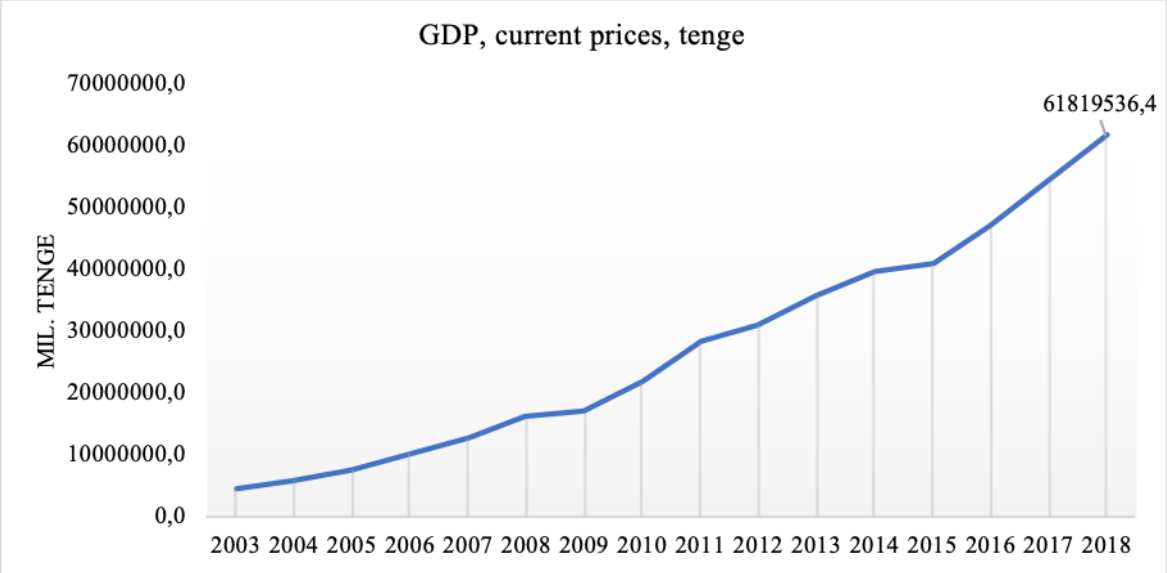
Kazakhstan has the largest and strongest economy in Central Asia. Supported by rising oil production and prices, the economy of Kazakhstan grew on average by 8 % per year until 2013, while in 2014 and 2015 it was not in recession. In 2014, difficult external conditions for Kazakhstan caused a widespread slowdown in the pace of economic development and led to accelerated inflation (The World Bank, 2020).

The volume of Kazakhstan's GDP (in mln. Tenge, current prices) is illustrated using Diagram 2. For comparison, Diagram 3 using the World Bank data is also created – in billions of US dollars.

The dynamics of the GDP index in dollars differs from that in the national currency, which is caused by fluctuations in the exchange rate. Economic growth is largely dependent on the ongoing trade war between China and the United States, which causes a significant global economic downturn or even recession, adversely affects the dynamics of production and trade in goods, leads to lower world prices for commodities and external demand for Kazakhstani exports.

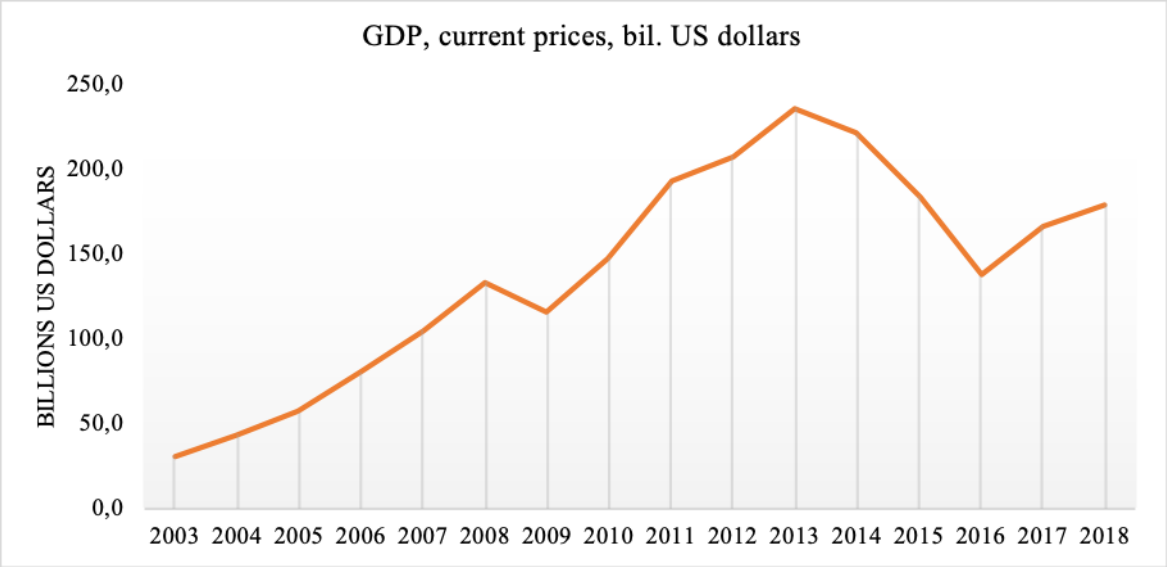
In the first half of 2019, Kazakhstan's real GDP grew by 4,1 %, which was a reflection of the dynamic growth of household and business expenses. According to estimates, the poverty rate fell to 8.4%. In 2020, economic growth will continue to slow due to stagnation in oil production and a number of other factors (The World Bank, 2020).

Diagram 2 GDP of KZ, current prices, mln. tenge



Source: based on ComStat, 2020

Diagram 3 GDP of KZ, current prices, bil. US dollars



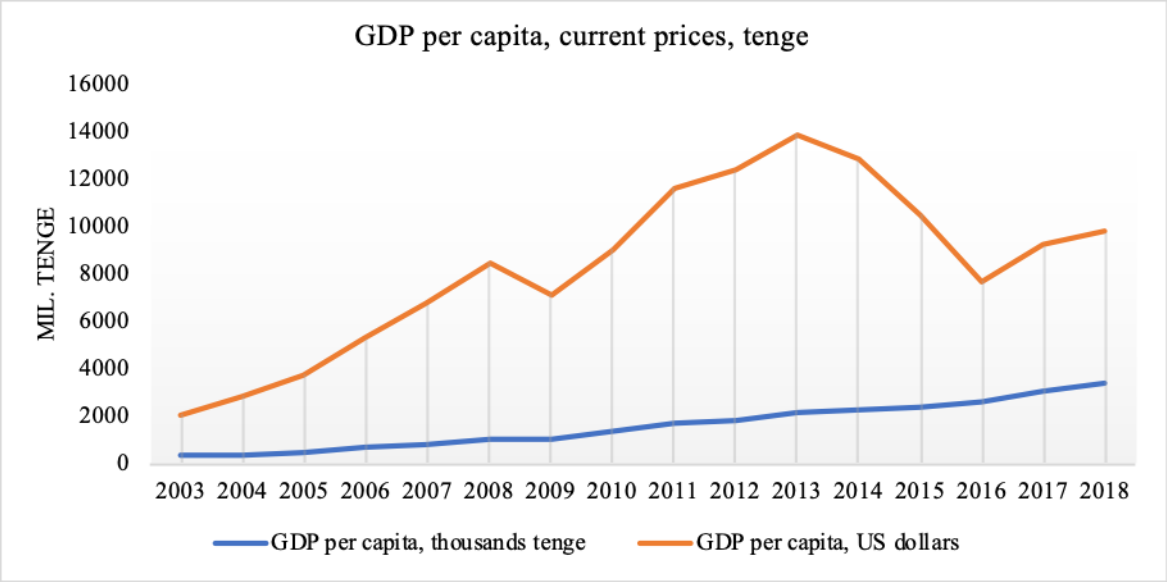
Source: based on The World Bank data, 2020

GDP per capita indicator in thousand tenge has a rising tendency, as does the country's GDP indicator. In 2018, according to the latest ComStat (2020) data, GDP per

capita reached 3,38 mln. tenge (981,5 US dollars). For comparison, according to World Bank (2020) data, the average GDP per capita in 2018 in the EU – 36 570 US dollars, in the Czech Republic – 23 078 US dollars.

Converted to USD dollars (current prices), the development of this indicator is not as smooth as this indicator in the domestic currency (tenge). For example, in 2009 and 2016 there is a significant decline in the indicator, caused by changes in the exchange rate. Development of GDP per capita indicator in thous. tenge and in US dollars is illustrated by a diagram 4.

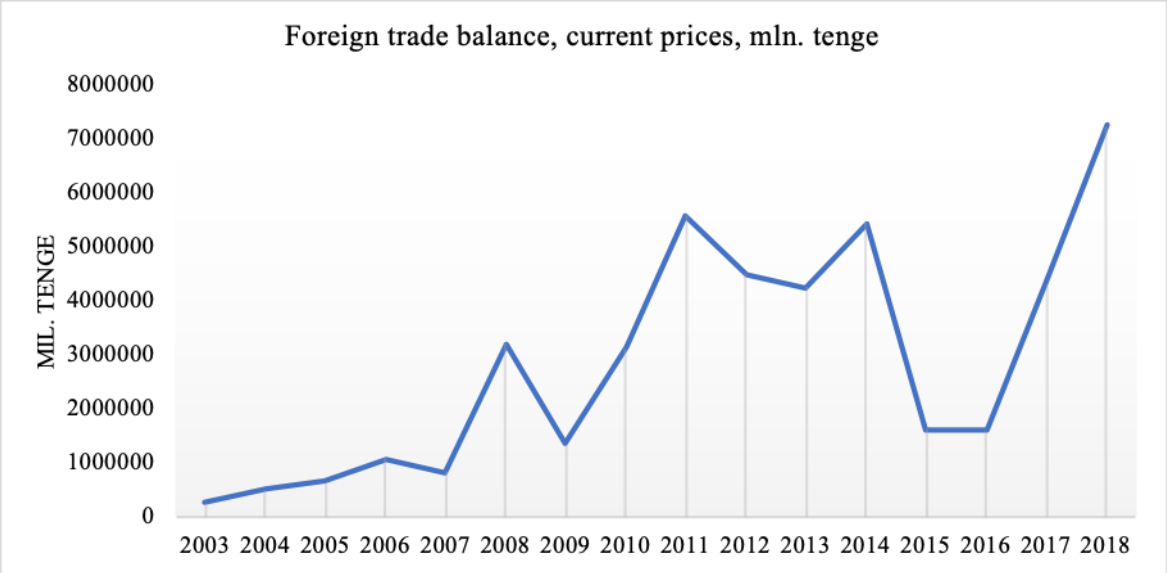
Diagram 4 GDP per capita, KZ, current prices, thousands tenge, US dollars



