Introduction. Pharmaceutical industry is the centerpiece of world economy. Pharmaceutical market ranks among world’s most dynamically developing, profitable and innovative one. It is very stable and not sensitive to unrest involved in economic crisis. Pharmacy always arouses interest with its innovations and so it is regarded as one of the best developing industries. This industry meets the requirements of the humanity, associated with global problems of healthcare and social expectations. Demand for medicines is constantly growing and gives hope for a healthy life to many millions of people [1, 2 p.5].

The review of the dynamics and peculiarities of pharmaceutical industry all over the world, and in particular in Kazakhstan can help in understanding of current situation and perspectives of the development of current priority area. The global coronavirus pandemic showed how important the level of development and preparedness of the pharmaceutical industry to the challenges of our time [3].

The research aims to study peculiarities of the development of pharmaceutical market of Kazakhstan in the context of current global changes. In accordance with the aim there were

Kazakhstan’s pharmaceutical market in the context of global trends

Abstract. Pharmaceuticals industry is among of social importance and prospective lines for development of scientific research especially due to coronavirus pandemic, which showed the importance of the level of healthcare development.
The provided literature review based on previous studies on the analysis of the pharmaceutical market, marketing research, review and statistical data. Were used following general scientific methods: method of scientific analysis, statistical and comparative analysis, inductive and deductive methods.
The dynamics of global pharmaceutical market development was studied, determined main incentives and limits of its development, considered perspective development directions. Current states of pharmaceutical market of the Republic of Kazakhstan were analyzed, provided analysis of its development.
As part of the study there was determined that pharmaceutical market of the Republic of Kazakhstan developed according to the global trends. Taking into account the dynamics of pharmaceutical market development, support of national producers by the government, tightening requirements of state control and requirements to national producers, improving competitiveness and growth of national pharmaceutical industry growth is possible.
Keywords: global pharmaceutical industry, pharmaceutical market of Kazakhstan, market analysis, development trend, volume of the pharmaceutical market, national producers support.

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developed following tasks: review currents state of global pharmaceutical market, incentives and limitations, directions of its development; analysis of Kazakhstan pharmaceutical market current state in view of global trends.

**Literature review.** The issues of pharmaceutical industry importance and its contribution to the economy of countries, increase of well-being and healthcare improvement are studies by national as well as foreign scientists and researchers. Reviews of the global pharmaceutical market were reviewed by foreign scholars like Progerina Yu., Shabalina L., Khumran R., P. Karmaka, A. Trivedi, V. Gaitonde, M. Syrkiewicz-Świtała, R.Świtala, P. Romaniuk, J. Kobza, E. Ptak and others.

Progerina reviewed the main trends of the world’s key pharmaceutical markets, market dynamics and prospects for development of therapeutic areas. According to the analysis, the volume of the global pharmaceutical market has steadily increased in recent years, where the leaders were such regions as North America, Asia-Pacific region, Eastern Europe [4]. Shabalina and Khumran identified the main factors that influence the pharmaceutical market, such as the research work of pharmaceutical companies and the sickness rate. It was found that the leaders in the pharmaceutical market are companies that contribute significant funds to R&D, and their drugs are more effective [5]. Syrkiewicz-Świtała and other mentioned that pharmaceutical industry was recognized as one of the most profitable industries and was a great importance to the world economy. Authors reviewed sustainable marketing mix of pharmaceutical companies. According to conclusions pharmaceutical companies which achieve their goals in accordance with the concept of sustainable marketing can contribute to the development of a competitive advantage in the pharmaceutical market [2, p.151]. Karmaka, Trivedi and Gaitonde found that the share of world R&D in the pharmaceutical industry was increasing annually, analyzed the importance of R&D in the development of the pharmaceutical industry [6, p.5].

