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The Department of World Economy

FINAL QUALIFYING PAPER (PROJECT)

on the topic:

**«EXPORT POTENTIAL OF PHARMACEUTICAL INDUSTRY ENTERPRISE»
(based on data of “Pharmhim” Ltd, Shostka, Sumy region)**

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INTRODUCTION

The pharmacological market is one of the most stable and sustainable in its development. For the last 200 years, drugs became a crucially important part of our life. The research showed that people, who regularly take suitable medicine have extra 11,5 to 21,5 months of life expectancy depending on age. Consumption of drugs increases annually what makes pharmacological industry highly perspective to operate. The most developed countries succeeded not only to meet the needs of their inhabitants but also to expand beyond national borders and entrench their positions. Ukraine`s pharmacological industry failed to evade such invasion. Beside 115 Ukrainian companies, that have the license to produce pharmacological goods, there are several foreign companies that have a significant share on the market. Among 10 biggest sellers of pharmacological goods (33,4% of the market) there are only four of Ukrainian origin (“Farmak”, “Arterium”, “Darnitsa”, “Zdorovie” group) in the internal market.

Despite the fact that Ukrainian goods are several times cheaper than the similar but produced by foreign companies, local enterprises failed to integrate into the world market. The general weakness and low level of competitiveness of the industry (0,46% of the whole volume of export in 2018) seems to be the core obstacle here. Thus it creates huge barriers even for the major players of the market. The fact is that in spite of

gaining its independence and course on the European Union integration, Ukrainian pharmacological industry is still strongly oriented towards post-Soviet Union countries. Ukraine exported drugs and semi-finished products in the amount of 171,1 million USD in 2018 and post-Soviet Union countries possess 81,83% of these goods.

There is no clear mechanism or any state support for the drugs companies, which are willing to operate on the external markets, especially on European. Despite the desire companies simply cannot find their position and their counteragents. A number of Ukrainian and foreign scientists overviewed these problems, in particular Romanenko V., Lebedeva L., Kluviak O., Podzerkovnyi O., Wertheimer A., Li J., Hansen N., Healy D., Jacobsen T., who researched activity of pharmacological industry enterprises. Tunitska Y., Dalyk V., Kibik O., Duliaba N. researched the export potential of domestic enterprises and Skrinovskiy R., Haiminova U., Protseviat O., Pirozhkova A., Levy B., Nugent J., Berry A., Weiss K. examined the impact of economic environment on the foreign economic activity. But these issues require more deep research especially on the pharmaceutical industry market.

Thus the purpose of the final qualifying paper is to propose ways of increasing export potential of pharmaceutical industry enterprise.

The cores of the final qualifying paper are the following:

- to analyze the international market of pharmacological goods;
- to estimate the financial and economic activities of “Pharmhim” Ltd;
- to research the competitive environment of “Pharmhim” Ltd;
- to evaluate the export potential of “Pharmhim” Ltd;
- to determine the measures of competitiveness increasing on European and Asian markets;
- to provide a forecast of the offered measures effectiveness.

The object of final qualifying work is the process of providing export potential of pharmaceutical industry enterprise.

The subject of final qualifying work is the theoretical and practical aspects of providing export potential of pharmaceutical industry enterprise.

Various methods were used in this final qualifying work. The authors used methods of comparison and formalization in the process of evaluation of company's economic activity indicators; methods of generalization and abstraction in the process of analysis of Ukrainian and international pharmacological markets; methods of analysis and induction in the process of determining the ways of increasing the enterprise's competitiveness.

The significance of this work is in the fact that currently local producers have the apparent possibility to gain its place not only on the domestic market but on the world market as well due to a comparably high quality of goods and low prices at the same time. Attracting foreign direct investment in pharmaceutical industry provide the possibility to reach high export competitiveness. The most valuable and important resource (high qualified labor force) is already available in Ukraine. So the main idea of the research is to adapt its production process as soon as possible. On behalf of the authorities there must be a clear regulation for the companies which tend to start, renew or continue their export activity.

Practical importance of the results of final qualifying paper is in the fact, that offered measures concerning export strategy determination can be implemented in the activity of a production enterprise.

Scientific novelty of the results of final qualifying paper is in the improvement of approaches of competitive advantages assessment of the enterprise - subject of international economic activity, which, unlike existing, is determined from the point of view of production and supplementary processes of the pharmacological industry enterprise.

The results of the final qualifying paper are presented in the collection of scientific articles of the students of full-time education on specialization "International economics" with the topic "Problematics of Export Activity of Ukrainian Pharmaceutical Industry Enterprise".

PART 1. RESEARCH OF CURRENT ACTIVITY OF “PHARMHIM” LTD

1.1. International market`s of pharmacological goods analysis

Main activity on pharmacological market occurs not within the country but across countries` borders. Companies tend to expand its activity by searching new markets, cheaper but high qualified labour force, perspective technologies.

The largest pharmaceutical markets are located in Europe and Northern America. However, particular developing countries currently enter this ranking (Fig. 1.1).

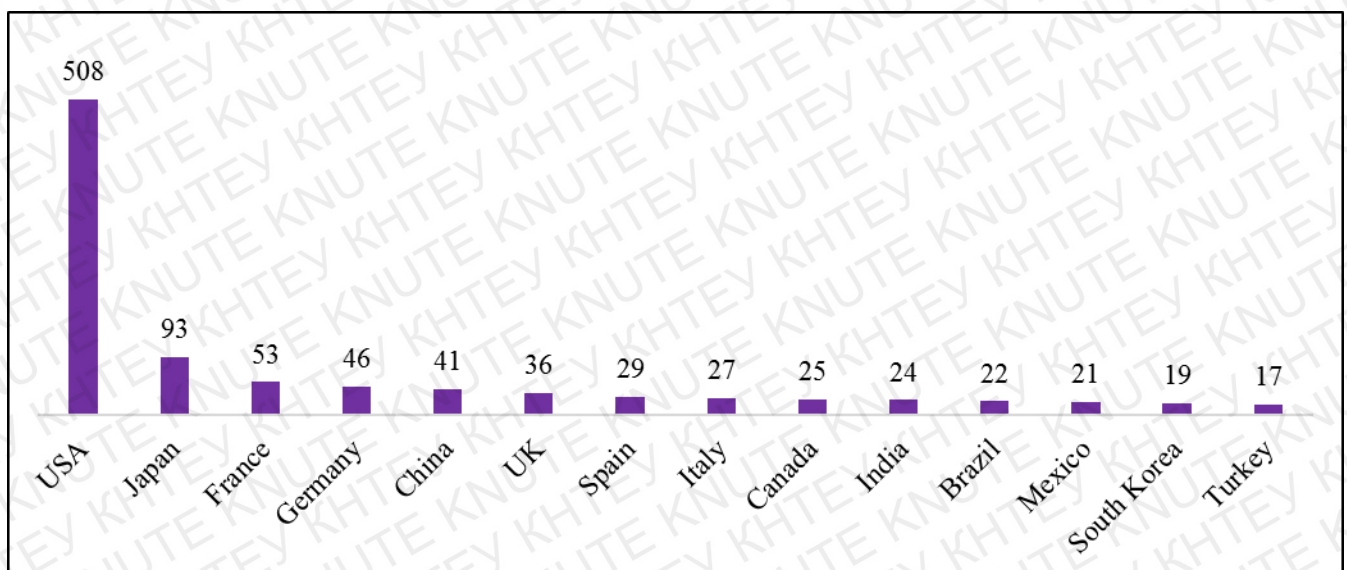


Figure 1.1 The world largest pharmaceutical markets in 2018, billion USD [11]

United States remain the world leading country as 46,6% of all researches are conducted here. 6 of 14 largest markets are located in Europe. Asian region is the one, which has the highest developing rate (in 2006 there was only 1 Asian country in the top 15 largest markets, while in 2018 - 4).

Most of these countries satisfy the needs of the population by producing the goods within the country. It supports and protects domestic producers, creates working places and provides receiving more taxes.

Nevertheless, these countries do not concentrate the production capabilities only on their domestic markets, but expand their export activity as well. That is why, the authors decided to research the world export and import of pharmacological goods (Fig. 1.2).

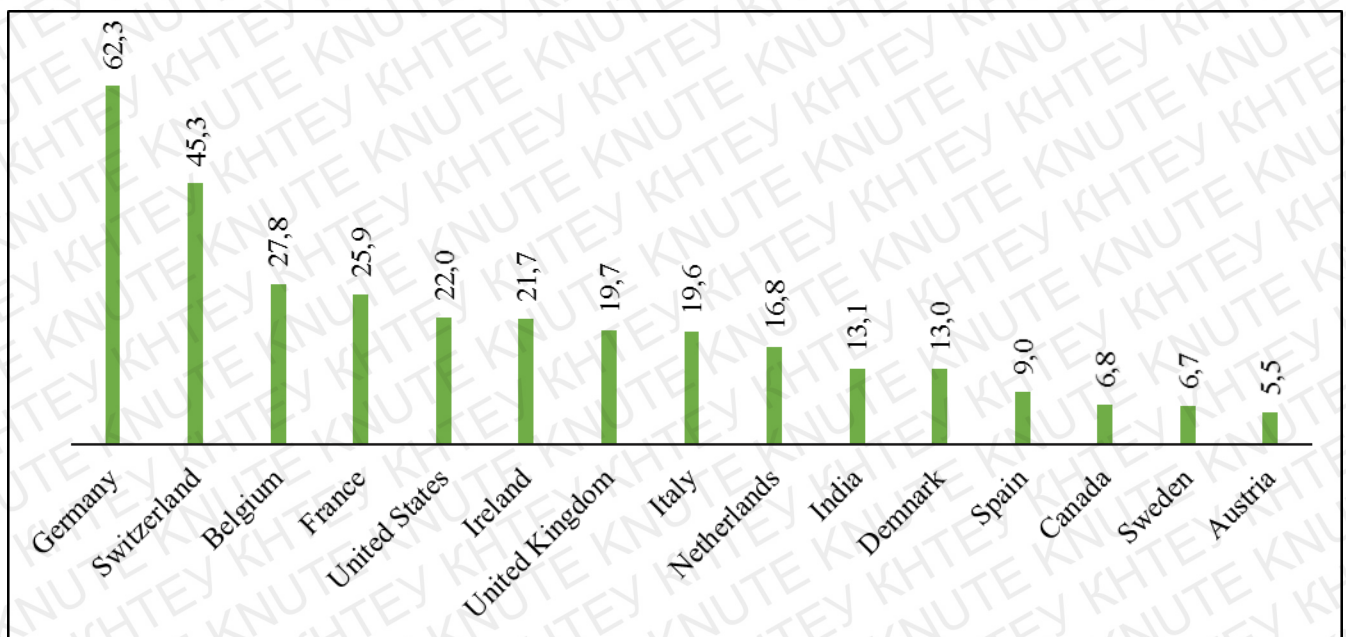


Figure 1.2 The world's top exporting countries of pharmacological goods in 2018, billion USD [11]

According to the research, fifteen countries covered a little less than 85% of world export of drugs and medicines. United Kingdom and United States have shown a decrease (-18,1% and -14,3% respectively) comparing to the level of 2014. Germany, India and Switzerland have on the contrary increased their results from 20 to 26% during four years. In this way Denmark has achieved absolutely remarkable results –

plus 293,4% since 2014 [11]. Most European countries` exporters can be characterized as a number of medium – large companies when Switzerland and USA achieve such results by few but large companies.

Ukraine`s export activity in pharmacological industry resulted in 184,3 million US dollars (58th place; 0,05% of world volume) with top three counterparties such as Uzbekistan, Russian Federation and Kazakhstan. 55% of whole amount of Ukraine`s export transfers to these countries. Ukrainian goods are mainly exported to post Soviet Union countries (in top ten-countries there is only one, that not refers to this region (Vietnam with the amount of 2,88% of export) [15]. Beside that Ukraine exports goods into 46 countries of Asia and South America.

Worldwide purchases of imported pharmaceutical drugs and medicines cost a total 399,7 billion US dollars in 2018. European countries paid 53,7% of this sum, 20,9% - North America. 3,5% of these goods were delivered to Asia and approximately 3% to Latin America (excluding Mexico) and Africa.

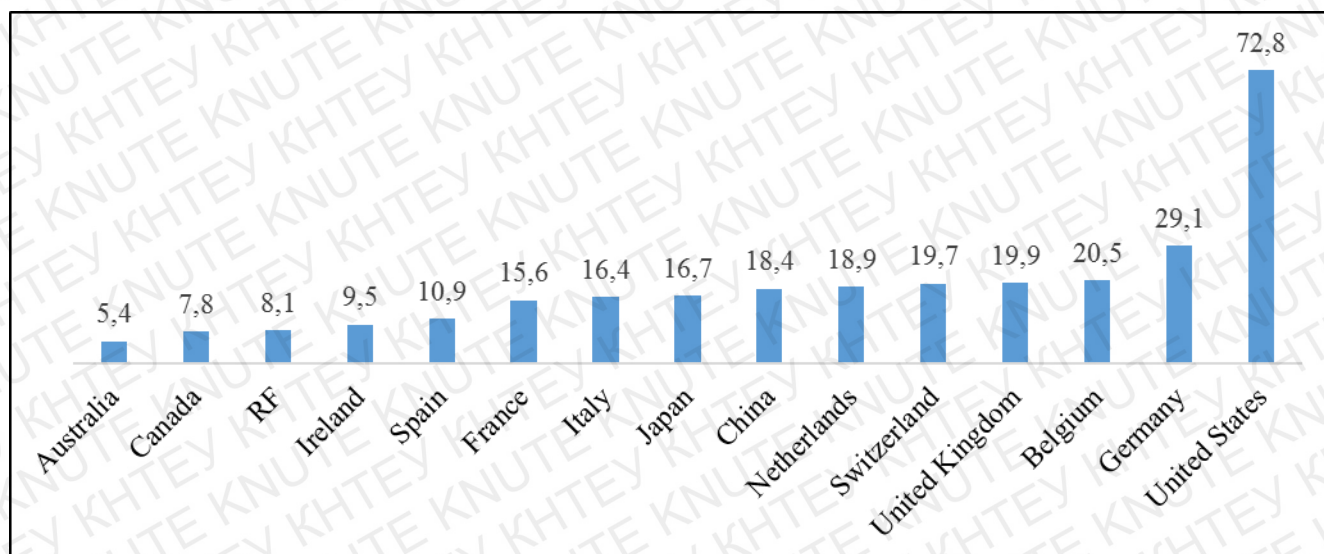


Figure 1.3 The world`s largest importers of pharmacological goods in 2018, billion USD [16]

US imports in 2,5 times more drugs than Germany which takes the second place in a rank (Fig. 1.3). The presence of Ireland on twelfth place seems to be really unexpected, as it imports 17% more drugs than Russian Federation, but has 21,9 times less inhabitants. These top 15 countries purchased 72,4% of all drugs and medicines imported during 2018 [16]. China and US demonstrate a significant increase (41% and

30,6% respectively) since 2014. Above mentioned Ireland has +148,8% for the same period. Australia and RF are among countries with the hugest decrease (approximately 20%).