Source: based on ComStat, 2020

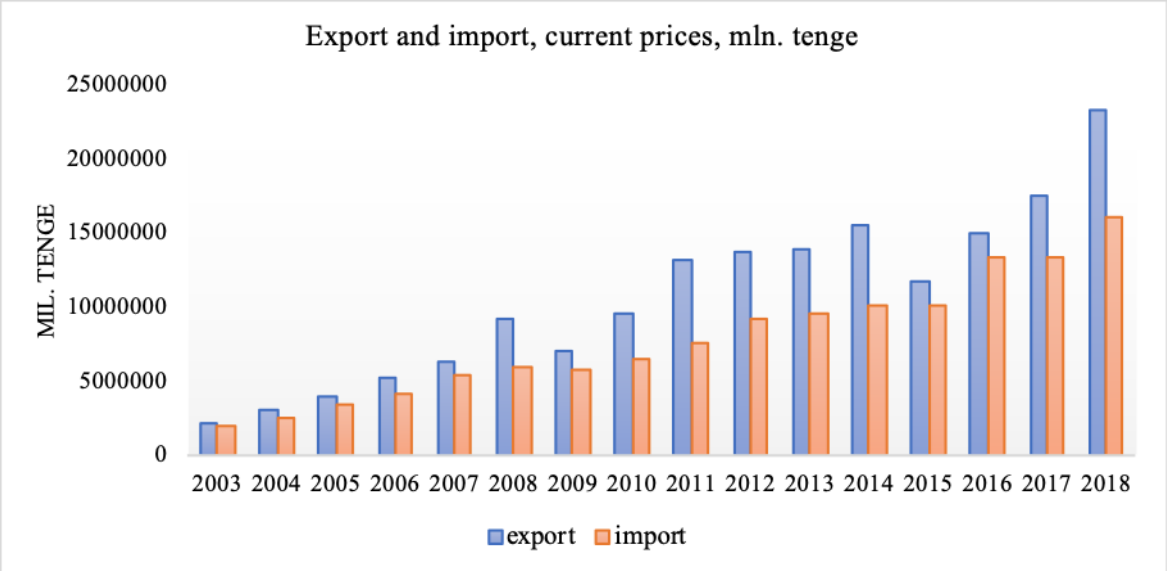
The KZ foreign trade balance has been positive for a long time, thanks to the high value of exports (Diagram 5, Diagram 6). The negative fact is that there is a high commodity concentration of Kazakhstani exports. Domestic production in most cases is uncompetitive, in this regard, the lion's share of exports is still accounted for by commodities such as oil and gas condensate, metals, grain, etc. Concerning the import of goods, on the contrary, significant commodity diversification is observed, while most of the imports are investment and intermediate goods, i.e. goods practically not produced in Kazakhstan. In addition, a substantial portion of consumer goods also comes from abroad (Tamenova, 2014).

Diagram 5 Foreign trade balance of KZ, current prices, mln. tenge



Source: based on ComStat, 2020

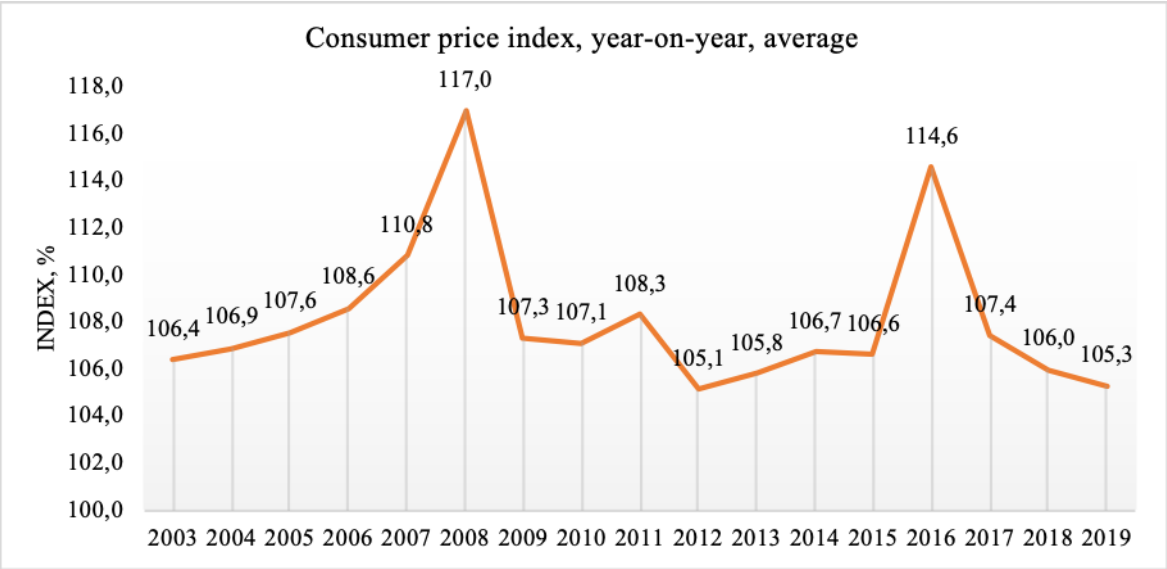
Diagram 6 Export and import, KZ, current prices, mln. tenge



Source: based on ComStat, 2020

The dynamics of the consumer price indicator is illustrated by the diagram 7. The peaks of 2008 and 2016 are related to crisis periods in the economy. After the jump in 2016, which followed the devaluation of the tenge, there has been a downward trend in inflation over the past three years. In July 2019, annual inflation reached 5,4 % compared to 4,8 % in March 2018, which was partly due to a faster rise in food prices and a recent increase in import prices.

Diagram 7 Consumer price index, KZ, 2003-2019



Source: based on ComStat, 2020

4.1.3 Industry of the Republic of Kazakhstan

In Kazakhstan, industry has a decisive influence on the level of economic development. This is the main branch of the economy of the Republic of Kazakhstan. The GDP growth rate of the Republic of Kazakhstan is on average about 7,9 %. In the industry of Kazakhstan, the following sectors have the main impact on the economy (InformBuro, 2019):

- non-ferrous metallurgy;
- ferrous metallurgy;
- chemical and petrochemical industry;
- mechanical engineering;
- building materials industry;
- transport.

The leading positions in the industry were occupied by the mining of uranium and oil and gas reserves (InformBuro, 2019). The total volume of oil reserves in the country is about 30 billion barrels, or 1,7 % of world reserves. According to this indicator, Kazakhstan is in 12th position in the world, behind the countries of the Middle East, Latin America, as well as Russia and the USA. Recoverable gas reserves in the republic amount to 3,9 trillion cubic meters. m, which corresponds to 1,7 % of world reserves. A significant

part of natural gas resources is concentrated in Atyrau (43 %), Mangistau (29 %) and West Kazakhstan (19 %) regions (Forbes, 2020).

Almost half of the world's tungsten deposits, a fifth of uranium and lead, and almost a quarter of chromium ores were found in Kazakhstan. In the manufacturing sector, metallurgy occupies a leading position, followed by food production, engineering and oil refining (InformBuro, 2019).

According to ComStat (2020), in January-February 2020, compared with January-February 2019, the extraction of crude oil, natural gas and metal ores increased. The volumes of production of tobacco products, oil refining, pharmaceutical products, metallurgical industry and mechanical engineering increased. At the same time, the production of chemical products decreased. An increase in industrial production was observed in 15 regions of the republic.

The dynamics of the oil and gas and commodity sectors of Kazakhstan is presented in the table 1. ComStat will publish data only for the period 2010-2018: gross value added (GVA) of the industry sectors and volume index – year-on-year change of the physical volume of industry products. GVA index (year-on-year change) was made by the author. There is a stable upward trend in terms of the financial value generated by all industrial sectors (GVA growth). For example, in 2018, the gross value added of the oil and gas sector increased by almost a third compared to 2017, the GVA of the raw material sector - by a fifth. For non-oil, non-gas and non-raw materials sectors, a slowdown in the growth rate of GVA has been observed.

Table 1 Sectors of the Kazachstan Industry (Gross value added, volume index), 2010-2018

	2010	2011	2012	2013	2014	2015	2016	2017[4)]	2018[4)]
Oil and gas sector									
GVA[1)], bil. tenge	5518	7168	8013	7545	7925	7140	8498	9847	13032
GVA index[2)], %	n/d	129,9	111,8	94,2	105,0	90,1	119,0	115,9	132,3
Volume index[3)], %	111,9	105,5	100	95,2	99	99,5	102,3	107,4	108,6
Non-oil and non-gas sector									
GVA[1)], bil. tenge	15597	18574	20515	25352	28726	31644	35839	41349	44674
GVA index[2)], %	n/d	119,1	110,5	123,6	113,3	110,2	113,3	115,4	108,0
Volume index[3)], %	104,6	108,2	107,6	109,6	105,4	103,6	100,9	103,2	103
Raw materials sector									
GVA[1)], bil. tenge	5233	6412	6619	7099	7701	7096	8188	9878	11922
GVA index[2)], %	n/d	122,5	103,2	107,3	108,5	92,2	115,4	120,6	120,7
Volume index[3)], %	102,4	105,7	96,5	105	100,4	98,9	99,9	107,8	104,4
Non-raw materials sector									
GVA[1)], bil. tenge	15883	19330	21909	25798	28951	31687	36150	41318	45784
GVA index[2)], %	n/d	121,7	113,3	117,7	112,2	109,5	114,1	114,3	110,8
Volume index[3)], %	107,4	108,1	108,3	105,7	104,9	102,7	101,5	103,1	104

[1)] GVA – gross value added, mln. tenge

[2)] GVA index – year-on-year change of the gross value added, %, author's calculation

[3)] Volume index – year-on-year change of the physical volume of products, %

[4)] The calculations were made in accordance with the new KZ methodology.