The dynamics and development prospects of the domestic pharmaceutical market were examined by scientists Shoranova A., Tashenov A., Dathaev U., Zhakipbekov K., Sadykova A., Spanov M., Orynbet P. and others. Shoranova studied the development and prospects of the pharmaceutical market of Kazakhstan in the context of the single pharmaceutical market in the EEU, expected that the pharmaceutical markets of the EEU countries will also grow at a faster pace than the rest of the pharmaceutical market [7]. Tashenov’s research was also devoted to the development of the market of Kazakhstan within the framework of a single economic space. The author studied in detail the contribution of each participating country to the development of the common pharmaceutical market. It was concluded that the creation of a single economic space created additional opportunities for the development of the industry in the form of expanding the sales market, increasing investment attractiveness [8]. Dathaev, Zhakipbekov, Sadykova, as a result of the analysis of the pharmaceutical market in Kazakhstan, noted such positive factors as the growth of state support for financing health care and drug provision, the implementation of the model of universal access to medical care, and positive dynamics of medical and demographic indicators [9]. In the study of Spanov and Orynbet, they determined the degree of influence of various factors on the competitiveness of the pharmaceutical industry in Kazakhstan. The results of the study led to the conclusion that in recent years the competitiveness of the pharmaceutical industry in Kazakhstan significantly strengthened due to the creation single drug market [10].

Thus, the authors of previous works agreed that the pharmaceutical industry was one of the important components of the world economy, and had a tendency to grow annually. The pharmaceutical market in Kazakhstan also tended to develop, which was facilitated by the creation of a single economic market for the EEU countries. But it is worth noting that due to changes in the current global situation, these conclusions may be subject to adjustments.

It should be noted that at the moment, the topic of the pharmaceutical market is becoming more relevant due to the spread of the coronavirus.
pandemic. Many authors investigate the consequences of the impact of the pandemic on the further development of the pharmaceutical industry. N. Ayati, P. Saiyarsarai, S. Nikfar analyzed the current state of the pharmaceutical market. They examined how the consequences of the coronavirus pandemic will affect the further development of the market in the short and long term [3].

**Methods.** This article includes literature review. This review was based on the analysis of secondary source as books, scientific journals, scientific reports, statistical data and electronic publishing. The study also used the method of scientific analysis, statistical and comparative analysis, inductive and deductive methods. These methods make it possible to assess the state of the pharmaceutical industry, the dynamics and development trends in the world and in Kazakhstan.

**Results.** Pharmaceutical market is among one of the most dynamically developing markets in many countries. One of the main incentives for the growth of the global pharmaceutical market are demographic factors According to the UN data, global population will reach 8.6 billion in 2030, while life expectancy will also grow steadily [11]. According to the forecast, by 2050 the world’s population will reach 9.3 billion and about 21% will be people from 60 years of age and older [12].

Economic growth and wellbeing improvement in poor and developing countries also facilitate the development of global pharmaceutical industry. Improvement of purchasing power and access to quality healthcare and pharmaceutical products for poor families of middle-class worldwide, primarily in the region of South-East Asia is the driver of pharm industry further development [2 p.153, 12]. Significant support of pharmaceutical industry development is provided by the public sector, in particular, in developed countries, where importance and necessity of human capital development is highly considered [2, p.153].

Development of new technologies in the field of pharmaceuticals and biotechnology supports pharmaceutical industry growth, allowing to create new drugs for curing rare or previously incurable diseases, which accordingly increases patient coverage. Innovations in the field of advanced biological products, nucleic acid therapy, cell therapy and bioelectronics and implantable drugs attract investment in this industry, which also contributes to the growth of the global pharmaceutical industry [12].

In 2019, research and development spending in the pharmaceutical industry totaled 186 billion USD globally. The volume of investments in 2018 amounted to USD 181 billion [13]. It stands to mention that in 2018, worldwide R&D in the health sector occupied the second place in terms of spending after the IT sector [14]. In 2019 in terms of private investment in research, the leading pharmaceutical TNCs are: Roche (USD 10.29 billion), Johnson & Johnson (USD 8.83 billion), Merck (USD 8.73 billion), Novartis (USD 8.39 billion) and Pfizer (USD 7.99 billion) [15]. The volume of investments in the pharmaceutical sector is dynamically growing, and is expected to reach a total of over 230 billion by 2026 [16].