Ukraine is located on the 43rd place in this ranking with the result of 1,5 billion US dollars (0,4% of world amount). To the author's opinion, import to Ukraine will increase because of the fact, that in 2017 Ukraine's government simplified the longstanding procedure of receiving permission if the goods have already been certified by international organizations.

The international pharmacological market is the place with the extremely high level of competitiveness. Small ambitious companies merely have chances to get accustomed to the market conditions and to find their place there – top 10 world companies possess 41,58% of the global market as of 2018. 15,73% refers to three largest companies – “Pfizer Incorporated”, “Novartis” and “F Hoffmann – La Roche Limited” [21].

6 of top 10 world largest pharmaceutical companies are based in United States, the other four – in Europe (in Germany, France and two in Switzerland). French based company “Sanofi” succeeded because of its primary sales activity in emerging markets (mainly in China). Only one company was founded in 21st century – “AbbVie”. The half of the ranking started its activity in the end of 20th century. 3 companies were founded in 1850s – 1890s and the oldest enterprise is “Merck & Co” leading its activity since 1661s.

All the companies are represented in pharmaceutical industry but all of them has particular specialization to focus on. For example, “Pfizer Incorporated” mainly deals with vaccines and molecule medicines, “F Hoffmann – La Roche Limited” operates on the field of the medicine for diagnosis, “Merck & Co” – on pharmaceuticals and animal health goods [27]. Four companies (“Novartis”, “Sanofi”, “GlaxoSmithCline” and “Bayer AG”) are officially represented on Ukrainian market and all of them are the members of top 10 pharmacological companies by amount of sales on Ukrainian market as of 2018. “Novartis”, “Sanofi”, “GlaxoSmithCline” and “Bayer AG” had a share of 12% of Ukrainian market in 2018.

Type of goods sold defines the revenue, the company can achieve by leading its operational activity. Thus the ranking of the companies with the highest revenue as of 2018 slightly differs from the ranking of market share (Fig. 1.4).

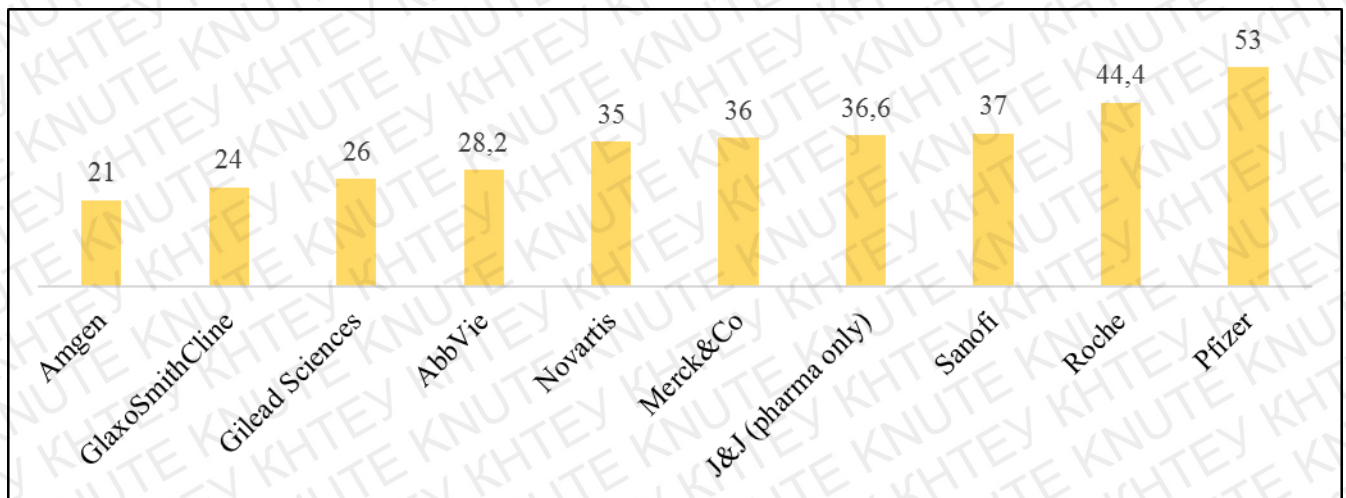


Figure 1.4 The world's 10 largest pharmacological companies by revenue in 2018, billion US dollars [11]

For example, such companies as “Amgen” and “Gilead Sciences” aren't well known to the ordinary person but they achieved such financial results because of the fact, that their goods are the best in treating particular deceases. “Amgen” is the producer of goods in genetics medicine, while “Gilead Sciences” is the producer of antiviruses and leading enterprise in the field of treating HIV/AIDS. “Merck & Co” produces the most effective tuberculosis vaccine in the world and “AbbVie” is the company, specializing in treating cancer [30].

In medicine innovations is the key factor that usually defines company's success. Thus, it is important to estimate the amount of money spent on research and development activity (R&D) by major players of the market (Fig. 1.5).

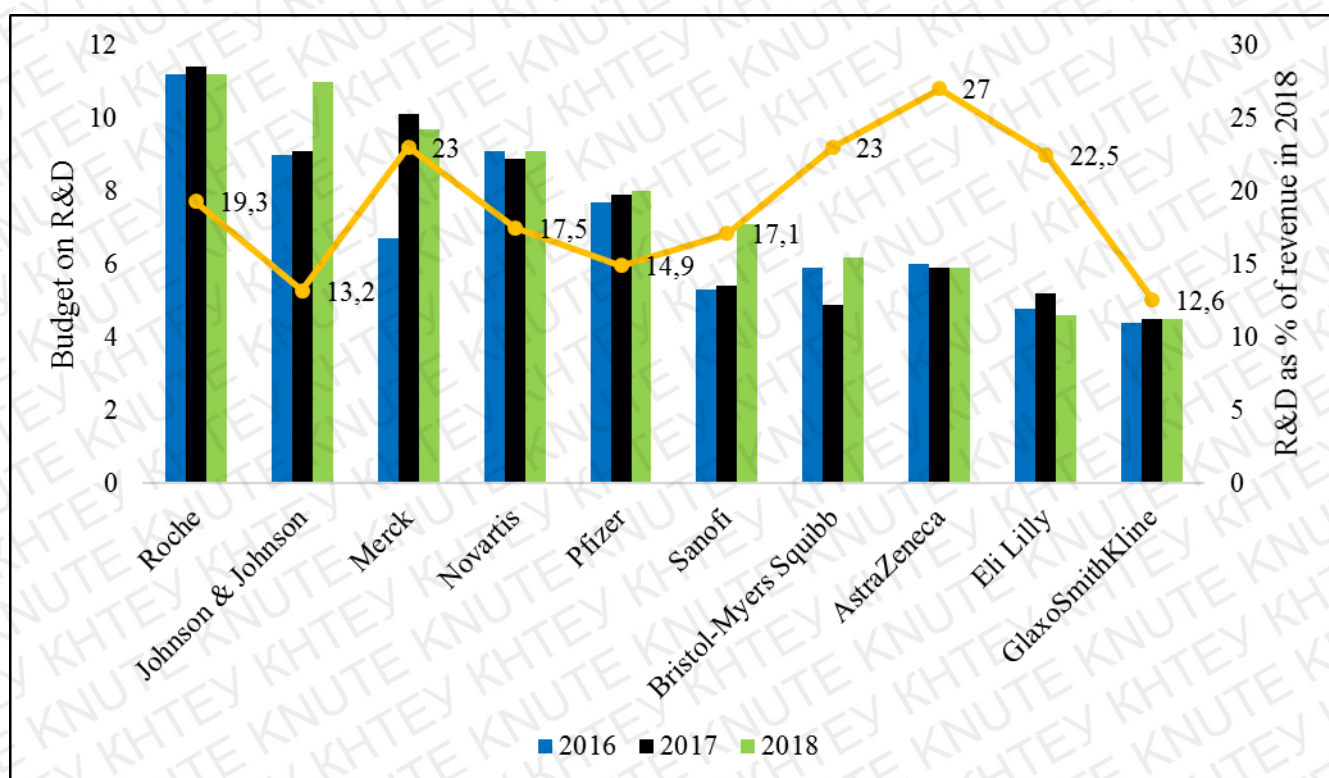


Figure 1.5 The world largest companies by R&D budget in 2016 – 2018, billion US dollars[16]

According to Figure 1.5 data, budgets on research and development reached 11 billion US dollars and the tendency of the last 12 years allows to forecast further increasing of R&D expenditures. “AstraZeneca” (British company located in Cambridge), spends 27% of its revenue on research and development, “Merck”, “Bristol-Myers Squibb” and “Eli Lilly” are chasing it with approximately 23% [18]. The situation in smaller companies is even more impressive – due to the lower revenue they may spend up to the half of enterprise’s revenue on R&D. Starting with 129 billion US dollars of general R&D spending in 2010 by the whole industry, 8 years later the companies increased the total budget on 50 billion. It is expected that world spending on R&D in this industry will reach the level of 213 billion dollars in 2024.

It proves that pharmacology is the sphere with one of the highest R&D expenditures. For example, enterprises of chemical industry spend 2 – 3% on R&D, aerospace and defense – 4-5%, IT companies – 12%. The semiconductors industry shows higher results – 25-28%. The overall average spending on R&D by industries involved in goods production is only 1,3% [28].

It can be explained by the complexity of the process of creating new drugs, thus the average spending on preparation to produce a new medicine is 4 billion US dollars and it commonly exceeds 10 billion USD.

These costs highly depend on the type of the goods. As an example, creating of an oncology drug is one of the most expensive because of high level of competitiveness and comparably slow research process. A lot of companies are represented in this sphere, while it is the world's fastest growing pharmacological category. Its sales increase from 9% to 12% annually over the last 5 years. The second place possess antidiabetic goods with the value of 8 – 11% per year [41].

There is a significant increase of sales of autoimmune drugs. These goods are one of the most expensive because of the type of diseases and complexity of production process. The market of such medicine grows 12,5 % annually. It is expected, that the share of these goods will continue to increase and will enter the top three drug types by 2021.

Companies are actively entering the pharmacological industry and it obviously leads to increasing of the competitiveness on the market.

One of the most effective tools of attracting customers is the price. That is why, in order to obtain the market share companies start reducing prices of the product. As of 2014 the pharmacological market increased the average prices on 3,9% considering the inflation. This value decreased to 1,6% and 1,2% in 2017 and 2018 accordingly [34].

1.2. Estimation of the financial and economic activities of “Pharmhim” Ltd

“Pharmhim” Ltd is a medium size enterprise of pharmacological sphere that leads its activity since 2002. It was founded with only purpose – to produce mebhydrolin (substance for the manufacture of diazolin). Till now it is the only CIS manufacturer that has antihistamine properties. Six years later company initiated the production of unpurified dioxidine – the raw material for a number of pharmaceutical substances. In

Indicator	thous. UAH	thous. UAH		thous. UAH		thous. UAH		thous. UAH	
Net income (revenue) from sales of products (goods and services)	96914	96372	-0,56	118852	+23,33	152286	+28,13	161207	+5,86
Cost of sales of products (goods and services)	70921	69514	-1,98	82513	+18,70	124505	+50,89	130478	+4,80
Gross profit	25993	26858	+3,33	36339	+35,30	27781	-23,55	30729	+10,61
Other operating income	1855	2106	+13,53	1919	-8,88	9301	+384,68	6647	-28,53
Administrative expenses	4819	3078	-36,13	4711	+53,05	7725	+63,98	7927	+2,61
Selling expenses	492	554	+12,60	478	-13,72	970	+102,93	1146	-18,14
Other operating expenses	3716	2965	-20,21	5738	+93,52	3477	-39,40	3618	+4,06
Financial results of operations:	21748	22367	+2,85	27331	+22,19	24910	-8,86	26843	+7,76
Financial expenses	265	208	-21,51	320	+53,85	712	+122,50	691	-2,95
Other expenses	353	319	-9,63	474	+48,59	1030	+117,30	806	-21,75
Financial results before tax:	22407	21922	-2,17	26537	+21,05	23287	-12,25	25130	+7,91
Expenses (income) income tax	3943	3946	+0,08	4758	+20,58	4073	-14,40	4490	+10,24
Net financial result	18464	17976	-2,64	21779	+21,16	19214	-11,78	20640	+7,42

Source: calculated and composed by the author based on “Pharmhim” Ltd data

According to the calculations net income from sales of goods and services has a stable growing tendency. In 2016 and 2017 it increased approximately a quarter comparing to the previous years. The same tendency can be seen in costs of sales of products. Gross profit can be characterized with a waving tendency. There is no stable increasing or decreasing of this index, it changes from year to year.

The same situation is with almost all types of expenses. Only administrative expenses are growing annually. The financial and other expenses in 2017 has the most remarkable amount - 120 percent higher than the previous year. The amount of selling expenses is 1146 ths. UAH in 2018. The most significant changes can be noticed in 2015 as during this year net financial result (profit) of “Pharmhim” Ltd was 17976 ths.

UAH (2,64% less than in 2014), but then the company increased its profit to the amount of 20640 ths. UAH in 2018.