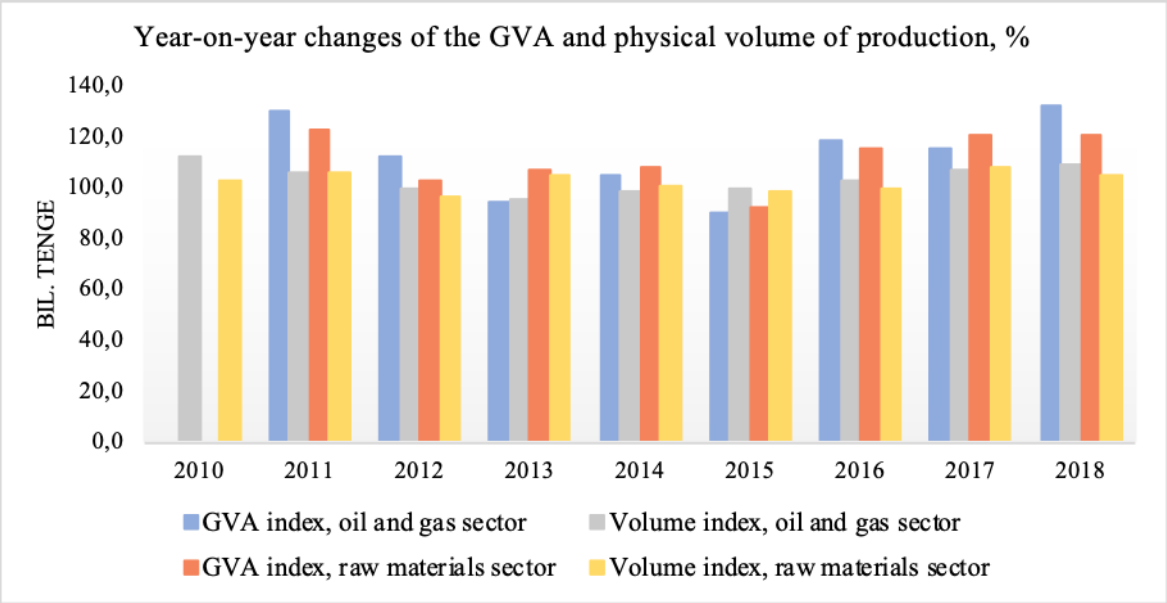
Source: ComStat, 2020

GVA of the crude oil and natural gas production (the primary sector) forms more than half share on the entire GVA in the oil and natural gas industry of KZ (57,8 % in 2018). GVA of the primary mining industry forms more than three-quarters share on the entire GVA in the raw-materials sector (77,2 % in 2018). This share does not change significantly since 2010.

Diagram 8 compares the growth rate of the physical production volume of these sectors and the gross value added generated. GVA and Volume indexes from Table 1 are used to create the diagrams. It is evident that in the period 2016-2018 the growth rate of GVA exceeds the growth rate of the volume of physical production, which is positive for

the economy. There is little increase in the physical volume of oil, gas and raw materials, but these volumes make it possible to achieve significantly higher value added in financial terms. This can be combined with more advantageous KZ business operations, a change in exchange rates and an increase in the price of this source after a significant fall in y / y. 2013-2015.

Diagram 8 GVA and physical volume of oil & gas and raw materials sectors, year-on-year changes, %



Volume index 2010 – n/d.
Source: based on ComStat, 2020

The industrial sector plays a key role in creating jobs in Kazakhstan. The sector employs more than 20 % of all workers employed in the country's economic sector (InformBuro, 2019). The following is a detailed analysis of the labour market in Kazakhstan, taking into account role of the oil, gas and mining industry in this field.

4.2 Timeline analysis of labour market in Kazakhstan

Furthermore, there is an analysis of the available time schedules in relation to the labour market area in KZ. Attention is paid to the rate of employment and unemployment, the number of employed and unemployed persons, employment in individual sectors of the economy, the position of men and women in the labour market, youth unemployment, wage levels etc.

4.2.1 Labour force

According to the latest ComStat (2020) data, at the end of 2018, the number of economically active population in Kazakhstan was 9,138.6 thousand people (about 49,9 % of the total population). Of these, 8 695 thousand people were employed (including the so-called "self-employed"), 443 600 were unemployed. The dynamics of the labour force in the period from 2003 to 2018 is illustrated by Diagram 9. In the course of this period, only in 2014 and 2015 there was a decrease in the number of labour force (by 0,9 and 0,8 %, respectively). In 2014 and later the data began to be generated on the basis of the results of a sample survey of 208 275 households (4,48 % of the total number of households), the frequency of the survey is once a year. Changes in the methodology can affect this decline. In 2018, the labour force volume increased by 1,2 % compared to 2017.

Diagram 9 Labour force, thousands people, KZ, 2003-2018

Source: based on ComStat, 2020

The largest increase in the economically active population is observed in the oil regions and the capital. More than half of the economically active population lives in cities: the share over the year increased from 57,7 % to 58,6 %, the number increased by 2,9 %, to 5,3 million people. The share of rural residents, respectively, decreased from 42,3 % to 41,4 %, the number decreased by 0,7 %, to 3,8 million people.

The largest number of economically active population is concentrated in the Almaty region: a little more than 1 million people. The top three also included Almaty (985,5 thousand people, an increase of 2,7 % over the year) and Turkestan region (818,7 thousand people, the number decreased by 0,5 % over the year). The maximum annual increase in the economically active population among the regions of the Republic of Kazakhstan was in the Mangystau region: immediately by 14,1 %, up to 321,3 thousand people. Significant growth was also shown by Nur-Sultan (+ 6,6 %) and Atyrau region (+ 6,2 %).

The reduction in labour resources over the past year was observed in five of the 17 regions of Kazakhstan. Most notably, manpower decreased in the North Kazakhstan (-1,6 %), Pavlodar (-0.9 %) and Kyzylorda (-0,9 %) regions. The highest concentration of economically active population in cities was noted in Karaganda (79,6 %), Aktobe (70,4 %) and Pavlodar (69,8 %) regions. In rural areas, the majority of the economically active population lives in Turkestan (82,5 %), Almaty (76,2 %) and Zhambyl (59,9 %) regions (InBusiness.kz, 2019).

Among the economically active population, men predominate slightly: their number is 4,8 million, the growth for the year is 2,2 %. The share for the year increased from 51,2 % to 51,6 %. The number of women among the economically active population increased over the year by only 0,6 %, to 4,5 million, the proportion, respectively, decreased from 48,8 % to 48,4 %.

4.2.2 Employed population

The total labour force consists of employed and unemployed people. Employment growth is one of the important factors of economic growth. The variability in Kazakhstan of employment indicators is related to the impact of both internal and external factors (Kapanova, Gizzatova, Yantursina, 2018, p. 256). The data presented within the considered years are subject to fluctuations and can be conditionally divided into three periods. In the first period - 2003-2012. the absolute value of the indicator increased - during these years the number of employed people increased by 1585,4 thousand people. Over the next two years, 2014-2015, the number decreased and reached the value of 6294,9 thousand employed people in 2015. Then the third period of gradual growth began.

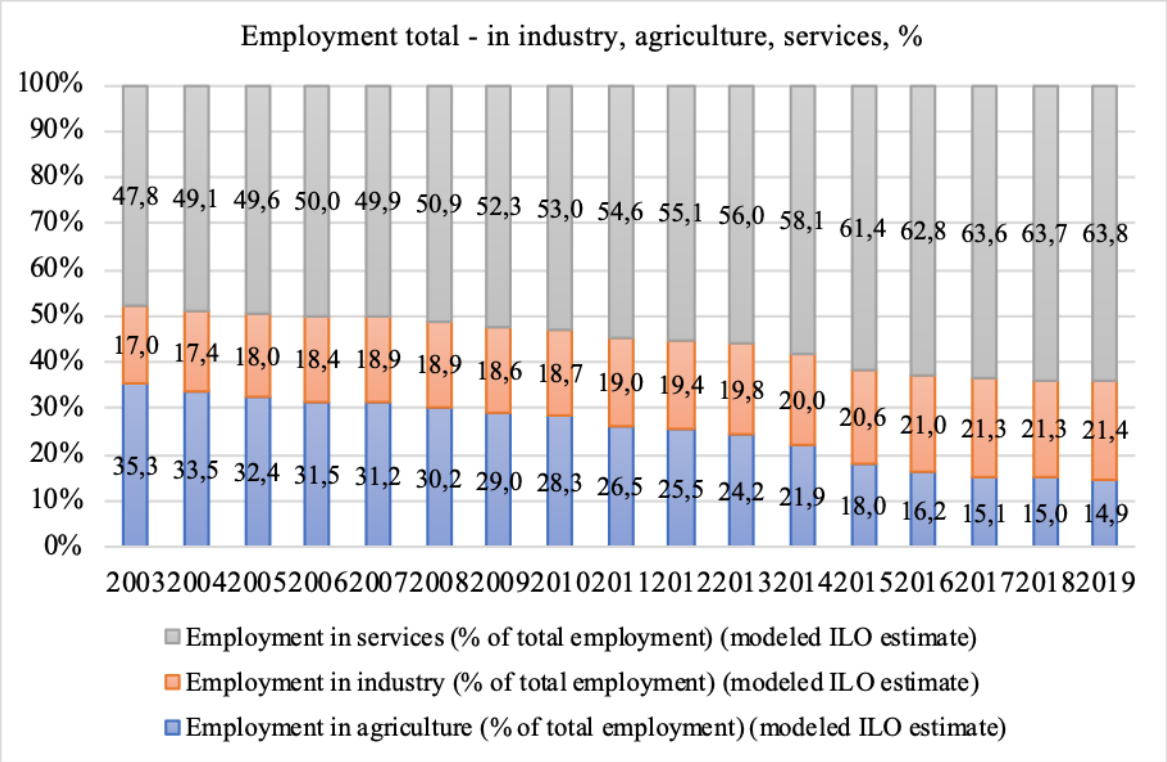
In 2018, the total number of employed persons reached 8695 ths. people, which represents an increase of 1,3 % compared to 2017. More than three quarters of the employed population is made up of employees (76 % in 2018) and less than a quarter – by self-employed people (24 % in 2018) (Diagram 10). The share of self-employed has been decreasing in the long term: only in 2016 there was a 0,5 % increase compared to 2015. At the beginning of the period under review, the share of self-employed in the total employment of the country was 39,4 %.

Diagram 10 Employed population (share of employees and self-emloyed), KZ, 2003-2018

Source: based on ComStat, 2020

The structure of the labour market is changing in terms of employment in individual sectors of the economy (Diagram 11). Over time, the percentage of the population employed in the services sector in Kazakhstan is growing – in 2019 reached 63,8 percent. For comparison, in the early 2000s, less than half of the country's population was employed in the tertiary sector. The share of people employed in industry is gradually increasing, although the growth rate is slower than in the tertiary sector. In 2019, 21,4 % of people were employed in industry (compared to 17 % in 2003). Employment in agriculture has a significant downward trend. In 2003, more than a third of people were employed in this sector, while in 2019 only 14,9 % were employed there. Trends in the employment structure point to the increasing importance of the services sector and the decreasing importance of agriculture. It is obvious that industry is still playing a rather important role in the economy of KZ, which is also reflected in the employment structure.