Also, increase of investments in pharmaceutical industry in 2020 according to experts will be due to coronavirus pandemic and search for successful vaccine against COVID-19. There are involved more than 20 companies in the development of drugs and vaccines, including such world leaders in the pharmaceutical industry as Pfizer, GlaxoSmithKline (GSK), Johnson & Johnson, Novavax Inc and Sanofi and others [17, 18]. So Johnson & Johnson and the biomedical department of advanced research and development under the US Department of Health, more than USD 1 billion was allocated to search for the vaccine. Vaccine production is scheduled to begin before the end of 2020, and 1 billion doses of the vaccine from COVID 19 are planned to be released in 2021 [19].

The global pharmaceutical market has experienced significant growth in recent years. The volume of the global pharmaceutical market amounted to USD 1.1 trillion in 2017. The same indicator was equal to USD 1.2 trillion in 2018 [11]. And total global pharmaceutical market was valued at about 1.25 trillion USD in 2019. This is a significant increase from 2001 when the market was valued at just 390 billion USD [20]. Data on the dynamics of the pharmaceutical market from 2001 to 2019 is presented in Figure 1.
According to the expert forecast, made in 2019, global market would be worth 1.5 trillion USD by 2023. Experts expected, that growth rate would be amounting to about 3-6% annually. For example, this indicator in 2014-2018 was 6.3% [21]. The increase in market volumes was expected due to the dynamics of already formed segments, and in many respects by the growth in sales of innovative drugs [21].

However, it should be noted that this forecast was proposed at the beginning of 2019 and does not take into account the impact of the coronavirus pandemic. For example, more than 2 million COVID-19 cases per week were recorded in October all over the world. It was the shortest interval for this exponential increase since the start of the pandemic [22]. WHO experts forecasted anticipated lengthy duration of this COVID-19 pandemic [23]. Assessing the current situation with the spread of the coronavirus pandemic, we assume that the growth rate of the pharmaceutical market will be higher than previous years.

The coronavirus pandemic has led to a shift in demand in the pharmaceutical market. The COVID-19 impact on medicine use differed by medicine type, with the most significant change seen in those drugs used directly to manage the symptoms of COVID-19. Medicines used in USA hospitals in April for COVID-19 - including respiratory treatments, sedatives and pain treatments - had experienced an increase of 100% to 700%, since the beginning of January [24]. The need for a large number of drugs at the same time led to a shortage. Later, this caused induced demand and “panic buying”. Studies reported that induced demand in global pharmaceutical market, mainly due to “panic buying” of pharmaceuticals for chronic disorders, increased to 8.9% in March 2020 [3].

Thus, we can highlight the main global trends in the pharmaceutical market:

1) The annual growth of the pharmaceutical market, by increasing the availability of treatment for a larger number of the population (in particular for poor families of middle-class

Figure 1 – Dynamics of the global pharmaceutical market, 2001-2019 billion
Note: source [20]
worldwide), developing new, more effective drugs, as well as drugs for rare diseases;

2) A sharp increase in demand for drugs used to treat the symptom of COVID-19. Increasing demand led to induced demand and «panic buying».

3) R&D growth in the pharmaceutical industry, which is especially important during the development of a vaccine against COVID-19.

Next, we will consider the development trends of the pharmaceutical market in Kazakhstan. Pharmaceutical industry of Kazakhstan is relatively young compared with world countries. Pharmaceutical industry of independent Kazakhstan was developed on 1994, due to the demonopolization of the Pharmacy holding, which consisted of more than 1000 pharmacies throughout the country. Pharmaceutical industry of Kazakhstan is characterized by a large variety of original drugs and generic drugs; the distribution network is successfully expanding [9].

Today, dynamically developing pharmaceutical industry of Kazakhstan is one of the most developed among countries in CIS area [10]. Pharmaceutical industry of the Republic takes leading indicators in Central Asian region, and has the potential to compete with Russian and Belarusian manufacturers within the framework of the Single Eurasian Market [7].