Table 1.2

**Dynamics of volume and structure of assets of “Pharmhim” Ltd
in 2014 – 2018**

Indicator	31.12. 2014		31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018		
	thous. UAH	Share, %	Growth rate, % 2015/2014	Growth rate, % 2016/2015	Growth rate, % 2017/2016	thous. UAH	Share, %	Growth rate, % 2018/2017
Total Fixed assets	42181	37,31	+3,14	+13,94	+12,45	56402	32,08	+1,18
Inventories	34891	30,86	-9,70	+18,70	+64,74	66478	37,81	+7,90
Accounts receivable for products, goods, works, services	16801	14,86	+1,20	+5,69	+5,83	22646	12,88	+19,08
with a budget	5756	5,09	-13,55	+3,28	+136,14	10293	5,85	-15,18
Other current receivables	1785	1,58	-48,01	-61,75	+1081,69	3427	1,95	-18,31
Money and cash equivalents	6831	6,04	+4,01	+29,87	-33,40	8346	4,75	+35,82
Prepaid expenses	308	0,27	-4,22	+7,80	+24,53	411	0,23	+3,79
Other current assets	4469	3,95	-11,14	+10,88	+83,28	7802	4,44	-3,32
Total for Section II	70841	62,66	-7,14	+13,72	+49,14	119403	67,91	+7,02
Total	113055	100	-1,53	+11,76	+34,51	175838	100	+5,07

Source: calculated and composed by the author based on “Pharmhim” Ltd data

According to the information of the table 1.2, there were no significant changes of the amount of the parts of the properties of certain indexes except for other current receivables. In 2017 it increased more than 11 times comparing to the previous year. Inventories and fixed assets had a deviation about 7 percent. 7 among 11 indicators have a tendency of increasing from year to year. The growing tendency can be observed within 4 positions. The increase can be noticed within the indicator accounts receivable for products, goods, works and services – in 2015 it was only 1,2% and in 2018 - almost 20%.

Two indicators (prepaid expenses; other current assets) show a small the rate of growth during 2014-2018. The rest part of indicators is characterized with increasing tempos of growth till 2016 / 2017 and decreasing after one of these years.

Four indicators show an obvious decrease comparing to the previous year (up to 61% in other current receivables, but mostly from 9 to 18%).

The total amount of properties was rising ever since 2015 – that year there was a minor reduction in 1,5%.

The table 1.3 demonstrates results of calculation of the volume and structure of properties of “Pharmhim” Ltd in the period of 2014 – 2018. As it can be seen, the amount of the registered capital has increased in absolute values (+135 thousands UAH) during the observed period. But in terms of relatable values it has decreased in relation to the total liabilities (–0,6% during five years).

Total equities were growing from year to year what results in +58,56% in 2018 comparing to the data of 2014. By going deeper into the details it can be spotted that the company`s equity was growing not because of borrowed capital but because of the increasing amount of retained earnings. Such fact gives us the ability to state, that during the period of 2014-2018 “Pharmhim” Ltd became more stable and independent on external creditors.

Current liabilities and ensuring became higher. In general, they increased on 52,84%. Nevertheless, most of the described indicators have a waving tendency of growing without permanent increasing or decreasing of values. As a proof of this, it is important to mention liabilities for insurance payments increasing during 2 years (360 to 540) and decreasing to 32 ths. UAH in 2018.

Table 1.3

**Dynamics of volume and structure of properties of “Pharmhim” Ltd
in 2014 – 2018**

Indicator	31.12. 2014	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018

	thous. UAH	Share, %	Growth rate, % 2015/2014	Growth rate, % 2016/2015	Growth rate, % 2017/2016	thous. UAH	Share, %	Growth rate, % 2018/2017
The registered capital	1508	1,33	0,00	+7,82	0,00	1643	0,93	+1,05
Retained earnings (uncovered loss)	39604	35,03	+2,28	+3,08	+46,02	63690	36,22	+4,47
Total equities, Section I	41202	36,44	+1,97	+3,25	+44,30	65333	57,79	+4,38
Liabilities for goods and services	45217	40,00	-2,15	+0,05	+12,08	71261	63,03	+43,63
for payments to budget	360	0,32	+50,00	-77,59	-7,44	138	0,12	+23,21
for insurance payments	13	0,01	+184,62	-94,59	+1950	32	0,03	-21,95
for payments of wages	596	0,53	+35,74	-41,41	+50,63	783	0,69	+9,66
Other current liabilities	26117	23,10	-9,33	+24,06	+6,50	38291	33,87	+22,38
Total liabilities, Section III	72300	63,95	-4,14	+16,92	+0,90	110505	97,74	+35,14
Balance	113055	100	-0,15	+11,76	+34,51	175838	100	+5,07

Source: calculated and composed by the author based on "Pharmhim" Ltd data

Total liabilities were growing each year and eventually reached the 175838 thousands UAH what occurs to be 155,53% higher than in 2014. The largest augmentation is related to 2016 and 2018 (16,92% and 35,14% accordingly). Increasing liabilities is not the result of weak activity of the enterprise. On the contrary, this leads us to the conclusion that in this particular case "Pharmhim" Ltd is increasing its primary activity what in turn causes the amounts of money, which the enterprise has to cope with, to grow [6, p.34].

What is really unusual and can be a cause of underdevelopment of particular spheres of company's activity – "Pharmhim" Ltd avoids bank credits. During these five years there were only 2 bank loans, mentioned in accounting documents: short-term banking credit in 2016 and long-term in the following year with the total sum of 29785 thousand UAH.

As it can be seen in Table 1.4, current ratio value of “Pharmhim” Ltd is rather low comparing to the acceptable level for this industry (1,5). It means that the company cannot meet short-term debt obligations. The value of quick ratio during the chosen period is also unsatisfying – it should be approximately 1 for the company to feel safe about covering current liabilities with the help of liquid current assets. Cash ratio takes into account only the most liquid short-term assets [9, p.223-229]. There is no value that is considered to be ideal – the conclusion is that too small value means insufficient amount of resources to cover liabilities. High value shows that these resources have underlying potential which is not used. Net working capital has positive value starting from 2017 and it means that the company can cover short-term liabilities almost immediately.

Table 1.4

Liquidity and financial stability ratios of “Pharmhim” Ltd

Indicator	31.12. 2014	31.12. 2015	Absolute difference to the level of 2014	31.12. 2016	Absolute difference to the level of 2015	31.12. 2017	Absolute difference to the level of 2016	31.12. 2018	Absolute difference to the level of 2017
Liquidity ratios									
Current ratio	0,980	0,949	-0,031	0,923	-0,026	1,364	+0,441	1,081	-0,284
Quick ratio	0,497	0,495	-0,002	0,462	-0,033	0,611	+0,149	0,479	-0,132
Cash ratio	0,094	0,103	+0,009	0,114	-0,011	0,075	-0,039	0,076	+0,001
Net working capital, ths. UAH	-1459	-3527	-2068	-6228	-2701	29800	+36028	8898	-20902
Financial stability ratios									
Equity ratio	0,364	0,377	+0,013	0,349	-0,029	0,374	+0,025	0,372	-0,002
Debt to equity ratio	1,755	1,649	-0,106	1,868	+0,219	1,306	-0,562	1,691	+0,385
Accounts payable to accounts receivable ratio	2,970	3,026	+0,056	3,164	+0,138	2,313	-0,851	3,039	+0,725

Source: calculated and composed by the author based on “Pharmhim” Ltd data

Equity ratio has a growing tendency but still is a quite low. The ideal value is thought to be 0,5 or a bit higher. It means that company has the ability to cover its debts

with the help of its equity. It differs from 0,35 to 0,37 and it means that in case of emergency “Pharmhim” Ltd will be able to cover up to 75% of liabilities using equity.

Debt to equity demonstrates that this enterprise has 1,654 hryvnias of debt on 1 hryvnia of its equity averagely. It is the result beyond the measures of what is thought to be good for a company (0,5 – 0,7). Accounts payable to accounts receivable ratio shows that this factory has to return up to 3,1 times more money than it expects to receive. This can be partly explained by renovation process which took place in the previous 2 years.

Table 1.5

Dynamics of turnover and profitability ratios of “Pharmhim” Ltd in 2015 – 2018

Indicator	2015	2016	Absolute difference comparing to 2015	2017	Absolute difference comparing to 2016	2018	Absolute difference comparing to 2017
Turnover ratios							
Asset turnover	0,859	1,008	+0,149	1,044	+0,036	0,939	-0,104
Inventory turnover	2,094	2,395	+0,301	2,515	+0,120	2,037	-0,478
Accounts receivable turnover	5,702	6,797	+1,095	8,235	+1,438	7,739	-0,496
Accounts payable turnover	1,554	1,865	+0,310	2,653	+0,788	2,159	-0,494
Cash conversion cycle	3,464	10,343	+6,879	51,848	+41,505	57,258	+5,410
Days inventory outstanding, days	239	207	-32,229	190	-16,647	227	+36,871
Profitability ratios							
ROE	0,432	0,510	+0,078	0,363	-0,147	0,323	-0,040
ROA	0,160	0,185	+0,025	0,132	-0,053	0,120	-0,011
ROI	0,279	0,306	+0,027	0,182	-0,123	0,191	+0,008
Net profit margin	0,187	0,183	-0,004	0,126	-0,057	0,128	+0,002

Source: calculated and composed by the author based on “Pharmhim” Ltd data

Asset turnover shows that a company generates about 0,86 to 1,04 hryvnias of sales for every hryvnia invested in assets. Inventory turnover variates from 2 to 2,5 and means how many times the company has sold and replaced inventories during the period of research. The higher is the value – the more money flow through the company. Accounts receivables turnover shows the efficiency of collecting debts from company`s customers. The lower is the value – the better [10, p. 58]. On the contrary, the higher is the value of accounts payable turnover – the longer the company can use

costs that must be paid. Days inventory outstanding shows how many days it takes the company to convert its inventories into cash. Till 2017 there was a reassuring tendency of acceleration of the process but the following year this index returned to the level of 2015.

Return on assets, return on equity and return on investment have a decrease tendency. This, as it seems to us, can be explained by opening of new production buildings, updating and buying new equipment and investments in technologies. All this will not lead to increasing of income immediately. Net profit margin demonstrates how much profit arises in comparison to revenue. There was a significant decrease of 31,14% after 2016 but the situation seems to become stable over the next two years.

Conclusions to part 1

The world pharmacological market is not concentrated within one particular region. It is spread among North America, Europe and Asia. Countries of South-East Asia, North Africa and South America are the ones with the highest tempos of growing.

If a company tend to be successful on the international market it is crucially important to specialize in production of goods for which it has the relative advantages. One of the core factors in pharmacy is the intensiveness of company`s innovative and research and development activity. It is the industry with one of the highest research and development to income ratio and averagely is not less than 18% [33, p. 107].

“Pharmhim” Ltd is a medium size enterprise of pharmacological sphere that leads its activity since 2002. The company is doing its best to receive ISO 13485, GMP (Good Manufacturing Practice), GLP (Good Laboratory Practice), GDP (Good Distribution Practice) certificates over the next 10 years. In order to jumpstart this process, the company regularly sends its management personnel to serve an apprenticeship in European countries, particularly in Germany.

Assessing the company`s financial activity over the last five years give the possibility to state that the company has a waving tendencies of growth. It can be

explained by the fact, that major renovations, equipment updates and implementations of new production technologies took place in 2015 – 2017.

“Pharmhim” Ltd, which is willing to operate on the international market of products, raw materials and semi-finished goods, does not use its potential of allocating resources to full extent. During this described period bank loans took place only once. As the company has strong positions on local market and perspective positions on international market in Western Europe and Asia, it is necessary to focus on the level of export potential of “Pharmhim” Ltd estimation.

“Pharmhim” Ltd is a medium size enterprise of pharmacological sphere that leads its activity since 2002. It was founded with only purpose – to produce mebhydrolin (substance for the manufacture of diazolin). Till now it is the only CIS manufacturer that has antihistamine properties.

At the beginning of 2010s company managed to build a number of warehouses for raw materials and liquids. In 2013 microbiological division became part of the quality control laboratory. This laboratory was certified to perform quality and safety control of medicines. According to results of the research, conducted by this laboratory, the quality and purity of company`s goods variates from 94 to 99,5%. For the last 6 years 5 new goods appeared in the product portfolio. Production of 4 goods were mastered during the same period. The list of goods and semi-finished products consists of 62 entitlements as of June 2019. A number of goods, not include into the list, aren`t produced permanently and are done according to outsource request.

PART 2. ASSESSMENT OF THE LEVEL OF EXPORT POTENTIAL OF “PHARMHIM” LTD ON THE PHARMACOLOGICAL INDUSTRY MARKET

2.1. Research of competitive environment of “Pharmhim” Ltd

Ukrainian pharmacological market is currently overcoming strong structural changes caused by its natural development and reorientation of country's course towards European integration in 2014. That year is characterized by the biggest total amount of export; while 2015 has shown a significant decrease - 34,54% in monetary value (retail). Since 2015 there is a growing tendency of retail market, and according to the forecasts, the level of 2013 may not be reached until 2021 [15]. Ukrainian retail market is estimated in approximately 2,218 billion US dollars in 2018 (1,6 billion USD lower comparing with 2013).

Besides that, remarkable fluctuations have happened on Ukrainian local pharmaceutical market (Figure 2.1).

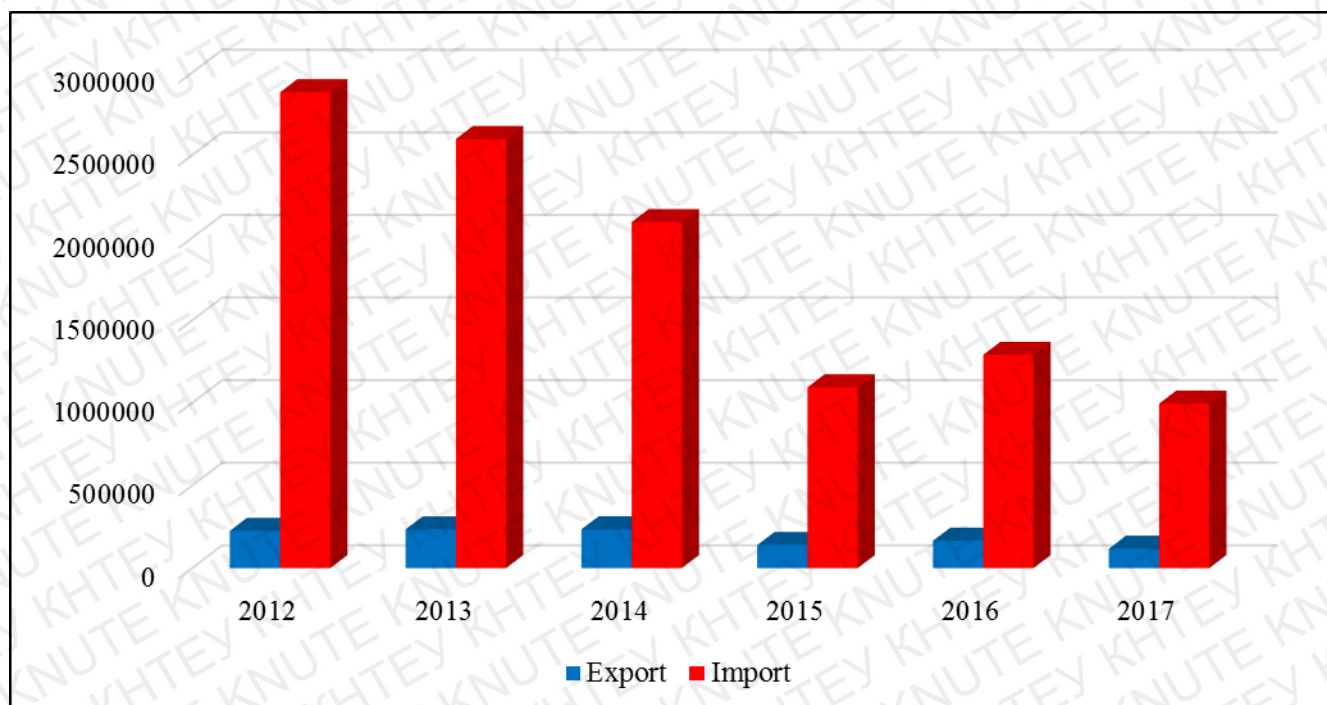


Figure 2.1 Export and import of pharmacological goods in Ukraine in 2012 – 2017, thousands US dollars [13]

Ukrainian market used to take from the global market far more than it used to give. It is obvious that there is a tendency of import decreasing – it can be explained by the fact, that local residents have lower paying ability, they are buying less and are looking for cheaper (but not always reliable) drugs that are, as a rule, produced by local enterprises.

