THE STATISTICS OF FOREIGN TRADE AS A MIRROR OF UKRAINE'S STATE POLICY FOR PHARMACEUTICAL INDUSTRY

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Among the priorities for the Ukrainian government during the country's recovery period after the war should be ensuring national security, establishing an effective healthcare system, creating jobs, achieving stability and economic growth. The development of the pharmaceutical manufacture plays a crucial role in achieving these goals. This industry, as revealed by the study, despite increasing production and value added over the years of independence, remains vulnerable and dependent on external resources [1]. The Covid-19 pandemic and the russian military aggression exposed the industry's unpreparedness for new challenges and threats, casting doubt on the effectiveness of Ukraine's policy for national pharmaceutical production. Study found [2], that the government's policy in the process of European integration primarily focused on harmonizing legislative and regulatory frameworks for pharmaceutical activities, rather than on enhancing the domestic manufacturers through a variety of activities: the implementation of a deliberate policy for the technological product and process innovation based on domestic R&D, strengthening competitive advantages for to meet growing domestic needs and increase exports.

Lack of policy for increasing the innovative and scientific and technological potential of pharmaceutical industry has led to imbalances in foreign trade: a significant exponential growth in imports with minimal export deliveries and their limited geographical scope (primarily former Soviet republics). According to data UN Comtrade [3], Ukraine has increased imports of pharmaceutical products (code 30 HS): from $255,52 million (in 1996) to $1 billion (in 2005) and by 2008 – $2,4 billion (Figures 1, constructed by the authors using information from [3, 4]). After the global financial crisis 2009, there was a slight reduction in imports, but in 2012, a historical maximum of $3,3 billion was reached. The events of 2014, resulting from russian military aggression, occupation, and the illegal annexation of part of the territory, led to a significant reduction in imports. However, by 2021, imports had almost reached the levels of 2013 - $3,1 billion. Taking into account the dynamics of Ukraine's population provided by the State Statistics Service of Ukraine (since 2015, excluding the temporarily occupied territories of the Autonomous Republic of Crimea, and the city of Sevastopol) it can be observed that in 1996, the import of pharmaceutical products per capita in the country was $4,98. By 2012, this figure had risen to $72,49, and at the end of 2021 (before the start of the war), it was $71,78.

Although according to statistics the reduction of pharmaceutical imports in 2022, amid the war, amounted to 36,3%; and the import of pharmaceutical products per capita fell to $46,16, one can assume that these data do not reflect the real scale of foreign-

made medicines and its consumption, because of the foreign humanitarian assistance received. According to the official government website [5], in 2022 during the period of martial law, Ukraine received a total of 10,500 tons of humanitarian medical aid amounting to 12,85 billion hryvnias. This included 480559363 pcs of medicines, consumables and personal protective equipment - 133020948 pcs, and so on. In addition to the influx of humanitarian aid, several other factors influenced the reduction in the import of pharmaceutical products to Ukraine in 2022. These factors include the destruction and blockade of infrastructure (affecting the operation of warehouses and retail networks), complications and increased costs in logistics (due to rising fuel prices, disruption, and changes in production-distribution chains), and a lack of purchasing power (resulting from changes in currency exchange rates, loss of income for citizens, high inflation, population migration, and a reduction in the number of consumers).