In 2018 across EEU, USD 9,243 million of pharmaceutical products were produced in value terms. Leading position in production of pharmaceutical products is taken by Russian producers with the share of 90,8%. The next are Belarusian producers with the share equal 6,5%. The share of national producers is 2,4%. Production in the Republic of Armenia is 0.2% and in the Republic of Kyrgyzstan – 0,04%. The cost of produced products in 2018 increased by 36% in money terms during the period 2014-2018 [25]. The data about the volume of production in EEU in 2014-2018 is shown in the figure 2.

Pharmaceutical industry of the Republic of Kazakhstan presents significant growth dynamics in recent years. However, contribution of pharmaceutical industry to Kazakhstan GDP remains relatively small because of weak market base. In 2017 the share of pharmaceutical industry was 0,14% in GDP of Kazakhstan, 0,2% in 2018 and 0,29% in 2019 [26, 27]. This indicator shows that the contribution of the pharmaceutical industry to the overall economy of the country is increasing annually. It is also worth noting that the volume of investments in the pharmaceutical industry is increasing. So in 2018 the volume of investments amounted to 8.2 billion tenge, and in 2019 they amounted to 9.9 billion tenge, which is 12% more [27]. Following the results of 8 months of 2020, investments increased by 5.2% to 4.1 billion tenge [28].

![Production of pharmaceutical products in the EEU in 2014 - 2018, million USD](image)

Figure 2 – Production of pharmaceutical products in the EEU in 2014 - 2018, million USD
Note: compiled by the author from source [25]
In January-August 2020 the market of the Republic of Kazakhstan showed positive dynamics. According to the data of international analytical and research company IQVIA, the volume of Kazakhstani pharmaceutical market on the basis of the results of 8 months of 2020 compared with the same period 2019 in terms of value increased by 27% and made up 429 billion tenge (USD 1.06 billion with increase of 19%), and in terms of volume, it also increased by 27% to 0.49 billion packs, the data is shown in the figure 3 [29]. For comparison on the basis of the results of 12 months of 2019 pharmaceutical market value increased by 14% and made up 514 billion tenge (USD 1.34 billion with increase of 2,2%), but in terms of volume, it reduced by 1.9% to 0.60 billion [30]. The reason for the growth in value and volume, according to the authors, lies in the manifold increased demand of the population for medicines during the outbreak of coronavirus infection in the country, as well as in the speculative prices of drug sales during the period of shortages. As well as the increased volume of public procurement of medicines for the treatment of patients infected with coronavirus. It is also worth considering the rise in prices for medicines. In May 2020, pharmaceuticals rose 6.9% compared to May 2019. Among the drugs, antiseptics have significantly increased in price (by 16.9%), antipyretics (by 8.5%), renal medication (by 7.4%) and antibiotics (by 7.3%) [31].

The majority of drugs was sold in retail, thus 83% of all drugs were sold through pharmacies. In January-August 2020 retail sector in terms of value made up 245 billion tenge, increased by 23%. The share of retail market made up 57% of all pharmaceutical market, in terms of volume its volume increased by 25% and made up 0.41 billion of packs [29]. During the outbreak of coronavirus and a shortage of drugs, medicines for treatment were bought by the population of the country at their own expense. There was also induced demand and “panic buying”.

However, it is worth noting the growth of the outpatient drug supply sector. Thus, currents part of the market has increased by 44% in terms of money, and in terms of volume its increase was 27% [29]. Also, this situation showed the importance of policy which is being provided by the Ministry of Health of RK regarding annual expansion of the list of drugs, which are purchased for outpatient drug supply sector. The situation with the shortage of drugs during...
the period of high growth in the incidence of coronavirus showed that the health sector of the republic is highly dependent on imported products and cannot be sufficiently provided with domestic production at the moment. However, based on the above, it should be noted that the pharmaceutical market in Kazakhstan is relatively young and has just begun its active development. Taking into account the importance of this sector, the state supports the development of domestic production.