However, there is a very positive tendency – Ukrainians are giving up on using medicine without doctors advise and buying more goods according to the receipt. In 2016 4,6% of total amount of drugs consignment belonged to this category, while the following year it raised up to 11,15% [14]. Unfortunately, only 34,53% of all sold with receipt drugs were of Ukrainian origin. If talking about strong deceases our citizens hardly believe in quality of domestic produced goods. According to the data, provided by State Statistics Service of Ukraine in 2018, almost 40% of respondents often face placebos and adverse reactions when using Ukrainian pharmacological goods [41]. Nevertheless, the representatives of State pharmacological center of Ministry of Health Care state, that 96% of adverse reactions are forecasted – they are mentioned in the instructions for medicines.

As of 2017, almost 60% of all drugs sold were of cheap segment (less than 100 hryvnias), with only seventh related to pharmacological goods with high price (over 250 hryvnias). These 58,6% of goods formulated only 8,8% in money equivalent when a little less than 15% of expensive goods resulted into 63,4% of total cost of bought medicine [13].

The goods, that were the most popular in Ukraine as of 2017 are represented in Supplement C. What may be concluded is that 7 of 12 represented goods belong to cheap (according to above mentioned gradation) medicines. Two of them – are of the medium price and three of high-price segment.

Nevertheless, this list does not represent the real illnesses of Ukrainian population. Here two main reasons should be mentioned: advertisement and advices. Most drugs in Ukraine are bought not according to doctor`s receipt but according to

friend`s, relative`s, neighbor`s advices. Patient sees no need to turn to the doctor when TV advertisement promises immediate affect and improvement of conditions. In the first half of 2017 local market players spent 226 million US dollars on TV advertisement [18]. 1,8 million USD was directed towards radio advertisement and 854 thousand USD towards newspapers and magazines. The leaders in this field are “Farmak”, “Sanofi” and “Sandoz”. Ukrainians trust foreign companies much more than local because of the fear of forgeries [14]. This factor is often used by producers and pharmacies – for example “Norwasc” by “Pfizer” costs on our market approximately 540 hryvnias when in Poland the price is equal to 95.

It is also very important to mention, that 9 of the top 12 medicines are painkillers and saline. The goods, which do not treat the reason of illness but treat its consequences and side effects. This means that Ukrainians are evading visits to doctors and are trying to treat minor illnesses by themselves. Such situation is very untypical for developed countries. The statistics of 2016 shows, that in Europe there is no medicine in top 100 consumed drugs, that treats consequences of the illness – all goods are related to serious deceases (HIV/AIDS, cancer, diabetes, hepatitis, sclerosis etc.) [36].

The other problem is that most of these drugs are not represented on the global market and thus did not pass quality validation/certification in world-acknowledged institutions. US Food and Drug Administration (FDA) issues a report of active ingredients [35], that are acceptable for usage. British National institute for Health and Care Excellence (NICE) issues a report of clinically recommended active ingredients [23].

Eight of listed above goods (active ingredients) are not represented in any of these ranking. Five are missing in “Cochrane” (a British charity formed to organize medical research findings so as to facilitate evidence-based choices about health interventions faced by health professionals, patients, and policy makers) data bases.

Thus, 9 of represented in top 12 medical goods in Ukraine in 2017 have no proof that they have any significant impact on the process of illness treatment. 26% of consumption that year was related to medicine with non-confirmed effectiveness [14].

International institutions acknowledge only three drugs among mentioned above: Nurofen, Citramon and Natrium Chloride.

Unfortunately, there is no organization in Ukraine, responsible for the information on medicine package and for information in advertisement (on TV, radio, periodical literature) of these medicine. Because of these unscrupulous drug producers do not miss a chance to declare further more than their goods are really worth.

Drug consumption is absolutely different in all regions of Ukraine. The most active are customers in Kiev, Kharkiv, Zaporizhia and Odessa regions. During 8 months of these year each visitor of pharmacies spent averagely fifty dollars. In addition to this, population of Odessa and Kiev buys cosmetics and additives much more often than in other regions. In the central part of Ukraine Essentiale, Citramon and Actovegin are the most popular medicines. No-spa, Amicsin and Nimesil are consumption leaders in Kiev [13]. In Kharkiv painkillers aren't so popular, people there are looking for medicine against cold. Antibiotics are especially in need in Sumy region. The needed goods aren't the same and that is why local companies are obliged to enlarge the list of production – orientation on some particular region will not allow to enhance company's position in whole country.

Beside drugs, goods for mothers and newborn are in demand. Monetarily, consumption of such goods increased on 41% in 2018 comparing to 2017. In this field the first place belongs to Johnson and Johnson – they possess up to 32% during the last 6 years.

Table 2.1

10 largest pharmaceutical companies on Ukrainian market in 2015 – 2018, %

Company	Market share, %			
	2015	2016	2017	2018
Farmak (UA)	6,0	5,7	5,4	5,6
Sanofi (FR)	3,5	3,4	3,4	3,8
Arterium (UA)	3,2	3,7	3,9	3,7
Darnitsa (UA)	3,6	4,0	3,3	3,4
Zdorovje Group (UA)	2,9	3,0	3,2	3,2

Berlin Chemie (DE)	2,3	2,8	3,0	3,1
GlaxoSmithKline (GB)	3,1	2,9	3,0	3,1
Novartis (CH)	2,4	2,6	2,7	2,6
Bayer HealthCare (DE)	2,4	2,1	2,2	2,5
Takeda (JP)	2,2	2,0	1,9	2,3
Rest of the market	68,4	67,8	68,0	66,7

Source: composed by the author based on [13]

The competitive environment of Ukrainian pharmacological market is quite stable and competitive (Table 2.1).

It may be seen that companies on the local market have approximately the same market share during the last 4 years. This means that influence of the companies, their amount of sales and level of innovation activity can be forecasted and according to the obtained results appropriate decisions can be taken.

The ten companies have a wide range of produced goods: from cough pills to pills for rare blood deceases. As an example, “Farmak” produces 266 medicines, where 120 are sold without recipe [16]. Semi-finished goods and products produced by the company aren't added into this stock list. The other companies have not less than 200 goods in their lists.

It is also important that the chosen market is neither monopolistic, nor oligopolistic. A great number of local and foreign companies are represented on the market, the level of competitiveness is extremely high and thus innovations in goods, production facilities, marketing policy, advertisement and goods` quality control became the key success factors.

In leading its activity company is obliged to analyze the influence of competitive environment. It allows to define the level of dependence of the company on fluctuations and to define whether it can turn to risky decisions. Thus such an evaluation of interdependence of “Pharmhim” Ltd is represented in the Table 2.2.

Table 2.2

Competitive environment`s estimation of “Pharmhim” Ltd

Competitive forces	Factor	Factor`s condition	Estimation of factor in
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		points			
		1	2	3	
1. Emergence of new competitors	1.1. Level of entry barrier	Significant saving by scope of sales		X	
		High level of financial investment			X
		Low level of product differentiation	X		
		Conservatism of existing supply chains		X	
		Need of involvement of regular consumers		X	
	1.2. Reaction of existing enterprises on emergence of new competitors	Absence of active marketing policy		X	
		Low level of innovational activity in HR management		X	

Continuing of the table 2.2

		Weak usage of methods of competitive activity	X		
Value of emergence of new competitors (I_{nc})			1,875		
2. Appearance of substitutive goods	2.1. Influence of substitutive goods	Goods with the lowest price have an advantage		X	
		Tendency to selling of cheap and less qualified goods	X		
		Absence of significant difference in the range of main companies	X		
		Appearance of lots of substitutes as a result of copying of popular trade marks			X
Value of influence of substitutive goods (I_{sg})			1,75		
3. Competitive force of buyers	3.1. Influence of buyers on competitive positions of a company	High level of buyers` organization	X		
		High abilities of buyers in choosing analogs			X
		High level of goods standardization		X	
		High variability of tastes and preferences of buyers about firm`s goods	X		
	3.2. Trade force of buyers	Increasing level of customer awareness about the good		X	
		High price elasticity of goods	X		
Value of influence of buyers (I_{by})			1,67		
4. Competitive force of suppliers	4.1. Influence of suppliers on competitive positions of a firm	Limited ability of enterprise in choosing suppliers		X	
		Tendency to shortage of duration of economic relations	X		
		Low costs of transmitting to another supplier	X		
	4.2. Limitation of resource potential of a firm	Absence of working capital	X		
		Lack of warehouses	X		
Value of influence of suppliers (I_{su})			1,2		
5. Competitiveness between firms represented on the market	5.1. Degree of competitiveness intensity	Generalizing value of competitiveness intensity			X
		Presence of great number of small competitive firms			X
		Small markets are strong competitors	X		
		Insignificant increase of demand on the enterprise`s goods		X	
	5.2. Competitive positions of chosen firm	Good firm location		X	
		Absence of competitors	X		
		Researched competitors have no powerful competitive advantages	X		
Value of intensity of competitiveness among firms (I_c)			1,86		

Source: calculated and composed by the author based on [43]

Calculation of coefficient of generalized influence of competitive environment on the activity of “Pharmhim” Ltd can be conducted in the following way:

$$C_{\text{influence}} = 0,2 * I_{\text{nc}} + 0,2 * I_{\text{sg}} + 0,3 * I_{\text{by}} + 0,1 * I_{\text{su}} + 0,2 * I_{\text{c}}$$

By using the information from the table, the following value was obtained:

$$C_{\text{influence}} = 0,2 * 1,875 + 0,2 * 1,75 + 0,3 * 1,67 + 0,1 * 1,2 + 0,2 * 1,86 = 1,718$$

According to this value it can be concluded that the level of competitive environment's influence on company's activity can be described as moderate. The company perceives the influence of new arising companies and activity of companies already represented on the market. At the same time the influence of suppliers can be neglected because of the fact that company has access to particular needed resources and that makes it independent. Beside that the specifics of the market it gives much power to the consumers. They feel free in choosing analogs of the goods while the goods are standardized and differ not that significantly as, for example, in the field of consumer's electronics or food.

2.2 Evaluation of export potential of “Pharmhim” Ltd

The export activity is the core development aim defined by the company's headquarters for the following 7 – 9 years. The enterprise is expected to diversify its counteragents' network by signing agreements with mainly Central and Western European and Asian countries.

International activity became the important part of company's activity in March 2009 when the company signed first agreement for supply of Sodium Acetate Trihydrate (CAS Registry Number 6131-90-4) with Belorussian joint limited liability company “Lekpharm” [31]. Since then the company was mainly working with Romanian, Belorussian, Kazakhstan, Uzbekistan and Russian Federation's enterprises.

In 2011 company was trying to re-orient its activity towards European companies but faced a number of difficulties and obstacles in standardization, certification and receiving permissions to lead its activity in European Union. Furthermore, the important problem for the company was that it used to produce a lot of semi-finished products with limited list of consumer goods. As of 2012, 77 companies located in EU produced

goods and semi-finished products of about the same quality in stock list [28]. Thus the competitiveness in this industry was very high with low profits which, in certain situations, appeared to be lower than similar operations conducted on the internal market.

Market research, conducted in February 2013, showed, that the profit of operations with goods that are ready for selling and do not require further handling can be 35 – 62% higher depending on the pharmacological group. Half a year before the company started to implement changes in its production process targeting towards extending its list of produced goods that do not require further treatment and are ready for selling. This is why till the end of market research period company was ready to certify its newly created products and to orient towards foreign companies.

The main problem, faced by the company, appeared to be the lack of awareness of the company's activity on the European markets. Since 2011 there were from 5 to 8 companies, activity of which could be characterized as permanent and continuous. Approximately 85% of all signed contracts were the agreements held once only with spot prices. That is why potential counter partners often refused even to discuss the possibility of signing contracts – they had no real information about company's reliability and economic position.

To avoid such situations in future, “Pharmhim” Ltd created a new sub-department, which deals with tasks and issues of company's activity on international market, including both export and import operations.

The main idea of international activity, defined by the company's headquarters, is the search of a number of long-term partnerships with companies having a good image on the targeted markets. It may allow “Pharmhim” Ltd to refer to such activity in case of negotiating in future. Such actions will also allow to lower marketing costs of the company, where European prices are obviously among the highest across the world. Local TV stations charge approximately 4,6 thousand Euro per 30 second video (1 million views). 1,8 thousand less will cost audio advertisement on a radio station per 1 million listeners. Regional newspapers charge five hundred to 38 thousands Euro per a quarter page. Price lists for advertisement on national channels are individual and rarely

are disclosed, but are thought to vary from 15 to 350 euro (each 1000 views) per 30 seconds video depending on the channel, time and day. Prime time advertisement usually costs 4 – 6 times more than the same one in the morning. The advertisement on national holidays and during major events may cost extra sums – the record was settled in 2018 by an American NBC TV network (665,667 dollars per 30 second video during the broadcast of “Sunday Night Football”).