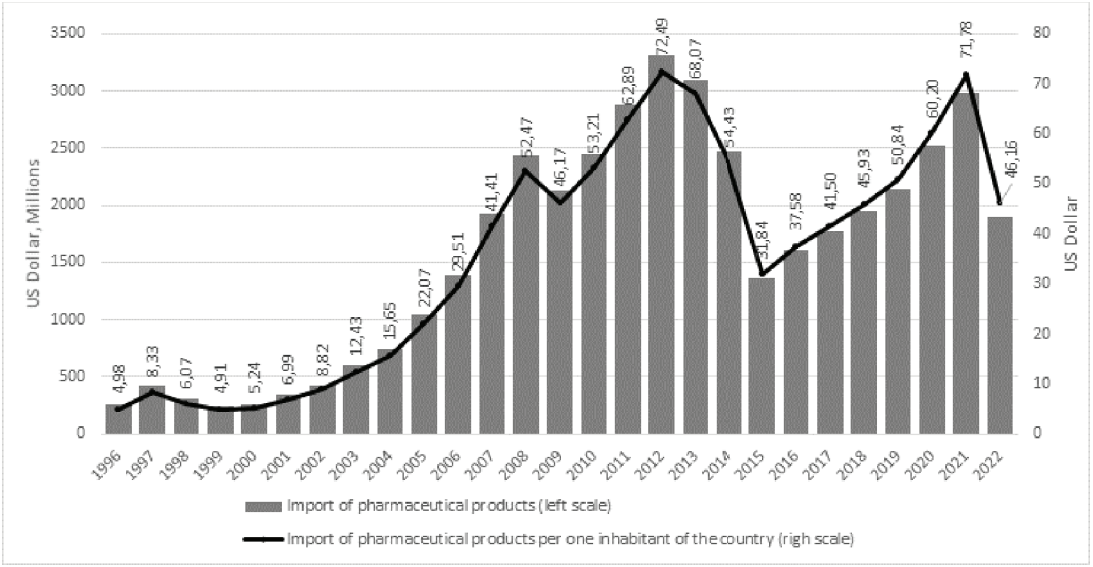

Figure 1. Dynamics of Ukrainian' import pharmaceutical products

On the import side, Germany is the leader in supplying pharmaceutical products to Ukraine (consistently accounting about 18-19% of the annual share). Other European Union countries, including France, Italy, Slovenia, Poland and Spain also involved in the supply of pharmaceuticals to Ukraine. In 2021, these 6 countries represented more than 40% of the imported goods under code 30 HS (Ukraine paid them for deliveries worth $1,3 billion) (Figure 2, constructed by the author using information from [3]).

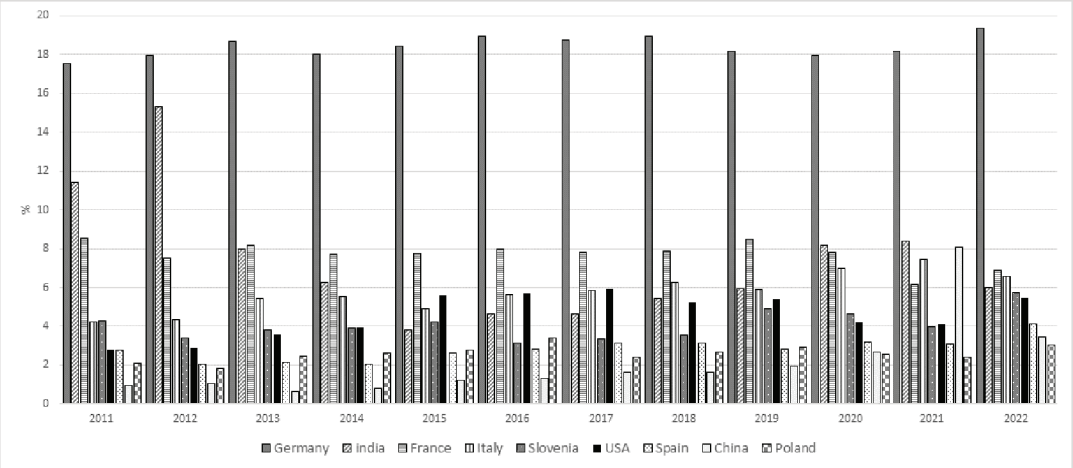

Figure 2. The TOP 9 countries in the structure of Ukraine`s import of pharmaceutical products

The statistical analysis of the structure of Ukrainian pharmaceutical imports based on HS codes shows that products under code 3004 HS predominate (Table 1, constructed by the author using information from [3]). These are pharmaceutical products, consisting of mixed or unmixed products for therapeutic or prophylactic use, put up in measured doses or packed for retail sale—in other words, finished medicines (1996 – 88,53%; 2019-2020 – about 80%).

Table 1

The structure of Ukraine`s import of pharmaceutical products, %

Code HS	1996	2000	2005	2010	2015	2019	2020	2021	2022
3001	0,35	0,02	0,02	0,14	0,26	0,45	1,07	1,41	1,04
3002	2,93	5,18	8,78	9,75	16,05	16,18	17,42	23,80	13,22
3003	1,67	0,33	0,42	0,23	0,57	0,41	0,72	0,44	0,38
3004	88,53	88,33	86,53	87,04	79,94	79,69	78,06	71,34	81,61
3005	5,26	3,21	1,13	0,89	0,99	0,68	0,61	0,63	0,96
3006	1,27	2,92	3,11	1,94	2,19	2,59	2,13	2,39	2,79

After 2005, in the import structure there is an observed increase in imports of products under HS code 3002, in which antisera, other blood fractions, immunological products (modified or obtained by biotechnological processes) and vaccines predominate (in particular code 300220 Vaccines for human medicine, 300230 Vaccines for veterinary medicine, 300210 - Blood, human or animal, antisera, other blood fractions and immunological products; whether or not modified or obtained by means of biotechnological processes). Statistics have changed since 2020 [6]: code 300210 (HS, 2012) corresponds to the following codes 300211, 300212, 300213, 300214, 300215, 300219 (HS, 2017). In this study considering these changes, using aggregated data for the new codes after 2020, a time series for code 30210, was compiled for the period 2002-2022 (Figure 3 constructed by the author using information from [3]).