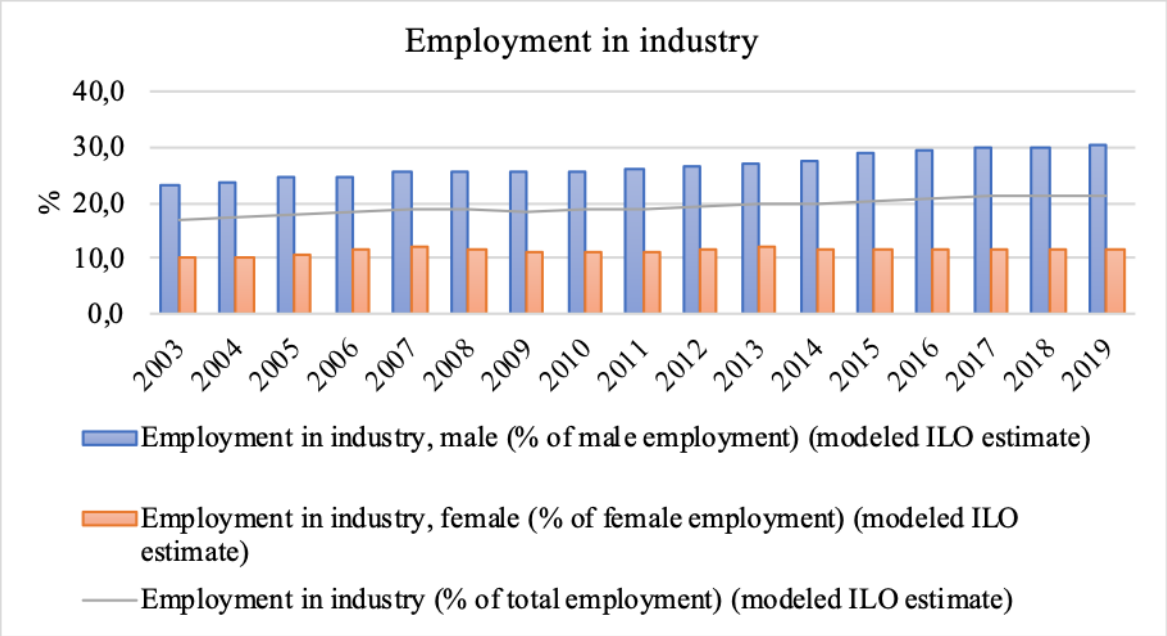
Diagram 11 Employment in industry, agriculture and services, KZ, 2003-2019



Source: based on The World Bank, 2020

The structure of employment in detail in the economic sectors in terms of employees' gender is illustrated by the following diagrams. It is apparent that typically more men than women are employed in the industry (almost three times more) and these divisions continue to widen (Diagram 12). It is understandable that many professions in industry are typically male, requiring some physical strength and skills that women do not have. However, the growing gender gap in employment signals an increasing problem in terms of discrimination against women in the labour market.

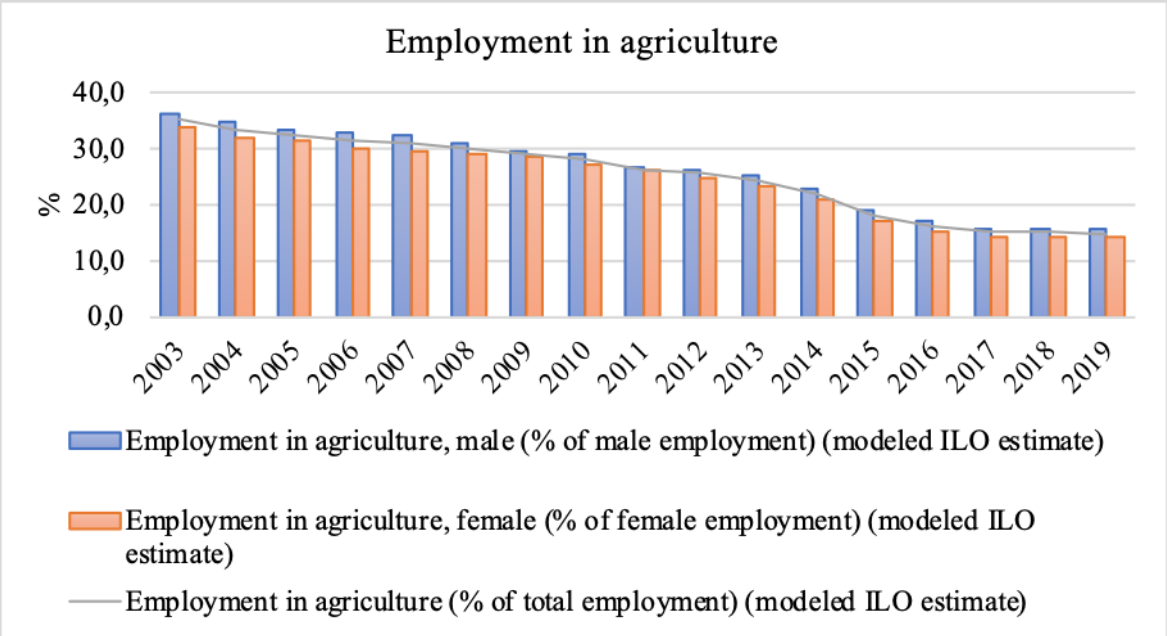
Diagram 12 Employment in industry, KZ, 2003-2019



Source: based on The World Bank, 2020

There are almost no gender employment differences in the agricultural sector. In agriculture, about 1% more men than women are employed in the long-term (Diagram 13).

Diagram 13 Employment in agriculture, KZ, 2003-2019



Source: based on The World Bank, 2020

In the tertiary sector, there is a trend opposite to that trend of industry: about 10 % more women than men are employed in services (Diagram 14). However, the differences

are not as pronounced as in the industrial sector. Women are mainly employed in areas that are traditionally considered female. This education is 73,7 %, health care – 74 %, wholesale and retail trade – 69,3 %, the provision of accommodation and food services – 69,2 % (Kapanova, Gizzatova, Yanturzina, 2018).

Diagram 14 Employment in services, KZ, 2003-2019

Source: based on The World Bank, 2020

According to ComStat, more than 16.1% of employed Kazakhstanis work in the field of trade. The main increase in the number of employed people occurs in the provision of accommodation and food services, other individual services, water supply and waste disposal, art and entertainment. At the same time, there is a decrease in the number of people employed in such areas as real estate transactions, information and communications, and agriculture (Konanov, 2019).

4.2.3 Employment in oil and gas sector

According to the ComStat there were 315 companies engaged in the extraction of crude oil and natural gas registered in Kazakhstan in January 2019 (187 of them were active). All these companies are divided into:

- 22 large enterprises (employ more than 250 people), including 22 active companies,
- 23 medium-sized enterprises (employ from 101 to 250 people), including 20 active companies,

- 270 small enterprises (employ from 5 to 100 people), including 145 active companies.

The main location of these enterprises looks as follows: Almaty city – 114 enterprises (of which 78 are active), Mangistau region – 47 (23 active), Aktobe region – 21 (15 active), Kyzylorda region – 13 (11 active), Zhambyl region – 5 (3 active).

AO KazTransOil is one of the largest employers in the Republic of Kazakhstan. According to its latest report, there were employed 7152 people in the end of 2017. The decrease in the number of employees by 9,6 % compared to 2016 is due to the implementation of measures to bring non-core activities and support services to the competitive environment (catering, cleaning, transportation of personnel). The share of full-time workers in the reporting period was 100 %. The personnel structure of the company over the past years has remained stable. The share of male workers amounted to 81,4 % in 2017. The largest share of the company's personnel is employees 30 to 50 years old (55,8 %). The average age of staff in 2017 was 43 years. Average work experience was 12 years.

Also, more than 11 thousand people work in the other large company – AO KazTransGas, which controls a network of gas pipelines (over 18 thousand km long) and gas distribution pipelines (over 46 thousand km long), 56 compressor stations with 342 gas pumping units and 3 underground gas storages. Other oil and gas enterprises such as AO SNPS AktobeMunagaz, AO Embamunaygaz, TOO TengizShevroil, AO Kaazhanbasmunay, AO Mangistauunaygaz and others create jobs for several thousand workers each.

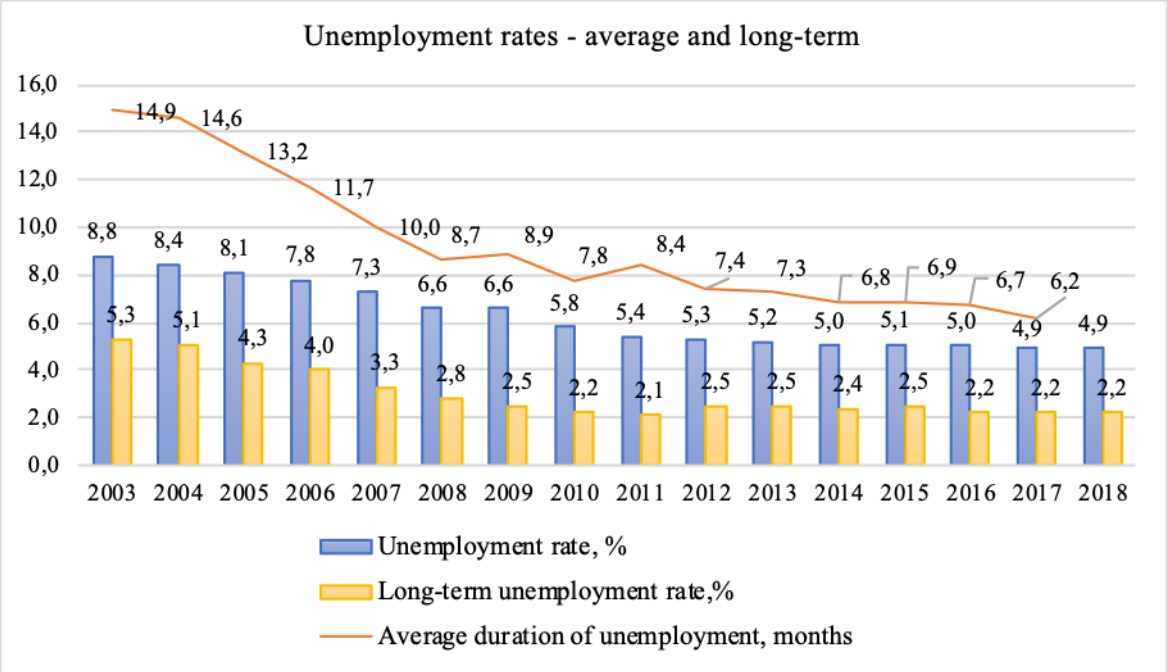
The oil and gas industry is closely connected with the service sector (which includes engineering, well drilling, geological and geophysical work, construction, etc.) due to the fact that a significant part of the production work is carried out at the expense of contracting companies. In addition, the engineering sector is the main supplier of industrial oil and gas equipment. The chemical industry provides various types of chemicals and products for industrial production (enhanced oil recovery, drilling, etc.). Digitalization of the industry and the supply of equipment is connected with IT sector.