The advertisement budget of “Pharmhim” Ltd is currently limited, thus the company cannot afford advertisement on international market (for example, 2 local TV channels and advertisement on 3 radio stations 10 times a day will cost at least 176 thousand euro in 1 chosen country on a regular day). Thus, having limited financial resources on advertisement in the home country, there can be no discussion towards external markets [45, p. 425]. The largest opportunity here is an Internet advertisement which is comparably cheap and covers almost all consumer groups. In online advertisement company pays only for those views that came from external links – when the potential client is interested in some information and goes through the link. The enterprise does not pay for the views, when people saw the add but had no interest in it.

Table 2.3

Dynamic of export activity indicators of “Pharmhim” Ltd in 2014 – 2018

Indicator	2014	2015	2016	2017	2018
Financial result of export operations, ths. UAH	8538	7940	10414	10738	12362
% of total company's sales, %	39,26	35,49	38,10	43,11	46,05
Top 3 goods sold	Decamethoxine Glycine Sodium acetate	L-methol Decamethoxine Myramistin	Sodium acetate Phenibut Thyomol	Decamethoxine Formic acid Sodium acetate	Acetic acid Formic acid Acrylamide
% of top 3 goods in total export, %	21,31	22,75	20,93	19,47	19,78
Financial result of the same operations conducted on local market,	8023	7349	8703	9053	10276

ths. UAH					
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Source: calculated and composed by the author

According to the information of Table 2.3 the following conclusion can be obtained: company was increasing amount of its export activity during the researched period. Financial result of export operations in 2018 was 44,79% higher comparing to the level of 2014. It is also important to mention that the enterprise was focused on the export activity during the observed period. The share of export in company's total activity has increased on 6,79 percent.

The company's most sold goods differ year to year what means that company is not concentrated on particular goods and is leading a policy of diversifying of its goods structure. To support these words, the share of top three goods exported in the total export was decreasing during the observed period and has finally decreased on 1,53 percent.

Table 2.4

Geographical structure of export activity of "Pharmhim" Ltd in 2014 - 2018

	2014	2015	2016	2017	2018
Share of export to top-5 countries, %	Belorussia 26	Kazakhstan 19	Belorussia 16	Uzbekistan 20	Belorussia 18
	Belorussia 26	Kazakhstan 19	Belorussia 16	Uzbekistan 20	Belorussia 18
	Kazakhstan 14	Belorussia 17	Kazakhstan 15	Kazakhstan 13	Kazakhstan 16
	Russian Federation 12	Russian Federation 14	Uzbekistan 15	Russian Federation 9	Uzbekistan 15
	Moldova 8	Germany 10	Moldova 11	China 8	Lithuania 12
	Uzbekistan 6	Azerbaijan 5	China 9	Romania 8	Germany 7
	Share of other countries, %	34	35	41	42

Source: calculated and composed by the author

From Table 2.4. it may be concluded that "Pharmhim" Ltd export activity is mostly occupied by several major countries. The main countries of activity are, as a rule, Asian and European countries. It may mean that the enterprise is currently unable to lead its activity on a high level in the majority of markets in which it is represented.

To access the effectiveness of company's export activity we need to analyze all costs which keep up with export operations and compare it with the activity on the local market. As the company has no shipment department and does not provide services of goods transportation, in leading of export activity it turned to international carrier companies. The main carrier companies were "DHL", "Schenker", "Schneider", "Barsang", "Gebruder Weiss" etc. All companies provide different rate tables depending on distance, weight, seize and features of goods. Transportation and handling costs were growing each year and appeared to be 178, 192, 208, 207 and 219 thousand hryvnias from 2014 to 2018 accordingly. As a result, effectiveness of export can be calculated as the relation of total revenues from export sales to the total costs of these goods. Customs clearance costs are not included here while the company has no burden of it. By doing mathematical calculations the authors obtained the dynamic of export effectiveness indicator (Table 2.5).

Table 2.5

Dynamics of export effectiveness indicator of "Pharmhim" Ltd in 2014-2018

Year	2014	2015	2016	2017	2018
Export effectiveness	1,203	1,241	1,262	1,273	1,274

Source: calculated by the author

Eventually we may conclude that company was developing its activity and increasing operations' effectiveness during each year. It results in increasing of income and profit of company's primary activity.

As of May 2019, company is leading its activity with a number of counter partners in Bulgaria, Croatia, Romania, Greece, Sweden, China, Vietnam, India and Laos. The Asian part of the listed above can be characterized as emerging pharmaceutical markets which have the growth rate of 1,5 – 3,4% a year. The list of required goods is spreading each year, thus it is crucially important to gain stable promising position on the above mentioned markets.

These are the markets, where "Pharmhim" Ltd faces major competition from the side of such companies as "Belmedpreparaty" (Belorussia), "Rosta" (Russian

Federation), AS “Grindex” (Latvia) etc. 2 of mentioned above companies offer goods of the same quality with a slightly different price level. Latvian company`s goods list is much wider comparing to “Pharmhim” Ltd. Thus the current priority of the company is to adapt its distribution strategy to the competitors` actions in order to guarantee further development and prosperity.

To estimate the reserves of further development and to find possible disadvantages of the goals chosen by the company the authors decided to turn to enterprise`s SWOT analysis on international pharmacological market [7, p.146]. Table 2.6. represents strong and weak points of company`s activity on European and Asian medicine markets, its threats and opportunities.

Table 2.6

SWOT analysis of “Pharmhim” Ltd activity on international pharmacological market

Strengths	Weaknesses
<ul style="list-style-type: none"> • Cheap labour force in home country • Cost effective production technology • Effective clinical trial centers • High standards of purity control • Developed manufacturing base • 93% of production is certified by international organizations • Competitive product portfolio • Up-to-date facilities 	<ul style="list-style-type: none"> • Lower R&D budget comparing to foreign companies • Weak brand image • Lack of strategic planning • One person possesses the power of decision making • Low country`s share in world pharmaceutical market • Production of duplicate drugs • A great number of competitors • Limited experience in international trade operations
Opportunities	Threats
<ul style="list-style-type: none"> • Production of generics • High growth rate of the world market • Contract manufacturing • Globalization process • Innovative therapeutic products • Demographic trends • Oncology segment • Emerging markets 	<ul style="list-style-type: none"> • Instable consumer buying behavior • Shortage of skilled workforce • Drug price controls • Growing inequality • Technological breakthrough

Source: composed by the author

The company`s main opportunity, which also corresponds with enterprise`s corporate strategy is the production of generics.

Major drug companies usually have 5 to 10 year patents for the formulas used in drug production. End of these periods and beginning of new one are, as a rule, characterized by a massive breakthrough in technological process. The innovations are to be implemented in the next generation of goods, for which new patents will be created. Market leaders, as a rule, do not prolong expiring patents on out-of-date non used technologies. This is an opportunity for small and medium sized enterprises to enter the market of particular goods. The formula is slightly changed; active substance remains the same. Goods quality and effectiveness remains on the level of the previous generation but production costs are much lower what results into more attractive price for the consumers. Such products are called generics [47, p.68] and currently are one of the goods with the highest level of consumption on emerging markets and on most Asian and Eastern European markets [2, p.98]. A number of companies are represented in the sphere of generics, but, what is extremely important, none of them covers the field of semi-finished products or goods needed during the treatment in hospitals and during surgeries, surveys, disinfection, sterilization [1, p.217] etc. The world drug market has a tendency to increase of the field of goods dealing with deceases and its prophylaxis. Thus a number of medium sized companies reorient their activity to this field what leads to lower level of competitiveness on the market of goods that act as supplements to the general process of treatment.

Due to a number of natural and technogenic factors oncology segment is practically the fastest developing. The research and development budgets on investigation of treatment of such illnesses is among the highest with a growing tendency over the past 11 years. According to WHO information, 8,1 million people died of oncology deceases in 2012 [17, p. 260]. 6 years later the barrier of 9,6 million patients per year was hit. The core competitors both within and outside home country's markets have their products represented in the mentioned segment. Unfortunately, enterprise, chosen for this final qualifying paper, leads no activity in this sector and currently has no goods related to Cancer treatment.

As of 2018, 64% of exported by "Pharmhim" Ltd goods belonged to semi-finished products and goods, 71% of which is related to four main products:

- Levomenthol (CAS Registry Number 2216-51-5);
- Propenic acid / ethenocarboxylic acid (CAS Registry Number 79-10-7);
- 6-bromo-4-[(dimethylamino)methyl]-5-hydroxy-1-methyl-2-[(phenylthio)methyl]-, ethyl ester, monohydrochloride (CAS Registry Number 131707-23-8);
- Decamethoxine (CAS Registry Number 38146-42-8).

31% of exported goods in terms of money belong to export of raw materials, 48% of which belong to 5 products:

- Methanol (CAS Registry Number 67-56-1);
- Dimethyl ketone (CAS Registry Number 67-64-1);
- Sulfuric acid (CAS Registry Number 7664-93-9);
- 3,3-dibromo thymol phthalein sulfo sodium salt (CAS Registry Number 6131-90-4);
- 2-Propanol (CAS Registry Number 67-63-0) [32].

As a result of mentioned above the authors figured out that only 5% of goods and products sold are related to real medicine goods. The production of these goods takes only 5,3% of all produced substances in 2018. The situation of 2016 and 2017 were characterized with 4,6 and 4,8% respectively.

At the same time, both “Belmedpreparaty” and “Grindex” are characterized with 43 and 35% of goods sold related to finished products as of 2018. The situation in previous 3 years is very much resembling – these companies were exporting approximately 40% of goods considering finished products, 15% in raw materials, and almost a quarter in the field of semi-finished products (cross-markets are not included).

It is obvious, that finished products of “Pharmhim” Ltd are not in demand on external markets while semi-finished products and raw materials are in competitive positions and this, as it seems to the authors, is the key to success in targeted areas. That is why the enterprise should focus on raw materials and semi-finished goods which are already popular, when finished products should be the priority of the local market.

Conclusions to part 2

It is obvious, that there is a tendency of import decreasing on the pharmaceutical market – it can be explained by the fact, that local residents have lower paying ability, they are buying less and are looking for cheaper (but not always reliable) drugs that are, as a rule, produced by local enterprises.

Exporting activity on the pharmaceutical market was quite weak through the last years. In 2012 it was only one eleventh of the value of the export activity for that year. In 2018 there is a decrease of the amount of export in natural values – it is two times less comparing to 2012.

Local pharmacological market is saturated with goods and contains of approximately 600 companies of pharmacological and adjacent fields. Almost all world top pharmacy producers are represented in Ukraine, there are 6 world drug market leaders in top 10 companies of pharmacological industry in Ukraine. Ukrainians tend to buy more drugs according to doctors receipts but the percent of such drugs is 4 – 5 times lower comparing to the countries of central and northern Europe.

The most popular goods in Ukraine are pain killers. Very few goods, purchased in 2017 and 2018 were of the field, related to specific deceases.

“Pharmhim” Ltd has intermediate level of dependence on market conditions. It slightly depends on the suppliers but has certain level of dependence on companies entering the market and actions of buyers.

The company was developing its activity and increasing operations` effectiveness during 2014-2018. It results in increasing of income and profit of company`s primary activity. As the company failed to strengthen its positions on the field of finished products and has significant experience in exporting raw materials and semi-finished goods it would be wise to concentrate company`s activity in this sphere.

PART 3. WAYS OF INCREASING OF EXPORT POTENTIAL OF “PHARMHIM” LTD ON THE EXTERNAL MARKETS

3.1 Determination of the measures in order to increase competitiveness of “Pharmhim” Ltd on European and Asian markets

As the supply of particular goods produced by “Pharmhim” Ltd is limited on the domestic market, international market should become the field of prioritized company’s activity. External fields are practically non-limited in its amount, thus any company, being competitive enough, may enter the chosen markets and find certain positions there. According to the research of the final qualifying paper authors conclude, that in spite of significant spending on updating facilities, conducting researches in production technologies and monitoring the external markets “Pharmhim” Ltd has a stable economic growth what means the company is capable of allocating resources for innovations and changes.

By analyzing the information provided in the two previous paragraphs the authors offer measures, which should be implemented by “Pharmhim” Ltd in order to increase its competitiveness on targeted markets in Asia and Europe.

First of all, the enterprise should re-consider its sources of financial resources’ formulation. The company refuse to take bank loans and that sometimes leads to the inability to implement innovations which may significantly change company’s condition and its market influence. As an example, by possessing financial resources the process of standardization, certification can be accelerated [39, p. 261]. At the same time company may expand its activity in the spheres of drugs, which currently have high potential but is inaccessible because of the absence of appropriate equipment, personnel, warehouses etc. [29, p.179]. Debt costs may be used in order to purchase

technologies which are not present on the Ukrainian pharmacological market what may lead to the increase of company`s economic indicators.

An approach of strengthening company`s positions on the field of semi-finished products used in world drug production should be considered. In accordance with the researches, conducted by University of California, Irvine (academic unit – School of Medicine), semi-products, the need of which exists in 90,13% of all world`s pharmacological goods` production is divided into the following three groups:

- API (Active Pharmaceutical Ingredients). These are chemical compounds that are isolated from pharmaceutical raw materials or obtained by means of synthesis. They act as the active substance of the drug and usually constitute about 30% of its composition. Hydrochloric acid with very high purity (37%) can be used in chemical synthesis of active drug components (API). Another product that is widely used in the pharmaceutical industry is monochloroacetic acid (MCAA) [37, p. 358]. It is one of the most important semi-finished products in the chemical industry and is widely used in many organic synthesis processes [20, p.318]. It can be used to produce ibuprofen, caffeine, vitamins (B6), glycine and many more. Monochloroacetic acid chloride is a precursor of adrenaline (epinephrine).

- Excipients (drug carriers). Excipients are natural or synthetic chemical compounds that are devoid of pharmacological properties. They serve mainly as carriers of active substances, solubilizes or emulsifiers [24]. Usually, these are various types of solvents, capable of transferring the actual drug and not affecting its characteristics [5, p. 19]. They constitute about 50% of the composition.

- Drug forms (forms given to medicinal preparations). Plastics or polymers are typically used for their production. Drugs may take various forms: solid (e.g. powders, tablets, granules), liquid (e.g. solutions, suspensions, syrups) and semi-solid (e.g. ointments, gels, creams) [19, p.56].