In 2002, Ukraine imported pharmaceutical products under codes 300210-300230 HS worth about $18 million. By 2008, these imports had increased nine fold to $166,32 million. After the global financial crisis in 2008-2009, Ukraine more than doubled its purchases of these products on external markets. There was a slight reduction in imports in 2014-2015 due to russian aggression and the annexation of part of Ukrainian territory. However, by 2019, volumes exceeded the historical maximum in 2013, reaching around $295,1 million.

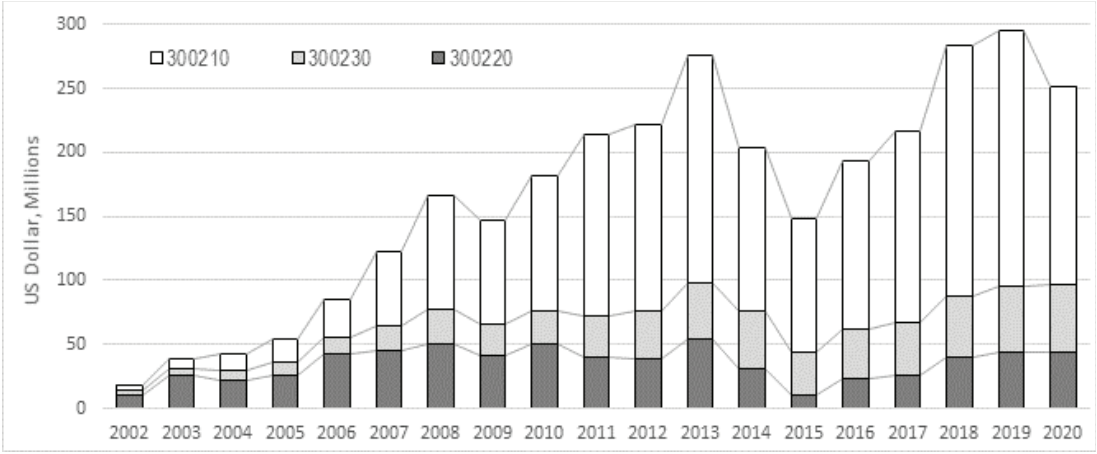

Figure 3. Dynamics of Ukrainian' import pharmaceutical products: codes 300210, 300220, 300230 HS

The pandemic in 2020 and related issues led to a reduction in shipments. Still, by the end of 2021, Ukraine paid foreign manufacturers and suppliers of vaccines, serums, and other products a record amount of $651,32 million (code 300220 HS - $311,87 million, code 300230 HS - $53,82 million, code 300210 HS - $285,63 million), as these products, despite long-term initiatives are not produced in the country [1, 2].

From 1996 to 2021, exports of pharmaceutical products have increased 4-fold to $301,38 million; but the negative trade balance - from $183,06 million to $2683,69 million which naturally affect on money supply and inflation (Figures 4, 5 constructed by the author using information from [3]).

