Biomedical Industry of the Republic of Kazakhstan

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Biomedical industry is an integral part of healthcare of the Republic of Kazakhstan. Healthcare system, in turn, is essential in providing the high standard of health, because it predetermines social, economic, cultural and industrial development of the country. But the effective operation of the healthcare industry is impossible without the biomedical industry, because the health of a citizen depends on an access of population to high-quality pharmaceutical products. This also reflects on life expectancy of the country’s population and on its capabilities.

Thus, the biomedical industry represents a complicated set starting from production of medicinal products and ending with their realization on a healthcare market. Biomedical industry is closely connected not only to healthcare, but to chemical industry too. People are the strategic resource of the country. Same as for Kazakhstan: citizens’ health is vital, and the tool which helps to support people’s health is the availability and affordability of the high-quality pharmaceutical products, besides healthy lifestyle propaganda. That’s why the biomedical industry of Kazakhstan can be considered as a strategic industry of the country. However, the industry has been experiencing some difficulties lately.

According to the data for 2014, there are 78 enterprises operating in biomedical industry of the republic and 2.9 thous. persons work there. It is noteworthy to mention that the number of persons working in the industry increased by 3.6% since 2013. In 2014, the personnel engaged in biomedical industry accounted for 0.4% of the total number of personnel engaged in the country’s industry in general.

Regionally, the main manufacturer of the pharmaceutical products in the country is South-Kazakhstan region (production of South-Kazakhstan region in 2014 totaled to 2,897.5 tons). Specific weight of South-Kazakhstan region in total production of the biomedical industry of the republic is 53% (fig. 1). This region is rich in raw materials (20 thous. types of plants, 6 thous. of them contain bioactive substances) used in production of medicines. That’s why it is useful and convenient to have pharmaceutical factories located in that region. Almaty is the second region, by pharmaceutical products output in Kazakhstan, its share account for 28% of the total domestic production. In overall, these two regions produce around 81% of all pharmaceutical products made in Kazakhstan.

In total, there are 5 largest pharmaceutical manufacturers in Kazakhstan: JSC «Chimfarm» (Shymkent), JSC «Romat» (Pavlodar), JSC «Almaty Pharmaceutical Factory «Nobel» (Almaty), LLP «Global-Pharm» (Almaty) and «Karaganda Pharmaceutical Factory» (Karaganda), which produce more than 95% of all pharmaceutical products in the country.
According to the Committee on Statistics of the Republic of Kazakhstan for the year 2014, biomedical industry accounts for 0.2% of the total industrial production and 0.6% of the total manufacturing industry’s production. Specific weights did not significantly change since 2013 (fig. 2).

Figure 1. Pharmaceutical Production in the Republic of Kazakhstan by region (%)

Source: www.trade.gov.kz.

Figure 2. Pharmaceutical industry output vs. total industry output and total manufacturing industry output, KZT bln.

Source: Committee on Statistics of the Republic of Kazakhstan, RA RFCA
Consequently, such a low production of the pharmaceutical industry indicates on the underdevelopment of this sector compared to other manufacturing sector’s industries of the Republic of Kazakhstan, e.g. versus chemical industry production (fig. 3).

**Figure 3. Pharmaceutical industry output vs. Chemical industry output, KZT bln.**

Source: Committee on Statistics of the Republic of Kazakhstan, RA RFCA

Generally, in 2000-2014 period, production of the main pharmaceutical products increased nearly by 17 times, having reached KZT 38.0 bln., in 2014, based on current prices. At the same time there can be seen a steady growth of the production in value terms during the given period; the more intensive growth rate is observed since 2009. The growth was, despite the fact that 2009 was a year of the global economic crisis, when a 12% downturn of production in the manufacturing industry of the republic occurred. Comparing the pharmaceutical industry with, the related to it, the chemical industry, it is obvious that the first one is minimum 6 times lagging behind the production of the second one. Nevertheless, growth rates in both industries are approximately the same: the average annual growth rate of the pharmaceutical production in 2009-2014 amounted to 21.3%, the same figure of the chemical production amounted to 22.5%. We evidence a significant slow-down in the growth rate of the pharmaceutical industry. In 2013-2014 the industry’s production growth rate was 4.2% that is 3.6% less than in the corresponding period 2012-2013, and 21% less than in 2011-2012.