As APIs significantly differ depending on the type of medicine and treatment they are used in, this option will be neglected in considering suitable course of the company`s products diversification. Both drug forms and excipients are the fields where it is equally easy to find a company which is in need of such goods – excipients are

present in almost 90% of total world's medicines [22, p. 276]. Particular drug forms are used in a little less than 98% of all products.

Excipients market is evaluated to be approximately 0,54% of the whole drug products what is equal to 3,1 billion euro [40]. The list of categories available for production are represented in Supplement D. Besides that, the goods are of absolutely different functions and thus a company has a rich variety of chances to find a suitable market niche to be represented in.

The fact about excipients, which should be kept in mind, is represented in Supplement E – even the most popular world excipients have reported cases of unacceptability by the human organism what leads us to the high costs needed for quality control and numerous tests and trials [3, p.74]. The number of such researches is incomparably higher comparing to the mentioned above various drug forms. This leads to particular restrictions in our activity flow, the company is unable to use maximum of its allocated resources.

The market of drug forms is even largest – it is assessed to be 0,98% of world's pharmacological scope (5,6 billion euro) [44]. The list of forms is very wide and consists of tablets, capsules, chewable tablets, powders, solutions, emulsions, suspensions, lotions, creams, ointments, effervescent granules, aerosols, gasses, suppositories, injections [4, p.208]. This leads us to two main conclusions:

- the company may find the field which is the most suitable;
- the costs for entering several fields are higher than acting on the market of already produced semi-finished goods.

One of the strongest advantages of production of drug forms in the current situation is the company's location. Costs per freight of raw materials (polymers, powders) would be lower because of the availability of such production enterprises within the same region.

Thus, the authors assume it is important to choose drug forms production as the needed measure for implementation. It certainly will be in need not only beyond the country's borders but within as well. Very few enterprises of Ukrainian origin are represented in this field, what provides "Pharmhim" Ltd a favorable position – prices

will be lower comparing to external counteragents because of absence of border clearance costs.

Despite being perspective, in Ukraine the common field of drug forms goods remains pierced by foreign companies. 37,02% of the market (as of 2018) is shared among 6 Ukrainian companies, 12,30% belong to approximately 60 companies of local origin. The rest (more than a half) is divided among central European and Asian enterprises. Core producers of drug forms in Europe are “Biothenos” (Romania), “Novo Nordisk A/S” (Denmark), “Laboratories Bouchara-Recordati” (France), “Jardan Galenski Laboratorij” (Chroatia), etc. “Dr. Reddy`s Laboratories” (India), “STADA Arzneimittel AG” (Germany) are the core suppliers for companies in Asia. “Takeda Pharmaceutcals LLC” (Japan) is the company which is strongly represented in all regions across the world.

Croatian enterprise is the only one among listed above companies, which is not represented in Ukraine. All the other are the main suppliers of drug forms for medicine producers on our local market. The prices for their production is 11,3% higher on average than the one of local firms, but are of significantly better quality. Terms and periods of usage are broader. Materials are less harmful to the human organs and production is easier in its treatment. That is why choosing such way of development with a high chance will grant gaining the leading positions on the local market.

When choosing the prioritized drug forms, entering the market of which should be a priority, it must be considered the goods that are among the most popular depending on the form. Almost 35,14% of all medicine, offered on the shelves of world`s pharmacies are capsules, tablets and powders [46, p. 613]. Extra 9,23% is obtained by ointments and creams. Furthermore, these are the goods, to start production of which in this field is among the cheapest. Suppositories and injections are thought to be approximately 6,3 times more expensive considering only quality tests and purchase (leasing) of equipment. Numerous Russian Federation`s based enterprises are leading their exporting activity on the markets Kazakhstan, Mongolia, Uzbekistan and China. European based enterprises have significant influence in Central and Northern Europe.

That is why, it is important to choose countries of Eastern and South Europe as the ones towards which to lead the activity. Such countries as Romania, Bulgaria, Turkey, Albania, Bosnia and Herzegovina, North Macedonia and Slovenia are countries with high perspectives of the development of pharmacological market. Greece is the country with a wavy growing rates over the last 12 years so, entering this market should be considered deeply. As the company is limited in its resources, it is advised to start enterprise`s export activity in 2 – 3 of above listed countries in European region. The authors recommend to start with geographically closest countries in order to minimize good`s transport costs.

As the company is willing to act in Asia as well, it is important to check which countries has developed pharmacology production and may be in need of semi-finished products. Till the beginning of 2015 the biggest consumer of raw materials and semi-finished goods in this region was China. But due to the economic changes, achieved by the country`s economy (strong influence of increasing wages) pharmacological companies tend to transfer their production facilities to the nearby countries. As an example, all top 10 world companies currently have their production companies in India. Besides that, India is the country with one of the highest grow rates in the whole industry. Even though Pakistan, Iran and Afghanistan are the promising countries having the potential on the world pharmacological market [42], they should be considered as supplementary options to activity, lead in India.

As the European countries are only starting their expansion towards pharmacological market of India and while most of them are still considering the idea of transmitting the production facilities from China, 2019 and 2020 seem to be the ideal years of overseas development of small and medium sized enterprises. By gaining reliable long-term partnership the enterprise may ensure stable profit with the opportunities to lead further development activity.

As an example, the authors would like to calculate the costs for supplying of the goods towards targeted market of India. As the authors have defined semi-finished products to be the prioritized sphere of development, it is important to start with the production of capsules or pills.

The export contract for 1 million “12el” capsules will be researched. Cost of 1 capsule with “human body friendly” layer [38] is assessed to be 4,5 US cents. The purchase of such goods is usually conducted in amount of 1 to 4 million capsules. Such goods have to pass several stages of quality control, what causes additional expenses for both producer, and buyer of the goods.

The list of steps and actions which are required during fulfillment the agreement on Indian market is represented in table 3.1.

Table 3.1

List of measures to fulfil an agreement towards Indian market

Steps	Measure	Cost in UAH	Cost in USD	Comments
1	Agreement signing			
2	Quality control procedure conducted in Ukraine	32913,05	1308,15	plastics
3	Defining the rate agreements with carrier companies			
4	Signing a rate agreement contract			
5	Handling costs and pre-carriage in the country of origin	4025,6	160	
6	Payment of custom clearance costs	147601,14	5866,5	in 2 of 28 states VAT is not charged
		6076,14	241,5	
	Transportation costs (5531 kilometers, 1,4 loading meters, 3000kg net, 3800 kg gross)	96615,41	3840,04	“Schneider”, 1,39 US \$ per kilometer
		106301	4225	“DHL”, per weight and area
		97369,2	3870	“Schenker”, per 1,4 loading meters and distance (5531km)
	Fuel surcharge			-1,7%
7	Insurance costs	27676	1100	1% of goods cost + 700 US dollars
	Handling costs and on-carriage in the country of destination	3521	140	
	Quality assessment of delivered goods	1132,2	45	to avoid misunderstanding checked if suits the contract mentioned quality
	Total expenses	313484,4	12459,69	-

Source: calculated and composed by the author

The production costs of 2 million “12el” capsules is 21890 US dollars. As a result of stated above it is important to choose “Schneider” carrier company for conduction of freight operations. Besides that, this is the only company which has summer fuel discounts and discounts per scope of transportations. As it is hard to forecast the exact state in India to conduct the shipment to, the authors have decided to consider each 14th delivery to be done to the state in which VAT is not calculated. The company can make 19 such shipments per year what means that in the pessimistic option there will be one tax free.

Taking this into account the enterprise should count on 612427,92 US dollars of expenses on freight and production process. At the same time company may make 810000 US dollars of income from these operations. This means that the value of company`s export effectiveness will be 1,31 what is higher than the current company`s export effectiveness level (1,274 as of 2018). The enterprise may count on the demand equal to 18 million capsules in the first year only from Indian market. The experience of the enterprise shows, that there should be a growth of demand in the observable future (Figure 3.1).

The other measures, which would be suitable for the company`s activity is the optimization of the distribution network of the company. The enterprise does not have any international affiliates which would help to lead activity across borders.

Creation of such firms will allow the company to promote itself beyond domestic market. As the company mainly deals with spot contracts, there is little information spreading among foreign companies. In such situation several affiliates leading an activity in particular region (Asia, Europe, North Africa) helps to collect data about the market in order that decisions made by the board of directors are more precise. It will also let to implement several marketing strategies depending on the region, targeted companies etc.

While Asia is the preferable region to lead company`s activity in, it is recommended to open foreign based enterprise in India. As the main part of production enterprises are located in the North and West part of the country, it is important to locate the company`s office relatively close to these regions. In that case it is easier to

conduct meetings in person and not via telecommunication's applications. Such approach allows to adjust to the conditions during the negotiation process [8, p. 49]. It would also be easier to conduct meetings on the plants and factories for exchanging experience and technologies in production process.

Agra, Jaipur and Ludhiana are the cities which are relatively close to the capital of the country where most pharmacological enterprises` and corporations` head offices are located. On the other side Rajkot, Surat, Pune and Nashik are located near major port cities with developed transport infrastructure.

To our opinion, the company should choose Ludhiana while it locates between the capital of India and the capital of Pakistan and Afghanistan which are to be considered as further countries markets to enter.

Basing on the information collected by the affiliate it will be easier to formulate rate tables for the company. This will help the company to evade one of the main problems faced by the company in previous years – spot prices where the required profit level was hardly taken into account. Such affiliate will also simplify the process of signing agreements with carrier companies which cover routes between Ukraine and Asia.

3.2 Forecast assessment of the offered measures effectiveness

While the company is considered to be developing on the market of semi-finished products and raw materials, it is important to assess the possibilities and consequences of measures implementation.

To the authors opinion, “Pharmhim” Ltd should develop its export activity in the market of semi-finished products, particularly drug forms. Such drug forms as powders, capsules, tablets, ointments and creams are the one, the costs for equipment for production of which is one of the lowest. It is at least 2,5 cheaper than the same actions taken on the field of aerosols and gases.

First of all, core equipment which should be bought and settled on the territory of enterprise must be defined. By analyzing the market and general production

technologies we figured out that the following machines are the minimum, required in production of capsules and tablets:

- Blister machine for tablets and capsules MN – 80, 2 pieces;
- Dosing and packing of powders machine SP – 12, 1 piece;
- Extruder CJM 5J, 1 piece;
- Pills press SC – 24, 2 pieces;
- Vibrating sieve VS – 06, 1 piece;
- Table based automatic tablet and capsule counter YL – 04, 1 piece;
- Automatic machine for logo laying in pills YS – 01, 1 piece;
- Dosing and packing machine FR – 70, 2 pieces;
- Powder conveyor screw SF – 10, 1 piece;
- Powder mixer VF – 50, 3 pieces;
- Automatic gel capsule polisher HS – 10, 1 piece;
- Conveyor belt S – 400 9m; 7 piece;
- Drying tank for lyophilization 500 kg, 1 piece.

Following goods (or their analogs) with required level of reliability and suitable after-sales service were found in Ukraine, Belorussia and Russian Federation. The prices for delivery of these goods to Ukraine are significantly higher for the enterprise based in Russian Federation while the price level is the same as in Belorussia. But not all needed goods are represented in Ukraine`s Northern neighbor, thus the authors looked for conveyor belts and powder conveyor screw within borders of Ukraine. As a result, “Strum” Ltd, “Visma-Planar” and “Martinex” provided such price lists:

- Blister machine for tablets and capsules MN – 80, 2 pieces – 26000 US dollars;
- Dosing and packing of powders machine SP – 12, 1 piece – 10800 US dollars;
- Extruder CJM 5J, 1 piece – 30240 US dollars;
- Pills press SC – 24, 2 pieces – 12500 US dollars;
- Vibrating sieve VS – 06, 1 piece – 7450 US dollars;
- Table based automatic tablet and capsule counter YL – 04, 1 piece – 12900 US dollars;

- Automatic machine for logo laying in pills YS – 01, 1 piece – 18300 US dollars;
- Dosing and packing machine FR – 70, 2 pieces – 21800 US dollars;
- Powder conveyor screw SF – 10, 1 piece – 6950 US dollars;
- Powder mixer VF – 50, 3 pieces – 24500 US dollars;
- Automatic gel capsule polisher HS – 10, 1 piece – 9000 US dollars;
- Conveyor belt S – 400 9m; 7 piece – 13600 US dollars;
- Drying tank for lyophilization 500 kg, 1 piece – 23700 US dollars.

As a result, the cost of equipment for production of pills and capsules - 217740 US dollars. Only the machines of core importance are represented in this list. The production will be partly done by operators and carriers.

Beside equipment the company is in need of production premises. The strong point here is that company does not have to search for the territory to build on, it possesses a field of six hundred square meters with the groundwork ready for building. This decreases the costs of this place for at least 34%.

The required territory of the building is assessed to be 430 square meters. As square buildings are the best for equipment placement because of maximum place in the minimum size, it would be recommended to choose the length of the rooms to be 21,5 meters, width 20 meters and height 4,5 meters to provide rapid air circulation.

There is a variety of types and technologies of building assembling. The authors have chosen one of the fastest and cost saving methods. Several local companies offer services on creating warehouses and buildings made of metal. Taking into account particular requirements to the content of the walls, materials used for decoration and heat isolation the price will approximately be 4600 hryvnias per square meter. By multiplying it on the size of our shed the sum of 1978000 hryvnias, what approximately is 78600 dollars as of October 2019, will be received.

The last thing the company will need for opening of this production capacities are the human resources. While most of the enterprise facilities work in two-shift regime, such strategy will be used for this production facility as well.

The list of required workers is the following:

- Foreman, 1 person;
- Engineer – technologist, 1 person;
- Master, 2 persons;
- Handyman, 18 persons;
- Laboratory assistant, 2 persons;
- Electrician, 1 person;
- Cleaner, 3 persons.

While this enterprise is located in a comparably small town in Sumy region, the expected salaries are of the following level:

- Foreman – 12800 hryvnias;
- Engineer – technologist – 9900 hryvnias;
- Master – 8300 hryvnias;
- Handyman 6400 hryvnias;
- Laboratory assistant 7100 hryvnias;
- Electrician 6500 hryvnias;
- Cleaner 5400 hryvnias.

Taking into account quantity of required workers, the sum of 256800 hryvnias per month appears as a result. To make the calculation easier all values will be converted into one currency – US dollars.

As a result, calculations showed 217740 dollars of costs on equipment, 78600 dollars per building and 7623 dollars per month as salary. This sum generally can be represented in a following way: $296340 + 7623 \$ * \text{month quantity}$.