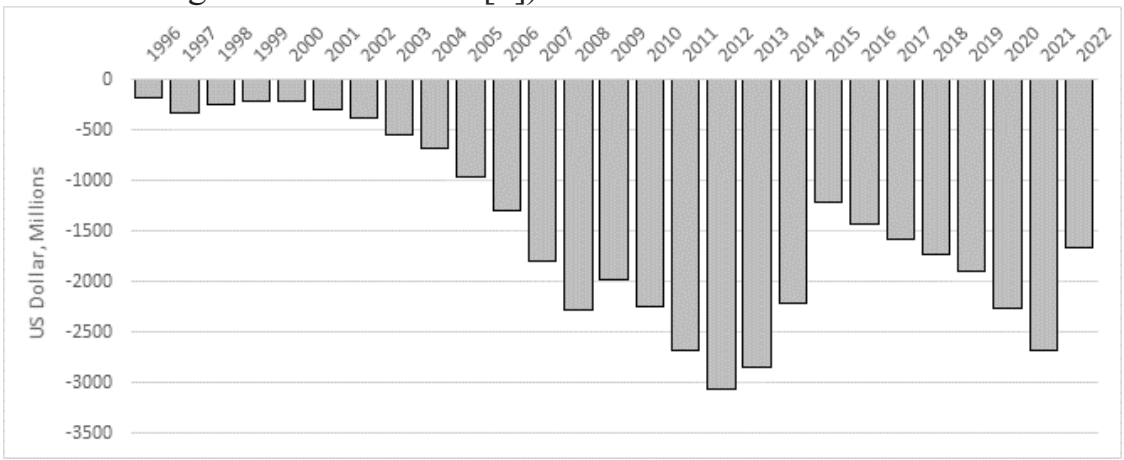

Figure 4. Ukraine`s trade balance of pharmaceutical products

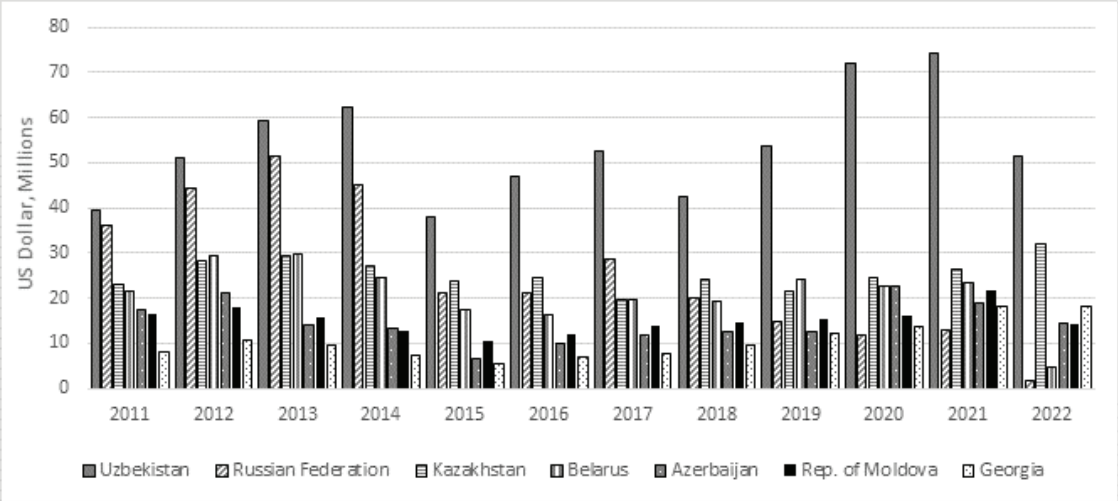

Figure 5. The TOP 7 countries-importers of Ukrainian pharmaceutical products

Analysis of Ukrainian pharmaceutical exports by world countries (Figures 5) showed that in 2011, 83,13% of the shipments were to 7 countries - Uzbekistan, Russian Federation, Kazakhstan, Belarus, Azerbaijan, Rep. of Moldova, Georgia (former Soviet republics). Uzbekistan became the largest market (in 2011 - $39,6 million, in 2021 - $74,1 million). In 2021, russia and Belarus still held a significant place in exports. However, after the start of the war in 2022, deliveries to these countries ceased (deliveries amounted to russia - $1,61 million, Belarus - $4,89 million. Total, according to the results of 2022, top 5 countries (Uzbekistan, Kazakhstan, Azerbaijan, Rep. of Moldova, Georgia) accounted for 54,5% of Ukrainian pharmaceutical industry exports. Despite the challenges, Ukrainian manufacturers are making efforts to expand the geography of their exports, considering European countries among their potential markets, but the EU market is still out of reach (with the exception of certain deliveries, for example, an export to Lithuania grew to $22,5 million in 2022). China, unlike Ukraine, pursued an active policy for the development of the national pharmaceutical industry and emerged among a world leader not only in manufacturing, but also in technological innovation in the industry [7].

Taking into consideration the successful experience of some leading countries [2, 7], and the realities of Ukraine, the post-war recovery of the country's economy should prioritize the innovative development of the pharmaceutical industry. This requires the formulation of a policy that balances the interests of consumers and pharmaceutical product manufacturers with the interests of the state, considering its goals: safeguarding the health of the nation, ensuring the efficiency of the economic system and social stability, promoting the emergence of new effective medicines based on advanced technologies, reducing dependence on imports, and addressing threats to national security. Such a policy should be based on the synergy and complementary measures of pharmaceutical and industrial policies, as well as policies ensuring national security. The development of such a policy should be based on the results of statistical analysis of official statistics data, as well as surveys of members of professional associations related to the pharmaceutical industry (developers and

manufacturers of biological and chemical substances and medicinal products, medical devices, new fillers and packaging materials, as well as equipment for pharmaceutical manufacturing). Solution of this objective requires development of statistical surveys of business to assess the problems and prospects of post-war development of the industry.

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