According to the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan, there are currently 96 pharmaceutical enterprises operating in the country, 33 of which produce medicines, 41 - medical devices and 22 enterprises produce medical equipment [28]. In 2019 the volume of pharmaceuticals and healthcare products purchasing from national producers made up 5.5 billion tenge, which amounts 30% in terms of money of total purchase. By 2024 it is planned to increase the volume of medicines and medical devices from domestic manufacturers up to 80% [32]. The data about the purchase of pharmaceuticals and healthcare products from national producers is shown in the figure 4.

It should be noted that the volume of pharmaceutical products produced by national producers increases annually. The volume of pharmaceutical products production in Kazakhstan made up 92 billion tenge (more than USD 242 million) during in 2019. Increase in the volume of production compared with 2018 made up 17% [17]. In period January-August 2020 the volume of production in the industry increased by 34.1% to 81.5 billion tenge. The increase was due to the participation of domestic manufacturers in public procurement [33]. Also this growth is driven by an increase in demand for drugs and medical devices due to the coronavirus pandemic. It should be noted that 48% of medicines for COVID-19 disease are produced by domestic producers [34]. Manufacturing of pharmaceutical products in Kazakhstan from 2014 to 2020 is shown in the figure 5.

Regionally, the leaders of national production are the city of Shymkent 31.8%, Almaty region 25.2%, the city of Almaty 21.5% and Karaganda region 14.7%. Previous years, the production leader has always been the Almaty region. So in 2019, 34.4% of all pharmaceutical products were produced in the Almaty region, followed by the city of Shymkent 34.1% [33, 35]. The displacement of the center of production of pharmaceutical products to the city of Shymkent is associated with the increase in production of the pharmaceutical company JSC «Khimfarm» (with the SANTO trademark). It is the main supplier of domestically produced medicines within the guaranteed volume of free medical care [28].

![Figure 4 – Purchase from national commodity producers of medicines and medical products of the Republic of Kazakhstan, 2016-2019, billion tenge](image)

**Note:** compiled by the author from source [32]
Despite the increase in domestic production, exports in January-July 2020 decreased by 2.9% compared to the same period in 2019. Part of the export Kazakhstani pharmaceutical products was redirected to the domestic market to provide for its own population. Import in 2020 increased by 30.4% in the same period [33]. Export and import dynamics of products of pharmaceutical industry during the period from 2014 to 2020 is shown in the figure 6.

Market dominance in Kazakhstan is taken by foreign companies. The structure of the pharmaceutical market shows that the presence of domestic enterprises in the market in monetary terms remains 17%, in physical terms - 39% in the first half of 2020 [34]. One of the reasons is low technical and manufacturing opportunities of national producers. However, in October 2020, a comprehensive plan for the development of the pharmaceutical and medical industry in Kazakhstan for 2020-2025 was developed. This plan is aimed at developing the medical and pharmaceutical industries, producing new drugs, increasing the capacity of existing industries. As a result of the proposed measures, it is planned to increase the share of domestic producers in monetary terms to 30%, and in physical terms to 50% [34].

Also, it must be noted that in the beginning of 2019 in the Republic of Kazakhstan new legal developments in the field of pharmaceutical drugs circulation were brought into force. New legal developments have changed the rules of drugs prescription, the process of price setting of wholesale and retail sale of drugs, distinction between free and prescription sale, and ethical promotion and advertising of pharmaceutical products. Moreover, there was implemented price regulation of pharmaceutical products along the entire distribution chain starting from the producer and to the consumer, tightening of the control over prescription sale of Rx-drugs, prescription drugs. System of drugs marking is implemented as well. Since 2018 in terms of legislation there has been set GMP (good manufacturing practice) standard for national producers, which guarantees quality of produced products in accordance with world standards.

Thus, we can highlight the main tendencies in the pharmaceutical market of Kazakhstan:

1) The annual growth of the pharmaceutical market of Kazakhstan; by increasing consumer demand, government procurement of medicines and growth in production of domestic producers;
2) R&D growth in the pharmaceutical industry;
3) An increase in state support for domestic manufacturers, simultaneously with an increase in requirements for pharmaceutical products;

Figure 5 – The production of pharmaceutical products in the Republic of Kazakhstan, 2014-2020, billion tenge

Note: compiled by the author from source [33]
4) At the same time, at this stage, foreign companies occupy the leading positions in the pharmaceutical market.