Assembly of the building will take 40 days; purchase, delivery and installation of equipment needs extra 20 days what means our drug forms production department may start in two months. During this time implementation of new production technologies, quality tests may be held on the basis of the other warehouses what will allow to start the activity on the first day. It might take up to two months to find counter agents in targeted countries (India, Pakistan). During this period the company's economic department is obliged to formulate rate tables for the company's activity. As the price

level for raw materials in Ukraine is comparably high, it would be wise to purchase it in China. After all additional payments it will cost approximately 1,4% cheaper than the same bought on local market.

Taking into account company's financial situation, authors assume that this project can be 70% covered by own financial resources. To make it clear in calculation lets accept such sums: 210 thousand dollars of investment will be covered by company's own resources. 86349 dollars will be taken as a bank loan for a period of 4 years.

The major Ukrainian banks represent following terms for commercial credits.

Table 3.2

Ukrainian bank credits` repayment system

Bank	Nominal interest rate, %	Real interest rate, %	Overpayment amount, US \$	Monthly repayment, US \$	
				minimal	Maximal
Credit Agricole	5,5	5,99	10925,54	1869,66	2265,12
Kredobank	5,5	8,36	15437,21	1959,00	2354,46
Ukrgasbank	8,6	9,09	16580,02	1874,41	2492,75
Ukreximbank	8,7	11,05	20157,34	1963,90	2589,43

Source: calculated and composed by the author

Each bank charges one-time commission of 1,00 or 1,25%. Beside that there is a down payment – which varies from 25 to 30 percent. Obviously, the most attractive terms has Credit Agricole, thus it will be recommended to turn to this bank.

Taking into account prices for mentioned above semi-finished products, the average income for one million of pills forms is expected to be about 5325,15 US dollars.

Taking into account two shifts system and amount of equipment it would be realistic to count on 2 million pills per month.

While starting of new production process is a complicated and costly process, the company should not expect to return its money in a several years. As a rule, massive investments in pharmacological field have the payback period of 5 – 8 years with low level of profitability over the first 3 years.

So to calculate the project's payback the dynamic method will be used. It will allow us to assess payback of our project by taking into account value of money in time.

At first authors will assume that discount coefficient is on the level of 9%. Income amount has been calculated for the years which can be forecasted. Now there is a need to calculate discounted income.

$$1^{\text{st}} \text{ year: } \frac{-3500}{(1+0,09)^1} = -3211,01 \text{ US dollars;}$$

$$2^{\text{nd}} \text{ year: } \frac{14000}{(1+0,09)^2} = 11764,71 \text{ US dollars;}$$

$$3^{\text{rd}} \text{ year: } \frac{140000}{(1+0,09)^3} = 108527,13 \text{ US dollars;}$$

$$4^{\text{th}} \text{ year: } \frac{160000}{(1+0,09)^4} = 114285,72 \text{ US dollars.}$$

By continuing the calculations, our investment will return somewhere between five and six years. To figure out the precise time the authors will do following: first of all, to figure out the sum covered during this period it is needed to sum up 6 years: 287023,83 US dollars. To find the uncovered part, this sum will be taken away from the total sum of investment: $307274,54 - 231366,54 = 75908$ US dollars.

Now this sum will be divided on the discounted amount per fifth year:

$$\frac{75908}{130284,9} = 0,5826$$

By multiplying this amount on 12 the exact month will be found:

$$0,5826 * 12 = 6,9915$$

So, according to the calculations, results of our project will cover it in 4 years and 8 months. Finally, there is a need to add two months to this period. This is the time needed for building of warehouse and for providing equipment delivery. Thus 4 years and 10 months is the period of project payback what is an acceptable level for our enterprise.

The production costs of 2 million "12el" capsules is 21890 US dollars. As a result of stated above it is important to choose "Schneider" carrier company for conduction of freight operations. Besides that, this is the only company which has summer fuel discounts and discounts per scope of transportations. As it is hard to forecast the exact

state in India to conduct the shipment to, the authors have decided to consider each 14th delivery to be done to the state in which VAT is not calculated. The company can make 19 such shipments per year what means that in the pessimistic option there will be one tax free.

Taking this into account the enterprise should count on 612427,92 US dollars of expenses on freight and production process. At the same time company may make 810000 US dollars of income from these operations. This means that the value of company`s export effectiveness will be 1,31 what is higher than the current company`s export effectiveness level (1,274 as of 2018).

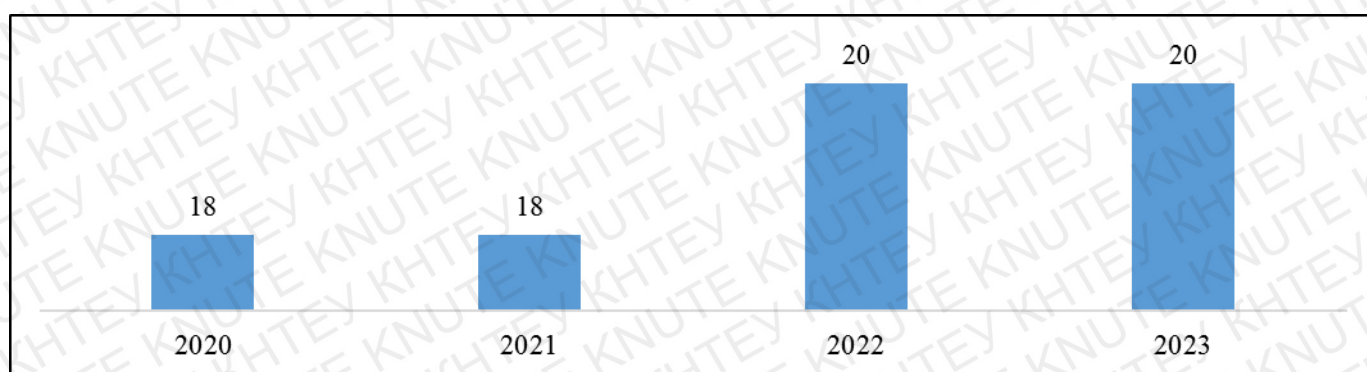


Figure 3.1 Forecasted amount of production of “Pharmhim” Ltd in 2020-2023, million capsules

The enterprise may count on the demand equal to 18 million capsules in the first year only from Indian market. The experience of the enterprise shows, that there should be a growth of demand in the observable future (Figure 3.1).

According to the feedback provided by employees of “Pharmhim” Ltd, each year of production experience and adjustment of technological process allows to lower costs on the value differing from 0,6 to 2,7% comparing to the level of the previous year. It means that the company is able to reduce production costs what will result into higher profitability of the project. To figure out the level of forecasted competitiveness of the enterprise`s activity it would be wise to take into account both optimistic and pessimistic values of the adjustment of production process. The real value never remains on the absolutely positive or absolutely negative level. Thus the calculated amounts will indicate the range of the forecasted costs.

Table 3.3

Forecasted effect of adjustment of production process

Year	Production of “12el” capsules` costs, values in US dollars					
	Current level of production costs	Forecasted income of operations	Pessimistic level (-0,6%)	Difference comparing to current level (-)	Optimistic level (-2,7%)	Difference comparing to current level (-)
2020	394020	810000	394020	-	394020	-
2021	394020	810000	391655,88	2364,12	383381,46	10638,54
2022	437800	900000	429966,79	7833,21	414477,96	23322,04
2023	437800	900000	427386,99	10413,01	403287,05	34512,95
Total	1663640	3420000	1643029,66	20610,34	1595166,47	68473,53

Source: calculated by the author

Taking into account amount of costs per transportation, the forecasted export effectiveness on Indian market will be the following:

Table 3.4

Forecasted effectiveness of company`s export activity

Forecast type	Year			
	2020	2021	2022	2023
Pessimistic	1,310	1,315	1,325	1,330
Optimistic	1,310	1,322	1,356	1,379

Source: calculated and composed by the author

As a result, as tempos of decreasing of costs are not sustainable, the forecasted export efficiency will be between 1,33 and 1,379 in 2023 what is from 4,39 to 8,24 percent higher comparing to the level of 2018.

For more precise evaluation, it would be wise to calculate cost price of goods, net sales revenue and net financial result of the operations conducted on Indian drug market. While these actions need particular time for implementation, the forecasted period will be 2020 – 2023.

The cost price of goods consists of salary and two related to it taxes (income tax and military tax), costs of production, amortization and costs of fund of risk assurance. To make the situation more visual the authors calculated the amount per calendar year, assuming that the production lines will work at the pace equal to the forecasted amount of production.

Table 3.5

Forecasted amount of cost price of goods for 2020 – 2023, US dollars

Year	Costs of production	Salary costs	Taxes related to salary	Amortization	Costs of risks assurance	Total amount
2020	394020	91476	21496,86	98681,22	72900	678574,08
2021	394020	96049	22571,52	79024	72900	664564,52
2022	437800	100852,29	23700,29	59268	-	621620,58
2023	437800	105894,91	24885,31	39512	-	608092,22

Source: calculated and composed by the author

Using the information above it is possible to evaluate the amount of forecasted net sales revenue.

The company uses cumulative method of amortization calculation. For this project the period of amortization is defined to be 5 years what means that cumulative coefficient will be 5/15 for the first year, 4/15 for the second etc. In addition to this, the fund of risks assurance charges 9 percent of all operations during first two years.

Table 3.6

Forecasted net sales revenue for 2020 – 2023, US dollars

Year	Net income of operations	VAT-free amount	Cost price of goods	Net sales revenue
2020	810000	675000	678574,08	-3574,08
2021	810000	675000	664564,52	+10435,48
2022	900000	750000	621620,58	+128379,42
2023	900000	750000	608092,22	+141907,78

Source: calculated and composed by the author

As a result, the company should expect the following values of net sales revenue in the described period. By taking away the corporate income tax the authors obtained the amount of net financial result for the forecasted period.

According to the provided above information, the authors have forecasted the financial result of the enterprise till 2023. Current tendency of the company's activity in alliance with the results of offered actions will increase the gross profit on 31,91%. At the same time, costs of production will increase only on 14,26% during the described period.

Table 3.7

Forecast of the financial results of “Pharmhim” Ltd for 2019-2023

Indicator	Fact, thousand UAH	Forecast taking into account promotional activities, ths. UAH				
	2018	2019	2020	2021	2022	2023
Net revenue	161207	161586	175584	175848	187163	189834
Cost of production	130478	130667	142387	142496	148400	149299
Gross profit	30729	30919	33197	33352	38763	40535
Other operating income	6647	5318	4922	5110	5274	5227
Administrative expenses	7927	8142	8568	8606	8803	8841
Selling expenses	1146	1318	1833	1857	1964	2007
Net financial result	20640	20819	22295	22369	25939	27042

Source: calculated and composed by the author

As a result, the relation of net financial result to net revenue will increase from 0,128 to 0,142. It means, that the offered actions should have significant positive effect on the company`s activity.

Conclusions to part 3

Being limited in its financial resources, the enterprise should be precise in choosing among the further options of development. The authors recommend to continue company`s growing in the field of semi-finished pharmacological products, while the company has enough experience in this field both on domestic, and external markets.

According to the research conducted by the authors, Asian region seems to be the most perspective in the following 10 years. The major pharmacological companies have not yet reoriented their production towards the market of India and thus, there is an attractive opportunity to form sustainable long-term partnership relations in this country.

The authors conducted a forecasting assessment of the offered actions on creating the production of “12el” capsules. To reduce the burden of the one moment cost spending, it was decided to turn to the bank credit. The authors calculated the costs of such production and assessed the potential supply for the mentioned above goods.

According to the provided feedback from the “Pharmhim” employees, the forecasted effect of adjustment of production process over the following four years was calculated.

The implemented measures allow to increase company`s export efficiency with the value within 4,39 to 8,24 percent higher comparing to the level of 2018.

Based on the obtained results, the authors calculated the forecast of net sales revenue and net financial result. The value of relation of net financial result to net revenue appeared to be 10,94 percent higher comparing to the value of 2018.

CONCLUSIONS

The world pharmacological market is one of the most attractive industries for developing company`s activity. Despite huge number of consumers and diversified goods structure, it is very difficult to enter this industry for a small or medium-seized enterprise.

This market is characterized by high costs which should be attracted in equipment, research and development, personnel education. For example, in production of steel the equipment remains on the average level of available technologies during 10 – 12 years, while in pharmacology this period is 2 – 2,5 times lower. The enterprise is obliged to update every single machine, quality control system, transport.

The spending on research and development on pharmaceutical market is one of the highest among all production industries – approximately 16% of revenue, while market leaders are characterized by even higher values – up to 25%. As an example, the average level of revenue spent on R&D for production industries is only 1,3%; the aerospace industry, which is thought to be one of the most cost demanding, spends only 4,5% of revenue on developing of available technologies. That is why the company, which is entering new foreign markets, requires significant financial background to be

able to endure pressure of the existing competitors. By taking into account above mentioned, it is necessary to conclude that every decision, taken by the managerial personnel, has to be considered precisely and from absolutely all points of view.

This is why, most of Ukrainian pharmacological companies failed to overcome this stage successfully. Because of the lack of experience companies either take rash decisions, or they take no actions being afraid to lose money and time. The situation of the market correlates with the stated above – local market imported in 9 times more goods than it has exported over the last five years.

World leading companies are more active in taking decisions, they succeeded to penetrate the Ukrainian market and to enhance their positions. Thus, developing of domestic producers of pharmacological goods is not only caused by the will to increase companies` competitiveness, but also by the need to protect the local market.

“Pharmhim” Ltd was chosen as the enterprise, on the basis of which the authors assessed the abilities of local producers to develop its activity and to expand its activity on the international market of pharmacological goods.

First of all, the authors researched the international pharmacological market, defined its` tendencies and characteristics of development. On the one hand, consumers from developed countries are buying receipt goods more active, while the list of goods which are available without doctor`s prescription is significantly limited. On the other hand, developing countries` citizens tend to buy less than 20 % of goods according to receipts. There are goods, which are required on both markets; this is the area, where the authors consider the available opportunities for “Pharmhim” Ltd development.

“Pharmhim” Ltd, in spite of significant spending on update of technological process and renovation of equipment, has required underlying strength to lead cross-border activity. It was concluded, that Ukrainians tend to believe in the advertisement taking no notice on recommendations of world acknowledged scientists and institutions. As an example, the effectiveness of 9 among 12 most popular drugs on local market has no proof.