Analyzing the industry production in real terms, dynamics for 2010-2014 period was uneven, thus in 2011 there was an increase to 17,827.8 tons in 2012. Production decreased sharply by 60% (to 7,135.2 tons). After that, the load of the facilities did not approach the level of 2010-2011. Nevertheless, in recent years the production is gaining momentum again (fig. 4).
In 2014, pharmaceutical production increased by 21% versus 2013, having reached 8,848.5 tons. Output of medicines accounted for 95.4% of the whole Kazakhstan’s pharmaceutical production, which is the largest share among all types of pharmaceutical products. The rest 4.6% of the market was the production of other pharmaceutical products, antibiotics, vitamins, etc. (fig 5).

In 9M2015, pharmaceutical production amounted to KZT 21.0 bln. that is 1.9% less than in 9M2014. Output of medicines amounted to 7,514.8 tons in real terms, a 10.2% increase versus 9M2014. Output of other pharmaceutical products amounted to 229.0 tons, a 6.3% decrease versus 9M2014. The weight of medicines in regarded period accounted for 97.0% of all pharmaceutical products produced in the country.
Although there is a quite positive dynamics in production, the contribution of the industry to GDP of the country is still low, e.g. in 2014, it accounted for 0.1%. Moreover, that figure remained unchanged over the past few years.

Analysis of demand for pharmaceutical products in Kazakhstan evidences that demand exceeds supply at the domestic market (fig. 6). In 2014, output of vitamin products in the country was less than a ton, but the internal demand amounted to 131.5 tons. The same situation was with antibiotics and other medicines: demand for antibiotics exceeded domestic supply at least 7 times; demand for medicines and other pharmaceutical products exceeded their supply 10.5 times.

**Figure 6. Production and consumption of the main pharmaceutical products in Kazakhstan, 2014, tons**

<table>
<thead>
<tr>
<th></th>
<th>Production</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provitamins, vitamins and their derivatives</td>
<td>0.8</td>
<td>131.5</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>7.4</td>
<td>51.2</td>
</tr>
<tr>
<td>Medicines and other pharmaceutical products</td>
<td>67,423.2</td>
<td>6,405.5</td>
</tr>
</tbody>
</table>

*Source: Committee on Statistics of the Republic of Kazakhstan, RA RFCA*

Such a high demand for pharmaceutical products in Kazakhstan is satisfied by imports at most (fig. 7). Thus, in 2014, consumption of the main pharmaceutical products amounted to 67,605.9 tons, 91% of which were imports and only 9% were domestic. 8% of domestic pharmaceutical products were exported.

Generally, the realization of pharmaceutical products at the domestic market, in 2014, increased by 45% (to 67,605.9 tons) versus 2013. That growth occurred mainly due to a 45.5% increase (to 67,423.2 tons) in demand for medicines and other pharmaceutical products. In contrast, consumption of provitamins, vitamins and their derivatives decreased by 26-37%. Correspondingly, imports of pharmaceutical products rose by 51.6%. While exports fell by 22.1% versus 2013. Exports of medicines and other pharmaceutical products shrank by 21.7% (to 526.1 tons), exports of antibiotics, provitamins, vitamins and their derivatives shrank completely.
Over 9M2015 at Kazakhstan market there were realized 25,418.5 tons of the main pharmaceutical products, 29% of which were domestic and 71% - imports (fig. 8). Out of the main pharmaceutical products, demand for provitamins, vitamins and their derivatives amounted to 142.0 tons, and it was satisfied almost in full by 142.8 tons of imports; the remaining part of imports went for an export. Demand for antibiotics amounted to 25.8 tons and was satisfied at 20% by domestic products and 80% by imports. Realization of medicines at the domestic market amounted to 25,250.7 tons, 30% of which were domestic and 70% were imports.