The attractiveness of the oil and gas sector for the labour force is still high due to the competitiveness level of wages in this industry. According to the ComStat and analytical company Finprom.kz (2019), the share of the number of employees in the oil and gas sector on the total industry employment increased from 6,7 % in 2014 to 7,5 % to 2018. The number of employees in the enterprises of crude oil and natural gas production amounted to 47,5 thousand people in the beginning of 2019. Regionally, the largest numbers of employees were concentrated in Atyrau, Mangistau and Aktobe regions.

4.2.4 Unemployed population

Another important indicator, which is paid close attention when considering the labour market, is the unemployment rate. The results of its research and monitoring are also used in the development of government policy directions. According to ComStat (2020), the dynamics of the unemployment rate indicator is illustrated in Diagram 15. The diagram shows the overall unemployment rate - according to ComStat, it reached 4,9 % in 2018 (as well as in 2017). The index was slightly different in previous years. The highest unemployment rate (8,8 %) was at the beginning of the study period, in 2003. Then its level gradually decreased, up to the present time. ILO data (The World Bank, 2020) do not differ significantly from national statistics - the maximum discrepancies are 0,1-0,02 %. However, The World Bank (2020) provides newer data for 2019, which are not yet in the national statistics of the KZ. It is indicated that the unemployment rate in the KZ in 2019 increased and amounted to 5,43 %. In addition to the average unemployment rate, Diagram 12 shows the long-term unemployment rate. Average duration of unemployment was 6,2 months in 2018. From official statistics it can be concluded about the positive tendencies in terms of lowering the level of long-term unemployment and average job search time.

Diagram 15 Unempoyment rates (average, long-term), 2003-2018



Average duration of unemployment – excluding pensioners, full-time students, persons with disabilities classified as “unemployed”

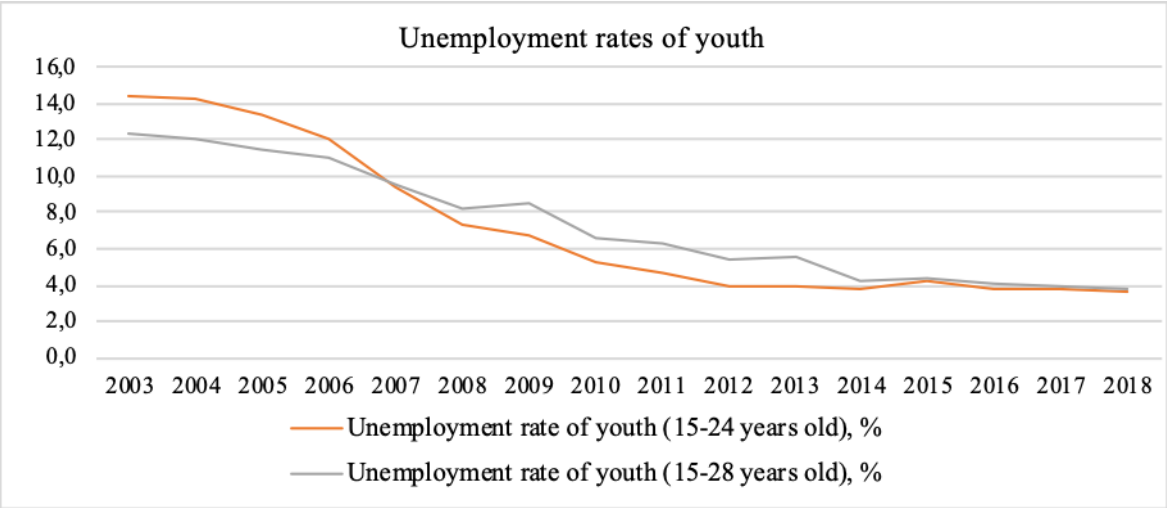
Source: based on ComStat, 2020

More than half of the unemployed population live in cities: 59,3 % (58 % a year earlier), the number increased by 2,3 % over the year, to 262,1 thousand people. The number of unemployed in rural areas decreased by 3 %, to 179,7 thousand people. The share of unemployed in rural areas of the total number of unemployed decreased over the year from 42 % to 40,7 % (InBusiness.kz, 2019).

4.2.5 Unemployment of youth

An important area of unemployment research is the analysis of youth unemployment indicator. Under the KZ law, youth are considered to be people aged 15 to 14 years. The ILO indicates that young people are between 15 and 28 years old. Diagram 16 shows the dynamics of the youth unemployment indicator by the ILO and IL methods. The discrepancy between the values of the indicators was noticeable until 2014, and in 2014 the methodology of national statistics was changed - studies were conducted on a sample survey of 208 275 households. After the year 2014, it is clear that the indicators of national statistics and the ILO practically do not differ. In 2018, the youth unemployment rate fell to 3,9 % - this is 82 thousand young people.

Diagram 16 Unempoyment rate of youth, 2003-2018



[1)] Age of youth classification according to the standards of the International Labor Organization

[2)] Age of youth according to the Law of the KZ "On State Youth Policy in the Republic of Kazakhstan"

Source: based on ComStat, 2020

In the long-term dynamics, a downward trend in youth unemployment is observed. For the period 2012-2017, the unemployment rate of the population aged 15 to 28 years decreased from 5,4 % to 3,9 %. In total, in the country among young people, according to the results of two quarters of 2018, 82,4 thousand people remain unemployed – this is 4,8 % less than the same period a year earlier – 86,6 thousand people. The largest number of unemployed young people is in Almaty – 15,5 thousand people. (a year earlier – 16,3 thousand people), which is 18,8 % of the total unemployed population aged 15-28 years. Next is the Turkestan region, in which the number of unemployed among young people is 8,7 thousand people. Closes the top three anti-leaders of the Karaganda region, in which the number of youths without work is 7,2 thousand people, a year earlier – 7,1 thousand people. In the capital, the number of young people without work is 6,3 thousand people. (6,1 thousand people a year earlier). The smallest number of unemployed youths is still in North Kazakhstan oblast – 1,5 thousand people. (a year earlier, 1,3 thousand people).

According to the results of the first half of 2018, the youth unemployment rate amounted to preliminary 3,9 %, for the same period last year – 4,1 %. The reduction in youth unemployment is associated with an increase in the number of employees by 3,1 %, from 1,5 million to 1,6 million. The number of self-employed, on the contrary, decreased

by 7,9 % and amounted to 455,6 thousand people (the first half of 2017 – 494,9 thousand people).

By types of activity, the greatest interest among young people is caused by the sphere of wholesale and retail trade, car and motorcycle repair. In this industry 16,5 % of all working youth are employed, which is 335,6 thousand people. The second most common type of activity is agriculture, forestry and fisheries – 276,7 thousand people. (specific gravity – 13,6%). In the field of education, the number of working youths is 229,2 thousand people. (specific gravity – 11,2 %). 221.7 thousand young people are employed in industry (specific gravity – 10,9 %). Closes the top 5 most highly sought-after activities among youth construction. In this area, the number of working youths is 149,5 thousand people. (specific gravity – 7,3 %) (InBusiness.kz, 2018).

4.2.6 Wage levels

The average monthly nominal wage was in 2018 162 673 tenge (472 US dollars). The rate of growth of the average wage in dollar terms differs from the rate of growth of wages, expressed in national currency tenge. The minimum wage in 2018 was 28 284 tenge. Table 2 shows the average nominal wage in tenge and US dollars, as well as the minimum wage in tenge. The table calculates indexes of year-on-year changes. The last row shows the value of the basic index (2003 = 100). It is obvious that the annual growth rate of the average wage in tenge was higher at the beginning of the monitored period (until 2007) than in the last period - in the period 2004-2007 it was an annual increase of about 20 % and more. In 2017 there was only an increase of 5,5 %, in 2018 – 7,9 %. From the analysis of the development of the indicator of the average wage in US dollars, it is clear that in wages in dollar terms decreased year on year – in 2009, in 2014-2016. It can be argued that the situations associated with the global economic crisis and the fall in oil prices are affecting the wages of the inhabitants of KZ.

Table 2 The average monthly minimal wage and minimal wage, KZ, 2003-2018

Year	The average monthly nominal wage, tenge		The average monthly nominal wage, US dollars		Minimal wage	
	tenge	index	US dollars	index	tenge	index
2003	23128	n/d	155	n/d	5000	n/d
2004	28329	122,5	208	134,2	6600	132,0
2005	34060	120,2	256	123,1	7000[1)]	106,1
2006	40790	119,8	324	126,6	9200	131,4
2007	52479	128,7	428	132,1	9752	106,0
2008	60805	115,9	505	118,0	10515[2)]	107,8
2009	67333	110,7	456	90,3	13470[3)]	128,1
2010	77611	115,3	527	115,6	14952	111,0
2011	90028	116,0	614	116,5	15999	107,0
2012	101263	112,5	679	110,6	17439	109,0
2013	109141	107,8	717	105,6	18660	107,0
2014	121021	110,9	675	94,1	19966	107,0
2015	126021	104,1	568	84,1	21364	107,0
2016	142898	113,4	418	73,6	22859	107,0
2017	150827	105,5	463	110,8	24459	107,0
2018	162673	107,9	472	101,9	28284	115,6
2018/ 2003		703,4		304,5		565,7

[1)] from 1 July 2005 – 9200 tenge

[2)] from 1 July 2005 – 12 025 tenge

[3)] from 1 July 2005 – 13 717 tenge

Source: ComStat, 2020

The largest average monthly salary is traditionally in the Atyrau region: 325 thousand tenge in 2019 (a year earlier – 291 thousand tenge). The first three regions include also the Mangistau region and Nur-Sultan city (Astana). The top-5 is closed by Almaty city and the West Kazakhstan region. The lowest salary is observed in Zhambyl, Turkestan and North Kazakhstan regions. Only four regions in KZ has the average salary, higher than the national average. Moreover, in Atyrau region it is higher by 74 percent, in Mangistau – by 55, in Nur-Sultan and Almaty – by 54 and 22, respectively (FinProm.kz, Tengrinews, 2019).

The highest salaries are received by employees of the financial and insurance sectors – 458 thousand tenge in 2019. This is almost 30 percent more than a year earlier. In the mining industry, the average monthly salary is 387 thousand tenge (+ 2,7 percent per year).

Professional, scientific and technical activities close the top three industries with the highest wages – 315 thousand tenge (+9,6 percent). The top 5 industries also included information and communications (275 thousand) and construction (233 thousand) (FinProm.kz, Tengrinews, 2019).

However, in industry, high salaries are received only by mining workers – 428,3 thousand tenge in 2019. Already in the processing segment, salaries are much lower – only 234,4 thousand tenge, and in electricity and water supply – only 191,6 thousand and 132,7 thousand tenge, respectively.