While “Pharmhim” Ltd is not highly dependent on the conditions of the market, the enterprise can lead its activity caring less about the actions of its competitors.

As the enterprise has significant experience on the market of semi-finished products and drugs, the authors have chosen this direction as the most prioritized in the observable future.

According to the research, it was concluded, that there are three core groups of semi-finished products: active Pharmaceutical Ingredients; drug forms; excipients.

All three groups are characterized with different amounts of required resources for starting the production process. Drug forms appeared to be the group with the best relation of income to costs in terms of costs limitation.

The authors have calculated the required costs for starting capsules production. According to the forecasted data, this project will pay back itself in a less than 5 years with the level of profitability and export effectiveness higher than the current company's average.

As the drug market of India is the one of those, that will define the future of the whole world industry, it was offered to concentrate company's export activity on exactly this region.

Finally, the authors came to a conclusion, that by taking into account previous experience, considering each possible decision, "Pharmhim" Ltd may strengthen its competitive position not only on the market of semi-finished products, but on the market of final goods as well.

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SUPPLEMENTS

Supplement A

Aggregated balance sheet of «Pharmhim» Ltd

Assets	Code	On the 31.12.2014	On the 31.12.2015	On the 31.12.2016	On the 31.12.2017	On the 31.12.2018
1	2	3	4	5	6	7
I. Fixed assets						

Intangible assets:	1000	144	133	133	262	280
initial value	1001	185	172	167	345	259
accumulated depreciation	1002	41	48	34	83	79
Incomplete capital investments	1005	5812	5679	7129	6957	7410
Fixed assets:	1010	36030	39516	42131	48347	48533
initial value	1011	61428	59144	65432	77865	81227
depreciation	1012	25398	20195	23321	29518	32694
Investment Property	1015	-	-	-	-	-
Long-term biological assets	1020	-	-	-	-	-
Long-term financial investments: that records under the equity method other enterprises	1030	165	179	179	179	179
other financial investments	1035	-	-	-	-	-
Long-term receivables	1040	-	-	-	-	-
Deferred tax assets	1045	-	-	-	-	-
Other fixed assets	1090	-	-	-	-	-
Total for Section I	1095	42181	43507	49572	55745	56402
II. Current assets						
Inventories	1100	34891	31506	37398	61611	66478
Current biological assets	1110	-	-	-	-	-
Accounts receivable for products, goods, works, services	1125	16801	17002	17970	19017	22646
Receivable accounts for advances paid	1130	-	-	-	-	-
with a budget	1135	5756	4976	5139	12135	10293
including income tax	1136	-	-	-	-	-
Other current receivables	1155	1785	928	355	4195	3427
Current financial investments	1160	-	-	-	-	-
Money and cash equivalents	1165	6831	7105	9227	6145	8346
Prepaid expenses	1170	308	295	318	396	411
Other current assets	1190	4469	3971	4403	8070	7802
Total for Section II	1195	70841	65783	74810	111569	119403
III. Non-current assets held for sale and disposal groups	1200	33	33	33	33	33
Balance	1300	113055	111323	124415	167347	175838

Liability	Code	On the 31.12.2014	On the 31.12.2015	On the 31.12.2016	On the 31.12.2017	On the 31.12.2018
1	2	3	4	5	6	7
I. Equity						
The registered capital	1400	1508	1508	1626	1626	1643
Capital in revaluation	1405	-	-	-	-	-
Additional capital	1410	-	-	-	-	-
Reserve capital	1415	-	-	-	-	-
Retained earnings (uncovered loss)	1420	39604	40505	41751	60965	63690
Unpaid capital	1425	(-)	(-)	(-)	(-)	(-)
Withdrawn capital	1430	(-)	(-)	(-)	(-)	(-)
Total for Section I	1495	41202	42013	43377	62591	65333
II. Long-term liabilities and ensuring						
Deferred tax liabilities	1500	-	-	-	-	-
Long-term bank credits	1510	-	-	-	22987	-
Other long-term liabilities	1515	-	-	-	-	-
Long-term ensuring	1520	-	-	-	-	-
Targeted financing	1525	-	-	-	-	-
Total for Section II	1595	-	-	-	22987	-
III. Current liabilities and ensuring						
Short-term bank credits	1600	-	-	6798	-	-
for the long term obligations	1610	-	-	-	-	-
for goods and services	1615	45217	44243	44264	49613	71261
for payments to budget	1620	360	540	121	112	138
including income tax	1621	-	-	-	70	-
for insurance payments	1625	13	37	2	41	32
for payments of wages	1630	596	809	474	714	783
Current ensuring	1660	-	-	-	-	-
Deferred income	1665	-	-	-	-	-
Other current liabilities	1690	26117	23681	29379	31289	38291
Total for Section III	1695	72300	69310	81038	81769	110505

IV. Liabilities related to non-current assets held for sale and disposal groups	1700	-	-	-	-	-
Balance	1900	113055	111323	124415	167347	175838

Supplement B

Income statement of “Pharmhim” Ltd

Item	Code	2014	2015	2016	2017	2018
1	2	3	4	5	6	7
Net income (revenue) from sales of products (goods and services)	2000	96914	96372	118852	152286	161207
Cost of sales of products (goods and services)	2050	(70921)	(69514)	(82513)	(124505)	(130478)
Gross:						

profit	2090	25993	26858	36339	27781	30729
loss	2095	(-)	(-)	(-)	(-)	(-)
Other operating income	2120	1855	2106	1919	9301	6647
Administrative expenses	2130	(4819)	(3078)	(4711)	(7725)	(7927)
Selling expenses	2150	(492)	(554)	(478)	(970)	(1146)
Other operating expenses	2180	(3716)	(2965)	(5738)	(3477)	(3618)
Financial results of operations:						
profit	2190	21748	22367	27331	24910	26843
loss	2195	(-)	(-)	(-)	(-)	(-)
Income from equity	2200	-	-	-	-	-
Other financial income	2220	-	-	-	-	-
Other income	2240	-	-	-	119	-
Financial expenses	2250	(265)	(208)	(320)	(712)	(691)
Losses from equity	2255	(-)	(-)	(-)	(-)	(-)
Other expenses	2270	(353)	(319)	(474)	(1030)	(806)
Financial results before tax:						
profit	2290	22407	21922	26537	23287	25130
loss	2295	(-)	(-)	(-)	(-)	(-)
Expenses (income) income tax	2300	3943	3946	4758	4073	4490
Profit (loss) from discontinued operations after tax	2305	-	-	-	-	-
Net financial result:						
profit	2350	18464	17976	21779	19214	20640
loss	2355	(-)	(-)	(-)	(-)	(-)

Supplement C**The most popular medicines in Ukraine as of 2017**

Entitlement	Price*	Amount in one package (UAH)	When used
Actovegin	343,10	5 ampules	blood circulation
Nurofen	55,09	12 pills	painkiller
Nimesil	290,10	4 doses	painkiller
No-spa	67,87	24 pills	painkiller
Essentiale	251,58	30 capsules	liver
Reosorbilact	98,80	1 bottle (200 ml)	saline

Sinupret	175,44	50 pills	running nose
Spazmalgon	147,85	50 pills	painkiller
Natrium Chloride	11,69	1 bottle (200 ml, 9 ml of active ingredient)	saline
Citramon	6,50	6 pills	painkiller
Tivortin	96,24	1 bottle (100 ml, 42 ml of active ingredient)	saline
Cardiomagnyl	49,91	30 pills	hearth thrombus
*These goods are represented on the market in different packages. The cheapest available were chosen for this table.			

Supplement D

Most commonly used groups of excipients

Excipient	Function	Examples
Diluents	Provide bulk and enable accurate dosing of potent ingredients	Sugar compounds e.g. lactose, dextrin, glucose, sucrose, sorbitol Inorganic compounds e.g. silicates, calcium and magnesium salts, sodium or potassium chloride
Binders, compression aids, granulating agents	Bind the tablet ingredients together giving form and mechanical strength	Mainly natural or synthetic polymers e.g. starches, sugars, sugar alcohols and cellulose derivatives
Disintegrants	Aid dispersion of the tablet in the gastrointestinal tract,	Compounds which swell or dissolve in water e.g. starch, cellulose derivatives and

	releasing the active ingredient and increasing the surface area for dissolution	alginates, croscopvidone
Glidants	Improve the flow of powders during tablet manufacturing by reducing friction and adhesion between particles.	Colloidal anhydrous silicon and other silica compounds
Lubricants	Similar action to glidants, however, they may slow disintegration and dissolution. The properties of glidants and lubricants differ, although some compounds, such as starch and talc, have both actions.	Stearic acid and its salts (magnesium stearate)
Tablet coatings and films	Protect tablet from the environment (air, light and moisture), increase the mechanical strength, mask taste and smell, aid swallowing, assist in product identification. Can be used to modify release of the active ingredient.	Sugar (sucrose) has now been replaced by film coating using natural or synthetic polymers. Polymers that are insoluble in acid, e.g. cellulose acetate phthalate, are used for enteric coatings to delay release of the active ingredient.
Colouring agents	Improve acceptability to patients, aid identification and prevent counterfeiting. Increase stability of light-sensitive drugs.	Mainly synthetic dyes and natural colours. Compounds that are themselves natural pigments of food may also be used.

Supplement E

The world's most used excipients

Excipient	Function	Caution in practice
Tartrazine	Colouring agent	Reported cases of hypersensitivity, and hyperkinetic activity in children
Aspartame	Sweetener	Caution in patients with phenylketonuria
Benzalkonium chloride	Preservative	Bronchoconstriction (nebuliser solutions) and ocular toxicity (soft contact lens solutions)
Sodium metabisulphite	Antioxidant	Hypersensitivity, including bronchospasm and anaphylaxis, are reported for all sulphites
Propyl gallate	Antioxidant	Contact sensitivity and skin reactions
Lactose	Tablet filler	Caution in patients with galactosaemia, glucose-galactose malabsorption syndrome, or lactase

		deficiency
Sesame oil	Oil (injections)	Hypersensitivity reactions reported
Lanolin	Emulsifier (topical products)	Skin hypersensitivity reactions, caution in patients with known sensitivity

АНОТАЦІЯ

Новоженов Володимир Олегович

Експортний потенціал підприємства фармацевтичної промисловості

Випускна кваліфікаційна робота на здобуття ступеня магістра за спеціальністю 051 «Економіка», спеціалізацією «Міжнародна економіка». Київський національний торговельно-економічний університет, 2019.

У випускній кваліфікаційній роботі проаналізовано міжнародний ринок фармацевтичної продукції; проведено оцінку фінансової та господарської

діяльності ТОВ «Фармхім», досліджено зовнішнє середовище діяльності підприємства та оцінено рівень його експортного потенціалу. Запропоновано заходи щодо підвищення конкурентоспроможності ТОВ «Фармхім» на ринках країн Європи та Азії, розраховано прогнозну оцінку ефективності запропонованих заходів на середньострокову перспективу.

Ключові слова: міжнародна конкурентоспроможність, експорт, експортний потенціал, ринок фармацевтичної продукції.

ANNOTATION

Novozhenov Volodymyr

Export Potential of Pharmaceutical Industry Enterprise

Final qualifying paper for the degree of Master of speciality 051 “Economy”, specialization "International economics." Kyiv National University of Trade and Economics, 2019.

In the final qualifying paper the international pharmacological market is analyzed; the assessment of financial and economic activity of the “Pharmhim” Ltd is conducted, the company`s external environment is conducted and its export potential level is assessed. The measures for increasing of the competitiveness of "Pharmhim" Ltd on the European and Asian markets are proposed, the forecast evaluation of the effectiveness of the proposed measures in the medium term is calculated.

Keywords: international competitiveness, export, export potential, pharmacological market.

Kyiv National University of Trade and Economics
The Department of World Economy

**SUMMARY
TO THE FINAL QUALIFYING PAPER (PROJECT)**

on the topic:

**«EXPORT POTENTIAL OF PHARMACEUTICAL INDUSTRY ENTERPRISE»
(based on data of “Pharmhim” Ltd, Shostka, Sumy region)**

Student of the 2nd year, group 2a,
speciality 051 “Economy”
specialization “International
economics”

Novozhenov Volodymyr

Scientific adviser
Candidate of Sciences (Economics),
Associate Professor

Pugachevska Kateryna

Kyiv, 2019

Final qualifying paper consists of introduction, three parts, conclusions, references, supplements. Materials of research are represented on 59 pages, in 18 tables, 7 figures and 5 supplements. List of references consists of 47 sources.

Object of the research is the process of providing export potential of pharmaceutical industry enterprise.

Subject of the research is the theoretical and practical aspects of providing export potential of pharmaceutical industry enterprise.

The purpose of the work is to propose ways of increasing export potential of pharmaceutical industry enterprise.

Various **methods** were used in this final qualifying paper. The authors used methods of comparison and formalization in the process of evaluation of company's economic activity indicators; methods of generalization and abstraction in the process of analysis of Ukrainian and international pharmacological markets; methods of analysis and induction in the process of determining the ways of increasing the enterprise's competitiveness.

Introduction contains the relevance of the topic, the analysis of the latest publications concerning the export potential of the enterprise, the purpose, subject, object of the research, scientific and practical novelty, methods of research.

In the first part «Research of current activity of “Pharmhim” Ltd» the authors researched the tendencies of international market's of pharmacological goods, represented estimation of financial and economic activities of “Pharmhim” Ltd over the last five years.

The second part «Assessment of the level of export potential of “Pharmhim” Ltd on the pharmacological industry market» represents the research of the competitive environment of “Pharmhim” Ltd and evaluation of the export potential of the enterprise.

Third part «Ways of increasing of export potential of “Pharmhim” Ltd on the external markets» includes determination of the measures in order to increase the competitiveness of “Pharmhim” Ltd on European and Asian markets and a forecast of the offered measures effectiveness

Conclusions include generalized results of analysis of the subject of research and the ways of increasing of “Pharmhim” Ltd export potential on the external markets.

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Кафедра світової економіки

ВИПУСКНА КВАЛІФІКАЦІЙНА РОБОТА

на тему:

«Експортний потенціал підприємства фармацевтичної промисловості»
(на матеріалах ТОВ «Фармхім», м. Шостка, Сумської обл.)

Студента 2 курсу, 2ам групи,
спеціальності 051 «Економіка»
спеціалізації «Міжнародна економіка»

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Київ 2019