The specific weight of imported pharmaceutical products versus the same period of 2014 diminished by 9%, while the specific weight of the domestic ones grew by 9%. It means that...
there was a decrease in imports to 18,007.1 tons, as well as a decrease of exports by 9.8% to 337.8 tons.

**Figure 9. Kazakhstan pharmaceutical products imports by country, 2014 (%)**

![Diagram showing pharmaceutical product imports by country for 2014](image)

*Source: Committee on Statistics of the Republic of Kazakhstan, RA RFCA*

According to statistical data for 2014, 49% of medicines were imported from the CIS and 51% from other countries. We evidence a 10% increase of the CIS’s imports and a 10% decrease of imports from the non-CIS countries versus 2013. The major imports of medicines were from Russia – 37%, then from China (15%), India and Germany (both 7%) and Ukraine (6%).

**Figure 10. Kazakhstan imports and exports of the pharmaceutical products, 2013-2014, tons**

![Charts showing pharmaceutical product imports and exports for 2013 and 2014](image)

*Source: Committee on Statistics of the Republic of Kazakhstan, RA RFCA*

The Diagram (fig. 10) above shows a huge difference between pharmaceutical imports and exports of Kazakhstan: the imports far exceed the exports. Thus, in 2014, exports of the main pharmaceutical products reduced by 22.1% and amounted to 526.1 tons, 100% of which were medicines and other pharmaceutical products. Exports of antibiotics, provitamins, vitamins and their derivatives were not performed, most probably due to the cut in production of those pharmaceutical items in 2014. On the contrary, imports dramatically increased by 51.6%, having reached the level of 61,718.4 tons.
In overall, biomedical market of Kazakhstan is characterized by the high domestic demand for medicines and other pharmaceutical products, supported by consumption of pharmaceutical imports and the level of consumers spending on pharmaceuticals. It indicates a great potential of the pharmaceutical production of the country in particular and the biomedical industry of the country as a whole. However, one should not underestimate the threat of the unfavorable economic conditions, which the industry faces right now.

Firstly, the country’s industry enterprises have already had difficulties regarding the crisis started recently and the transition to a free floating FX-rate of the national currency, which resulted in considerable devaluation of tenge. Thus, according to the Retail Audit of Finished Pharmaceutical Products (FPP) in Kazakhstan «Remedium» group of companies, in 9M2015 there were sold 498.9 mln. packs of medicines through the pharmacies of the country, that was 0.7% more than in 9M2014. According to statistical data for 9M2015, the sales amounted to USD 972.9 mln. and KZT 188.4 bln. in value terms that is respectively 4.1% less and 4.3% more than over 9M2014 (fig. 11).

Figure 11. Retail distribution of the medicinal products in Kazakhstan, 9M2015 vs. 9M2015

![Retail distribution of the medicinal products in Kazakhstan, 9M2015 vs. 9M2015](source: www.pharm.reviews)

Due to the devaluation there was observed price inflation for the medicines in local currency. In 1Q2015 versus 1Q2014 the average price grew by 15%. At the end of 3Q2015 versus 1Q2014, prices grew up by 20% (fig. 12).
Secondly, the real threat for the pharmaceutical market is the recent announcements about planned restrictions on sales of OTC drugs and antibiotics in particular in 2016. Such reforms may lead to formation of the black market of antibiotics, because pharmacies and pharmaceuticals’ manufacturers aim to sell out the drugs, but in the beginning not all of them would adjust their business to the new rule. The impact of those reforms on consumer demand is unpredictable: there is a probability that in the short-term period before the imposition of restrictions demand for antibiotics may peak, because people would like to «stock up» the antibiotics, which in perspective will not be available without seeing a doctor that may require additional expenses. However, in the long-term, demand may probably decrease due to the complexity of the processes of getting the recipe and of the purchase of antibiotics. Furthermore, the pharmacies might compensate turnover reduction at the expense of increasing prices for prescribed antibiotics. That is one of the numerous scenarios under condition of the limited sales of the pharmaceutical products.