The average monthly nominal wage per employee of the crude oil and natural gas production company amounted to 704,8 thousand tenge at the end of 2018. According to this indicator, the sector under consideration takes the first place throughout the country's industry. Geologists are among the highest paid specialists in the country. In 2018, the salaries of geologists in the field of crude oil and natural gas production increased by 1 % and reached 567 thousand tenge. It is noteworthy that, although in the whole country women earn on similar positions an average of 30% less than men, the situation is different in the geological sphere. In terms of gender, women's salaries in the geological industry have increased markedly, while men, on the contrary, have declined. So, female geologists receive 594 thousand tenge (+ 9 % per year), male geologists receive 555 thousand tenge (-2,6 % per year).

The lowest salaries are among Kazakhstanis employed in agriculture: only 127,3 thousand tenge, with an increase of 15,6 % and a real increase of 9,7 %. Low wages are also in areas that ensure the quality of human capital in Kazakhstan: education and healthcare. Here, wages also did not reach even 150 thousand tenge per month (Zakon.kz, 2020).

4.3 Correlation analysis

It is also examined whether employment in the KZ industry is dependent on the development of the oil and gas sector. Data characterizing the development of oil and gas sector (independent *X* variables) are selected:

- *X1:* crude oil production, thous.barrels per day, annual (2003-2018),

- *X2:* oil real GDP growth, constant prices, % change, annual (2003-2018),
- *X3:* Oil and gas sector gross value added (GVA), bil. tenge (2010-2018).

The expected dependent variable (Y) is therefore employment in the KZ industry. Unfortunately, data about the employment in the oil and gas sector are not credible for selected time schedules, so a wider indicator is used here – employment in the whole industrial sector:

- *Y1*: employment in industry, thousand people (2003-2018),
- *Y2*: employment in industry, % change, annual (2004-2018).

Table 3 summarizes the available data characterizing the selected variables.

Table 3 Selected indicators of the oil and gas sector development and employment in industry, KZ

	X1	X2	X3	Y1	Y2
	Crude oil production, thous.barrels per day, annual	Oil real GDP growth, constant prices , % change, annual	Oil and gas sector GVA, bil. tenge	Emlpoyment in industry, thousand people	Emlpoyment in industry, % change, annual
2003	1057,212	9,057	n/d	1184,8	n/d
2004	1222,233	15,838	n/d	1250,4	5,53006
2005	1263,415	3,066	n/d	1307,0	4,52902
2006	1335,430	5,564	n/d	1364,6	4,40964
2007	1380,822	4,083	n/d	1444,4	5,84805
2008	1452,740	4,719	n/d	1487,2	2,96275
2009	1541,096	6,493	n/d	1473,2	-0,94251
2010	1643,836	6,093	5518	1518,3	3,06378
2011	1664,384	1,412	7168	1574,8	3,72017
2012	1627,397	-2,215	8013	1649,4	4,73346
2013	1678,767	3,211	7545	1698,9	3,00222
2014	1660,274	-1,313	7925	1702,5	0,21525
2015	1623,288	-2,619	7140	1734,1	1,85163
2016	1602,740	-2,884	8498	1795,5	3,54514
2017	1771,233	8,696	9847	1827,2	1,76318
2018	1855,479	8,445	13032	1854,0	1,46916
2019	1828,767	-1,440	n/d	n/d	n/d
2020	1849,315	1,124	n/d	n/d	n/d

Source: The World Bank, 2020, ComStat, 2020, Fred Statistic Data, 2020

The hypothesis: there is a positive correlation between employment growth in industry and the oil and gas industry development in Kazakhstan. The selected significance level is 0,95.

H1: there is a positive correlation between employment growth in industry and the crude oil production in Kazakhstan in 2003-2018.

$H1_0$: there is no correlation between employment growth in industry and the crude oil production in Kazakhstan in 2003-2018.

H2: there is a positive correlation between employment growth in industry and the oil real GDP growth in Kazakhstan in 2004-2018.

$H2_0$: there is a no correlation between employment growth in industry and the oil real GDP growth in Kazakhstan in 2004-2018.

H3: there is a positive correlation between employment growth in industry and the oil and gas sector GVA in Kazakhstan in 2010-2018.

$H3_0$: there is no correlation between employment growth in industry and the oil and gas sector GVA in Kazakhstan in 2010-2018.

The chi-squared distribution test was made, as well the Pearson correlation coefficient was calculated. Calculations are given in the Appendix A (for the H1), Appendix B (for the H2) and Appendix C (for the H3).

The following conclusions can be drawn:

- $H1_0$ can be rejected; it can be assumed that there is some dependency at a level of significance of 0,95 between the employment growth in industry and the crude oil production in KZ in 2003-2018: $\chi 2$ (30,929) > critical value $\chi 2$ (27,996), degrees of freedom (df = 15). This is a strong positive correlation (r = 0,93220). The employment growth in industry strongly depends on the growth of crude oil volume, produced in KZ. This finding signals the high dependence of the labor market of KZ on its oil sector.

- $H2_0$ can be rejected; it can be assumed that there is some dependency at a level of significance of 0,95 between the employment growth in industry and oil real GDP growth in KZ in 2004-2018: $\chi 2$ (80,808) > critical value $\chi 2$ (23,685), degrees of freedom (df = 14). However, this is a very weak positive correlation (r = 0,10813). The employment growth in industry don't almost depend at all on the growth oil real GDP in KZ. From the employees' point of view, this is a positive finding, showing that they are not strongly affected by unemployment in the sector at a time when the sector generates less GDP.
- $H3_0$ can be rejected; it can be assumed that there is some dependency at a level of significance of 0,95 between the employment growth in industry and oil and gas sector GVA in KZ in 2010-2018: $\chi 2$ (400,409) > critical value $\chi 2$ (15,507), degrees of freedom (df = 8). This is a strong positive correlation (r = 0,82138). The employment growth in industry strongly depends on the growth of the gross value added of the total oil and gas sector in KZ. On the basis of this result, it can be concluded that employment is more dependent on GVA than on GDP, or has become more dependent on recent sector productivity (the period from 2010 is taking into account here, while for H2 – the period from 2003). The GVA indicator here includes not only oil industry, but also the gas sector, from which it can also be deduced that employment is more dependent on the GVA of gas sector, not just on the GVA of oil sector.

5 Results and Discussion

According to official statistics, the situation with unemployment in the Republic of Kazakhstan at first glance is relatively safe when compared with other post-Soviet countries and non-CIS countries: in the last 5 years, its level has stabilized in the corridor of 4,8-5,2 %, while in the USA, for example, the range of fluctuations is wider – 3,9-7,4 %, and in developing countries unemployment can stably exceed 10 %. Statistics Committee data show that the unemployment rate in Kazakhstan is decreasing from year to year. Moreover, both general indicators and youth unemployment.

Numerous experts claim underestimated rates of actual unemployment in KZ. According to the calculations of independent economist Rakhim Oshakbayev, real unemployment in Kazakhstan reaches 15 % (Muminov, 2017). According to him, now 3,3 million people do not have permanent jobs, of which 2.2 million are "self-employed," 0,4 million are unemployed and 0,6 million are so-called "inactive," formally self-employed are not recognized as unemployed. As a result of the adoption of the new methodology (MHSD), most of the "unproductive self-employed" who did not register as unemployed were classified as "inactive". This allowed us to maintain the overall unemployment rate (5,1 %) instead of rising to 6,4 %.

The same indicators are given by the sociologist of the public fund "Strategy" Serik Beisembaev. According to the researcher, there are upper and lower layers of informally employed. The former consciously choose the informal market, are not included in socially vulnerable segments of the population and potentially receive real wages higher than if they worked on a legal basis. The lower layer of the informally employed is extremely vulnerable; due to lack of qualifications or for other reasons, they are not able to find a job on a legal basis. In the informal sector, as a rule, low-paid labour awaits them. There is a problem of poor quality of education, during surveys among young people there were cases when people had two higher educations, but worked as taxi drivers, because they could not even get a diploma in the specialty (Muminov, 2017).

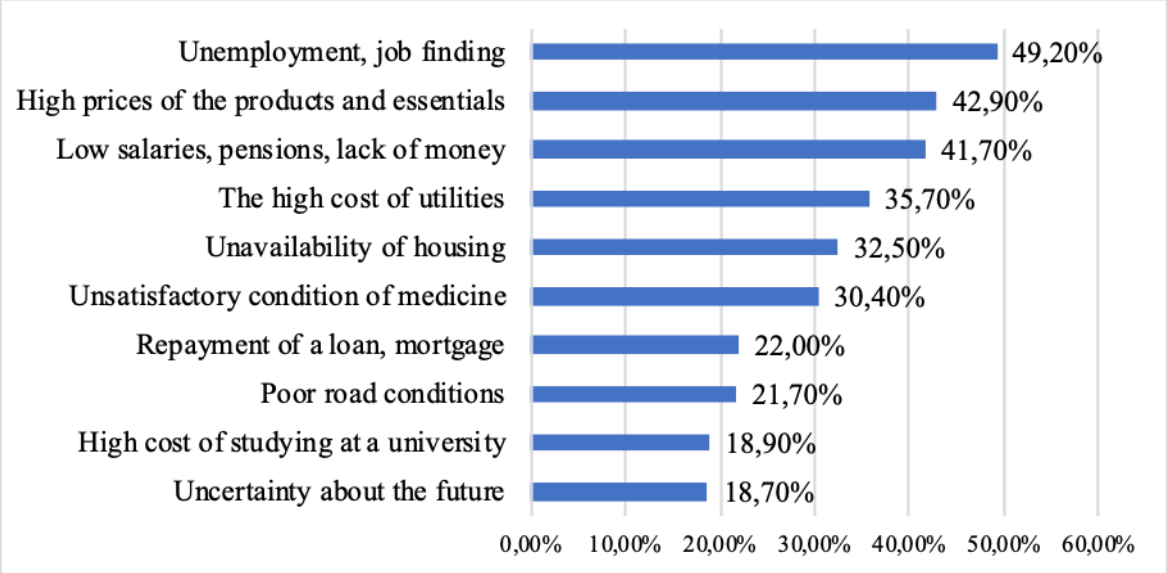
It is worth paying attention to how unemployment is calculated. A significant part of Kazakhstanis is classified as self-employed, while the nature of their activities and incomes are completely different. These include both owners of companies and unproductively

employed employees, including unpaid employees of family enterprises, whose incomes sometimes do not reach the subsistence level.

It is also important that in order to classify a citizen among the unemployed, he must apply for assistance in finding employment at the employment center at the place of residence, or through the portal of the "electronic government". However, the majority of people of working age do not apply to job centers in search of work but prefer to look for work themselves through advertisements via the Internet and through friends.

Data from alternative studies, including sociological ones, also demonstrate how acute this problem is in Kazakhstan, since about 40 % of respondents identify it as a priority (Diagram 17).