**Discussion.** Thus, it is possible to deduce the main trends in the development of the global pharmaceutical industry, such as the annual growth of the pharmaceutical market, by increasing the availability of treatment for a larger number of the population, developing new, more effective drugs, as well as drugs for rare diseases, R&D growth in the pharmaceutical industry.

It is worth noting that the pharmaceutical market in Kazakhstan is also developing in accordance with global trends, which is confirmed by the annual market growth and increased production by local manufacturers, as well as an increase in R&D in this area.

Summarizing, pharmaceutical market of Kazakhstan is developing over several decades. The significant growth in 2020 is associated with the coronavirus pandemic, increased consumer demand, increased government procurement of medicines and an increase in domestic production. However, the Kazakhstan market is still highly dependent on imported drugs, as evidenced by the increased level of import in 2020. The situation with the shortage of medicines during the peak of the coronavirus showed that the pharmaceutical industry, in spite of local production, is highly dependent on the import of medicines. In this connection, at the moment, a state program has been developed to stimulate the local production of medicines and a course
has been taken to maximize the provision of the country with domestic medicines.

**Recommendations.** Based on the review, it is possible to offer recommendations for the further development of the pharmaceutical industry:

1) Continuation of state support for domestic manufacturers in order to increase production volumes, as well as improve the quality of products;

2) Further increase in R&D in the pharmaceutical industry in order to develop and launch new, effective medicines that meet modern GMP standards;

3) A decrease in the volume of imports of medicines due to domestic production, and an increase in the export of products to neighboring countries.

4) Creation of conditions for the possibility of increasing production capacity during the period of increased demand for pharmaceutical products.

**Conclusion.** Arising from undertaken study there have been identified main trends in the development of world and national pharmaceutical products market. As part of the study there have been determined drivers of pharmaceutical market development. It is interesting to note that pharmaceutical market of the Republic of Kazakhstan is developing in conformity with worldwide trend, with its annually growth, R&D growth, and increasing state support. Also in 2020, the pharmaceutical market of Kazakhstan showed its high dependence on imported products, especially during the outbreak of coronavirus and a shortage of medicines. Measures aimed at supporting domestic production and providing the market with high quality Kazakh medicines can help reduce dependence on imported products.

The authors believe that the situation with the coronavirus pandemic clearly showed the importance of the pharmaceutical industry in maintaining the normal functioning of the entire country as a whole, the importance of developing domestic production of medicines, and reducing dependence on external supplies. This situation showed real weaknesses and opportunities for the further development of the pharmaceutical industry.

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Казахстанский фармацевтический рынок в контексте мировых тенденций

Аннотация. Фармацевтическая промышленность является одним из социально значимых и перспективных направлений развития научных исследований, особенно в связи с пандемией коронавируса.

В статье был проведен обзор литературы, в основу которого легли предыдущие труды по анализу фармацевтического рынка, маркетинговые исследования, отчетные и статистические данные. В ходе ис-
следования применялись следующие общенаучные методы: метод научного анализа, статистический и сравнительный анализ, индуктивный и дедуктивный методы.

В исследовании проанализирована динамика развития мирового фармацевтического рынка, выявлены основные стимулы и причины, ограничивающие его развитие. Рассмотрено современное состояние фармацевтического рынка Республики Казахстан, проведен анализ его развития.

В ходе исследования было выявлено, что фармацевтический рынок Республики Казахстан развивается согласно мировым тенденциям. Принимая во внимание динамику развития фармацевтического рынка, поддержку отечественных производителей со стороны государства, ужесточение мер государственного контроля и требований к отечественным производителям, можно ожидать повышение конкурентоспособности и рост отечественной фармацевтической отрасли.

Ключевые слова: мировая фармацевтическая отрасль, фармацевтический рынок Казахстана, анализ рынка, тенденции развития, объем фармацевтического рынка, поддержка отечественных производителей.

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