Presently, biomedical industry of Kazakhstan is progressing slowly. The economic crisis and followed policy of free floating tenge obviously hedge the development of the industry. However, despite that, pharmaceutical industry of Kazakhstan is still in the beginning of its development and is a perspective sector of the country’s economy, due to the expansion of domestic production, as well as of internal consumption, and mainly due to the state support. It means that biomedical sector of Kazakhstan may become attractive to foreign and local investors, keeping in mind that health is one of the valuable personal effects, and the specificity of the industry to support and recover people’s health, make it high-profitable and fast-growing industry irrespective of any global economic challenges.

Lately, one of the major drivers of biomedical industry of the country is the support provided by the state. The measures taken by the state in recent years facilitated the entrance of the foreign firms into the market and inflow of investments into the industry.

One of the key events of the recent years for the biomedical industry of Kazakhstan was the signing of an agreement on unified approaches to regulate circulation of medicines within the
Eurasian Economic Union (the EAEU) from December 23, 2014. The agreement facilitates formation of the common market of medicines for the EAEU countries to January 1, 2016. In the framework of the agreement, there will be stated common requirements for medicines, which correspond to the highest standards of quality (GMP, GCP, GDP and others). Presently, there are 9 pharmaceutical enterprises in the country and 5 of them have an official statement of compliance with a GMP standard. With a large probability, the largest manufacturers will be able to expand their exports in the EAEU countries in 2016.

There has also started the process of reorganization of the pharmaceutical industry in the republic for adaptation to the conditions of the market economy in the framework of the State Program of Healthcare Development "Salamatty Kazakhstan" for 2011-2015. This program has been developed by the Ministry of Healthcare and Social development of the Republic of Kazakhstan following the implementation of The President’s strategic plan for development of the Republic of Kazakhstan until 2020 and was aimed at the improvement of health of the people of Kazakhstan thus ensuring country’s stable socio-demographic development. According to the statistical data for 2015 one can say that many goals were achieved and even some targets were exceeded. Thus, the expected life expectancy of the citizens of Kazakhstan amounted to 71.6 years in 2014, although the target of the program was 70 years to 2015. Total expenses from the state budget for the implementation of the program accounted for KZT 380,358.9 mln.

Due to the Program of National Pharmaceutical production Development for 2010-2014 in the framework of The State Program of Accelerated Industrial and Innovative Development of Kazakhstan for 2010-2014 (SPAIID), there were introduced international quality standards. For that purpose there were allocated more than KZT 30 bln., the construction of 9 new factories has been started, 10 enterprises applied documents for modernization and shift to the GMP standard. To reduce the state expenses on expensive pharmaceutical imports, there was established the production of generics and increased volumes of purchase of them.

The Program, which is going to support biomedical industry of Kazakhstan in the long-term, is the State Program of Industrial and Innovative Development for 2015-2019 (SPIID), in order to implement The Address of the Head of the State “Kazakhstan’s way -2050: Common goals, common interests, common future” and the Strategy of development of the Republic of Kazakhstan until 2020. The given Program is developed to stimulate diversification and spur competition in manufacturing sector, including the pharmaceutical sector. The major objectives of the SPIID are to increase manufacturing industry output by 43% in real terms, to increase GVA in manufacturing industry not less than 1.4 times in real terms, to increase exports of non-primary (processed) exports not less than 1.1 times and to increase employment in manufacturing by 29.2 thous. persons. The implementation of the SPIID will affect the pharmaceutical industry in such way that the industry will develop by means of introduction of the modern high-technologies into pharmaceutical production and development of the country’s own pharmaceutical science and technologies. It will result in decrease of costs of medicines for population, creation of new jobs, and also finds solution of the national security issues of national supply with the medicines of domestic production. The republic budget allocations to implement the program amount to KZT 6,909.6 mln.
The goal of The State Program of the infrastructural development «Nurly Zhol» for 2015-2019 is to ensure the safety of quality of the pharmaceutical products through development of the laboratories. It will improve the quality of the domestic medicines and medical products. There are planned the following investments to implement the Program: international financial institutions’ funds – USD 9.0 bln., national companies and development institutions’ funds - KZT 241.4 bln.

\[\text{\textsuperscript{1}International standard of the good manufacturing practice} \]
\[\text{\textsuperscript{2}Lower cost equivalents of original medicines}\]