Diagram 17 TOP-10 of the actual problems in Kazakhstan, sociological study Economist 2018



Source: Zhusupova, 2019

A factor demonstrating the urgency of this problem is internal migration, the growing flows of which are caused, including by the problem of unemployment. In some regions of the country, the problem is less acute, in others more, of which young people, who are more mobile, are rushing in particular to cities in search of work. In one of the speeches, President Kassym-Zhomart Tokayev cited the following data: about 40 % of Kazakhstani youth are faced with the problem of employment, and also that approximately 51 % of young people do not plan to do business (Zhusupova, 2019).

Structural unemployment

In 2019, a research was conducted by the Atameken RPC (InBusiness.kz, 2020), in which 600 thousand enterprises participated. The results of the study showed a mismatch between supply and demand of labour. The discrepancy is expressed, on the one hand, in the lack of some qualified personnel, and on the other – in their overabundance. The main problem is the lack of seasonal workers and mid-level specialists. 63 thousand enterprises have a staff shortage until 2021. The topmost sought-after specialists included tractor drivers / machine operators, drivers, waiters, sales representatives, welders, handymen / movers, cooks, tutors, bricklayers and office managers. About 48 thousand people are required for the positions of sellers, supervisors in stores, security guards, operators in call centers, couriers, car washers, maids, tire technicians and shepherds. On average, the output of specialists with higher education is 5,3 times higher than the need, with secondary technical education – 1,7 times (for 600 thousand enterprises). Despite the high proportion of graduates, entrepreneurs are in dire need of seasonal workers and unskilled employees. This is due to the fact that workers' professions have become unpopular, while competition in the labour market among workers is minimal. There are 24 thousand open vacancies in the Turkestan region. Mainly agricultural workers are required – tractor drivers, hired workers, agronomists, shepherds, etc. 2980 tractor drivers are needed in the Maktaralsky district, while only 23 specialists are graduated a year, in the Kazygurt district, 23 specialists are trained for the need for 12 tractor drivers. Imbalance in personnel exists in all regions. However, the situation varies in the regions of the country. Today, the need for personnel is 148,5 thousand people. This is more than 79 thousand people, or 54 %, with secondary specialized education versus 14 % of specialists with higher education.

Today, the oil ang gas industry is faced with an important problem – a lack of highly qualified specialists. The rapid development of engineering and technology requires extensive training and retraining of the entire personnel of companies. The level of knowledge with which the young specialist comes to the company is often not enough, which shows an imbalance between the requirements of companies and results of student preparing. To improve the quality of qualifications and provide work for graduates, large oil and gas companies have cooperation agreements with relevant universities of the country – KBTU, Satbayev University, Atyrau Institute of Oil and Gas, Aktau State University named after Sh. Yesenova, KIMEP, ENU named after L. Gumilyova,

Mangistau University “Bolashak”, Innovation College in Shymkent, KyzGU im. Korkyt-Ata. Currently, Kazakhstan has a comprehensive system for attracting foreign labour – a quota system for qualified foreign labour and labour immigrants, a multi-stage system for issuing work permits. Within the framework of the Eurasian Economic Union, a regime of free movement of labour resources in the territory of member states is in force.

Unemployment of youth and people of pre-retirement age

Youth unemployment is primarily affected by socio-psychological characteristics – the excessive ambitiousness of applicants, the desire to immediately take a high post or positions that do not require professional or career development, the absence of long-term plans for the implementation of professional activities.

In addition, young people yesterday’s graduates do not have sufficient professional experience. This is where the so-called “first-employment trap” arises: employers in job advertisements usually require that the job seeker have experience – work experience in an interesting position from 3 to 5 years.

Another youth problem: the knowledge gained at universities is theoretical, abstract from practice, the realities of work in various sectors of the economy. Young people are poorly versed in the needs of the labour market, focusing on a certain prestige of certain professions and specialties.

Citizens of pre-retirement age are also among the most vulnerable categories of the population in the labour market. Many employers believe that this category of the population is less competitive in the modern labour market. There is an opinion among employers that people over 50 are not so trained and it is difficult for them to master new technologies and techniques. It is assumed that age, state of health affects the performance, mobility of potential employees.

In addition, workers of this age category, unlike young ones, are often better aware of their labour rights, require tax deductions, are generally more competent and demanding on the employer. Therefore, it is not surprising that companies, firms, organizations, recruiting agencies, in their advertisements for hiring, more often put the requirement for employees: “under the age of 45 years”.

In connection with the problem of unemployment of certain age groups, certain measures are being taken in Kazakhstan to eliminate this problem. As an example, there are various master classes, in which participants receive practical advice and tips from recruitment professionals on employment issues – how to prepare for an interview, advices about the structure of the resume and the style of self-presentation at the interview. Experts point out that among the important competencies when applying for a job for young people are a tendency to lean production, critical thinking, multi-discipline and other equally important qualities that are in demand on the modern employment market in KZ (Kulibaev, 2018, p. 12).

Regional differences and unemployment

Each region has a unique labour market under the influence of various factors, such as the sectoral structure of the economy, population density, migration processes, the level of professional training, the activity of enterprises, and the activities of the public sector.

Agriculture and traditional industrial production are no longer the main sectors of the economy, dynamically developing service industries are in the first place. The same situation is in Kazakhstan. About 60 % of the workforce is in the service sector.

Since many regions of Kazakhstan have developed industry specialization, this creates problems. For example, the most difficult situation is in a labour-surplus, densely populated region specializing in agriculture, such as Turkestan. It is only natural that the government is trying to direct labour from the labour-surplus south to the north of the country.

A very difficult situation in terms of unemployment is typical for single-industry towns. As the depletion of hydrocarbon and solid mineral deposits and the development of automation, the demand for labour in such regions becomes diminishing. Limit the ability of subsoil users to maintain employment low resource prices. Today, the most acute situation has developed in the Mangistau region, in Zhanaozen, where strikes of the unemployed were noted in February of the past year, summer and early autumn.

The authorities of the Mangistau region and Zhanaozen are trying to diversify the economy, create new jobs in the service sector and in other areas besides the oil and gas

sector. Along with the diversification of the economy, the development of new sectors of the economy that will expand the labour market, the authorities are taking measures in the field of internal migration. It is planned to relocate almost 400 families from the single-industry town to the regional center of Aktau, which has a more capacious and diverse labour market. Houses for them will be built in 13 new neighbourhoods.

Unemployment of women

Statistics show that there are more unemployed among women – 5,4 %, while among men – 4,3 %. In employment programs, women are identified in a separate category, that is, this problem is recognized at the state level. What are the reasons?

Often, one of the main requirements for candidates for vacancies is the availability of special technical education, its owners are most often men, that is, vacancies are designed mainly for representatives of working specialties. In the framework of the program for the development of productive employment and mass entrepreneurship, out of 1000 students in working specialties, only 185 were women. Whereas according to the data of the Almaty city employment center, the vacancies offered by employers in the technical sphere make up about 40 %.

The Kazakhstan labour market is unbalanced in demographic, sectoral, and regional spheres. According to employment specialists, “female” specialties are the least competitive, often less paid.

In coal and mining, oil refining regions, male labour predominates and enterprises are poorly developed where female labour is most fully applied. Labour market indicators vary widely across the regions of Kazakhstan. For example, in the Mangistau region and other western oil and gas regions of the country, as well as in the Karaganda region and a number of other regions in which the mining and metallurgical industry is decisive in the economy, the employment of men is higher than that of women, both in these industries and in general .

Another difference distinguished by the researchers is that there are not only quantitative, but also qualitative differences between male and female unemployment.

Most unemployed men quickly find work, while the bulk of women who are forced out of social production lose it almost forever.

Of great importance is the fact that women, leaving maternity leave, are not able to study full-time. Much has been declared on the equality of men and women. But in practice the situation is different. The often-biased attitude of the employer to a woman of childbearing age is also significant. This is especially clearly seen on the basis of statistics on youth unemployment, where women are twice as large as men.

There is no denying the presence of negative stereotypes about female employment. For example, women with children are rated as less attractive job seekers compared to, for example, single men. Do not forget that the homework in Kazakhstan still largely lies on the shoulders of the woman, that is, we are talking about the so-called unpaid female work.

Measures to improve the situation

Partial statistics, and especially secondary studies, show high structural unemployment, as well as an overabundance of unclaimed labour. As a result, the employer incurs losses, loses productivity and retrains the employee. An employee, if he cannot work in his specialty, loses his income and qualifications. The imbalance can be eliminated by radically changing the training system and changing the relationship between the employer and employees.

The National Palace proposes to revise the recruitment planning system in the organization of secondary vocational education. For this, it is necessary to assess the shortage of personnel in regions where there are no long-term investment projects, the shortage of workers not only by industry, but also by region and district. Then form a plan for admission to the organization of secondary vocational education. In the meantime, vocational training courses can partially cover the need for personnel. Since 2016, Atameken, together with associations and the business community, began work on updating and approving standards and areas for training specialists. In particular, according to the results of 2019, 578 professional standards were approved. On their basis, universities and colleges can adjust educational programs (InBusiness.kz, 2020).

Earlier, in order to combat unemployment in Kazakhstan, the Enbek program for the development of productive employment and mass entrepreneurship for 2017-2021 was developed and is now being implemented. As the Minister of National Economy noted, demographic changes also affect the labour market. This is an increase in working life due to an increase in middle age (Dalenov, 2019).

For the period 2019-2025, 2,6 million new jobs will be created. Of these, half will be created through the implementation of new investment projects worth 41.6 trillion. tg. of the 2,6 million new jobs, 600 thousand people will be provided with a net increase in labour force, 2 million people – with labour flows in the economy. The employed population will increase from 8,7 million people in 2018 to 9,3 million people by 2025.

R. Dalenov noted that at the same time there will be qualitative changes in the structure of the labour market. So, the share of self-employed people will decrease by 7,5 %, the share of people employed in the real sector of the economy will grow by 3 % due to the implementation of large investment projects in the agro-industrial complex, fuel and energy sector and manufacturing industry. The shares of tourism and in the service, sector will grow by 2 %.

The Minister of National Economy emphasized that in order to create conditions for adapting the labour market to external and internal challenges, it is proposed to create new jobs, provide quality training taking into account the implementation of new investment projects, develop an electronic labour exchange, employment centers with the installation of employment indicators, and also measures to attract private employment agencies (Dalenov, 2019).

Specialists of the Ministry of Labour and Social Protection of the Population of Kazakhstan predicted that by 2025 unemployment could increase in Kazakhstan due to objective reasons. Objective trends show that in the medium-term unemployment is likely to increase due to another demographic wave in the development of the country, its population and changes in the labour market. In the working population in 5-6 years, the generation of the “second wave” of the population explosion (the “first wave” of the demographic end of the 1950s and early 1960s) - that is, the generation born in the second half of the 1980s - will prevail. Today, representatives of this generation are 30-35 years

old. In 2025, they will constitute the main and most active, in demand and large group of the working population. This will “push” the labour market (Zhusupova, 2019).

In addition, it is precisely by 2025 that the number of women and their share in the labour market will increase significantly, as women have raised their retirement age to 63 years. Every year, the proportion of women of pre-retirement age (up to 63 years) will increase. That is why the government will complement and probably develop a new employment program.

Given that unemployment varies significantly among different population groups, it is important that public policy instruments for solving unemployment problems are targeted for different population groups.

At the same time, measures should be adopted that have established themselves as the most effective. These include the application of the mechanism of social partnership, stimulation of self-employment of the population, support for small business, retraining of personnel, organization of public works, quotas for jobs, economic support for employers, the use of flexible forms of employment, information support for the labour market, support for non-state services in the field of employment.

6 Conclusion

The thesis focused on issues of the labour market in Kazakhstan. This Asian post-Soviet country has a set of specifics in its economy, socio-demographic sphere, culture, natural conditions: e.g. there are one of the least low population density, huge distances between cities, significant mineral reserves. It is interesting to explore the development of this great country in the era of independence, to find out current trends in the sphere of employment, to discover the problems of unemployment. Kazakhstan is among the top 10 oil exporters in the world; therefore, it is assumed that the labour market in this country is greatly influenced by the development of oil sector.

The aim of the thesis was to define trends and specific features of the labour market in Kazakhstan. Partial aim of the thesis was to find out whether employment in Kazakhstan is dependent on the growth of the oil industry in the country.

The first part of the thesis included the theoretical economical basis and takes into account the specifics of the methodology of data collection on the labour market in Kazakhstan, of the Kazakhstan employment policy, outlines the specific concept of "self-employed" used in Kazakhstan statistics.

In the second part, time series analysis (2003-2018) was performed using data by the Kazakhstan Statistical Office (ComStat), by The World Bank and other organizations. Depending on availability, other periods (e.g. 2019, beginning of 2020) were sometimes taken into account. The lack of much relevant data from 2019 and early 2020 by ComStat is a certain disadvantage that lowers the quality of the labour market analysis. Methodological problem in KZ is inaccuracy of inclusion of self-employed persons into statistical surveys, frequent change of survey methodology.

According to the results, the situation with unemployment in the Republic of Kazakhstan at first glance is relatively good, compared to other post-Soviet countries and non-CIS countries. The level on unemployment is enough stabilized (around 5%) and has a lower decreasing tendency in last years. Positive trend is especially a decrease of the youth unemployment according to the ComStat.

Despite this, the real situation in the country differs from the image, made by the official statistics. Numerous experts claim underestimated rates of actual unemployment in KZ. There is also an unofficial employment where people receive significantly higher wages than “on paper”.

After examining the employment structure, a trend of increasing employment in the services sector has been identified, which is characteristic for many developing countries. It was found that employment in agriculture in KZ is constantly decreasing. In terms of industrial employment, it is clear that women are disadvantaged in this area. There is a significant shortage of qualified employees in the industry (also in oil industry), a lack of different technical specialists and agricultural workers. Each region in KZ has a unique labour market under the influence of various factors, such as the sectoral structure of the economy, population density, migration processes, the level of professional training, the activity of enterprises, and the activities of the public sector. A very difficult situation in terms of unemployment is typical for single-industry towns.

The analysis of the dependence of employment growth in industry on the development of a significant oil and gas sector in KZ was carried out. Its dependence on the employment growth in industry and the crude oil production in KZ in 2003-2018, as well the oil real GDP growth in KZ in 2004-2018 and oil and gas sector gross value added in KZ in 2010-2018 was proved (on the significance level of 0,95). The employment growth in industry strongly depends on the growth of crude oil volume, produced in KZ, as well strongly depends on the oil and gas GVA growth. This finding signals the high dependence of the labour market of KZ on its oil sector. But the employment growth in industry don’t almost depend at all on the growth oil real GDP in KZ. From the employees' point of view, this is a positive finding, showing that they are not strongly affected by unemployment in the sector at a time when the sector generates less GDP.

In order to eliminate the problems related to unemployment, measures are implemented at the state level (employment policy, sub-program of support) and also at the level of individual organizations (training programs of large enterprises, cooperation program of enterprises and universities, work-shops and events aimed at support of the youth, women, rural areas employment etc.). A major problem that cannot be remedied in the near future stems from the erroneous perception of demand for certain professions and

labour market education. This problem has deeper historical and social roots. Highly qualified, performance oriented and flexible workforce is needed to the further development of Kazakhstan and its full integration into a market economy system.

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8 Appendixes

List of appendixes

Appendix A Calculations for the dependence testing: X1 (crude oil production) and Y1 (employment in industry)

	Real data			Theoretical frequences		
	X1	**Y1**	sum	**X1'**	**Y1'**	sum
2003	1057,2	1184,8	2242,0	1110,0	1132,1	2242,0
2004	1222,2	1250,4	2472,6	1224,1	1248,5	2472,6
2005	1263,4	1307,0	2570,4	1272,5	1297,9	2570,4
2006	1335,4	1364,6	2700,0	1336,7	1363,3	2700,0
2007	1380,8	1444,4	2825,2	1398,7	1426,6	2825,2
2008	1452,7	1487,2	2940,0	1455,5	1484,5	2940,0
2009	1541,1	1473,2	3014,3	1492,3	1522,0	3014,3
2010	1643,8	1518,3	3162,2	1565,5	1596,7	3162,2
2011	1664,4	1574,8	3239,2	1603,6	1635,6	3239,2
2012	1627,4	1649,4	3276,8	1622,2	1654,5	3276,8
2013	1678,8	1698,9	3377,6	1672,2	1705,5	3377,6
2014	1660,3	1702,5	3362,8	1664,8	1698,0	3362,8
2015	1623,3	1734,1	3357,3	1662,1	1695,2	3357,3
2016	1602,7	1795,5	3398,3	1682,4	1715,9	3398,3
2017	1771,2	1827,2	3598,4	1781,5	1817,0	3598,4
2018	1855,5	1854,0	3709,5	1836,5	1873,1	3709,5
sum	24380,3	24866,3	49246,6	24380,3	24866,3	49246,6

	Chi-squared distribution (χ2)		
2003	2,507	2,458	4,964
2004	0,003	0,003	0,006
2005	0,065	0,064	0,129
2006	0,001	0,001	0,002
2007	0,228	0,224	0,452
2008	0,005	0,005	0,010
2009	1,597	1,566	3,164
2010	3,922	3,845	7,767
2011	2,303	2,258	4,560
2012	0,017	0,016	0,033
2013	0,026	0,026	0,052
2014	0,012	0,012	0,024
2015	0,907	0,889	1,796
2016	3,769	3,695	7,464
2017	0,059	0,058	0,116
2018	0,197	0,193	0,390
sum	15,617	15,312	30,929

Results	
n	49246,649
Chi-squared distribution (χ2)	30,929
Degrees of freedom (df)	15
Probability	0,95
Critical value χ2	27,996
Mean square contingency coefficient (φ)	0,00063
Pearson correlation coefficient (r)	0,93220

Source: author

Appendix B Calculations for the dependence testing: X2 (oil real GDP growth, %) and Y1 (employment in industry, %)

	Real data			Theoretical frequences		
	X2	**Y2**	sum	**X2'**	**Y2'**	sum
2004	15,838	5,530	21,368	12,004	9,364	21,368
2005	3,066	4,529	7,595	4,267	3,328	7,595
2006	5,564	4,410	9,974	5,603	4,371	9,974
2007	4,083	5,848	9,931	5,579	4,352	9,931
2008	4,719	2,963	7,682	4,316	3,366	7,682
2009	6,493	-0,943	5,550	3,118	2,432	5,550
2010	6,093	3,064	9,157	5,144	4,013	9,157
2011	1,412	3,720	5,132	2,883	2,249	5,132
2012	-2,215	4,733	2,518	1,415	1,104	2,518
2013	3,211	3,002	6,213	3,491	2,723	6,213
2014	-1,313	0,215	-1,098	-0,617	-0,481	-1,098
2015	-2,619	1,852	-0,768	-0,431	-0,336	-0,768
2016	-2,884	3,545	0,661	0,371	0,290	0,661
2017	8,696	1,763	10,459	5,876	4,583	10,459
2018	8,445	1,469	9,914	5,569	4,344	9,914
sum	58,588	45,701	104,289	58,588	45,701	104,289

	Chi-squared distribution ($\chi 2$)		
2004	1,224	1,569	2,794
2005	0,338	0,433	0,771
2006	0,000	0,000	0,001
2007	0,401	0,514	0,916
2008	0,038	0,048	0,086
2009	3,652	4,682	8,335
2010	0,175	0,224	0,399
2011	0,751	0,962	1,713
2012	9,313	11,939	21,251
2013	0,022	0,029	0,051
2014	-0,786	-1,008	-1,794
2015	-11,101	-14,232	-25,333
2016	28,547	36,596	65,143
2017	1,353	1,735	3,089
2018	1,484	1,903	3,387
sum	35,411	45,397	80,808

Results	
n	104,289
Chi-squared distribution ($\chi 2$)	80,808
Degrees of freedom (df)	14
Probability	0,95
Critical value $\chi 2$	23,685
Mean square contingency coefficient (φ)	0,77484
Pearson correlation coefficient (r)	0,10813

Source: author

Appendix C Calculations for the dependence testing X3 (oil and gas sector GVA) and Y1 (employment in industry)

	Real data			Theoretical frequences		
	X3	**Y1**	sum	**X3‘**	**Y1‘**	sum
2010	5518	1518,3	7036,329	5836,419	1199,910	7036,329
2011	7168	1574,8	8742,813	7251,895	1490,919	8742,813
2012	8013	1649,4	9662,357	8014,628	1647,729	9662,357
2013	7545	1698,9	9243,874	7667,509	1576,365	9243,874
2014	7925	1702,5	9627,531	7985,741	1641,790	9627,531
2015	7140	1734,1	8874,055	7360,756	1513,299	8874,055
2016	8498	1795,5	10293,530	8538,166	1755,363	10293,530
2017	9847	1827,2	11674,188	9683,380	1990,808	11674,188
2018	13032	1854,0	14886,033	12347,506	2538,526	14886,033
sum	74686,000	15354,709	90040,709	74686,000	15354,709	90040,709

	Chi-squared distribution (χ2)		
2003	17,372	84,498	101,870
2004	0,971	4,721	5,691
2005	0,000	0,002	0,002
2006	1,957	9,521	11,478
2007	0,462	2,247	2,709
2008	6,621	32,203	38,824
2009	0,189	0,919	1,108
2010	2,765	13,448	16,212
2011	37,945	184,568	222,514
sum	68,282	332,127	400,409

Results	
n	90040,709
Chi-squared distribution (χ2)	400,409
Degrees of freedom (df)	8
Probability	0,95
Critical value χ2	15,507
Mean square contingency coefficient (φ)	0,00445
Pearson correlation coefficient (r)	0,82138

Source: author