СОЦІАЛЬНО-ЕКОНОМІЧНІ ПРОБЛЕМИ СУЧАСНОГО ПЕРІОДУ УКРАЇНИ

UDC: 338.45:339.56(477) (438)

JEL E62, E23, F63

L. Sozanskyy

PhD in Economics, Senior Researcher of Department of development of industrial sphere of the region and investment of the Dolishniy Institute for Regional Research of NAS of Ukraine, Lviv

e-mail: ls.ird2@ukr.net

https://orcid.org/0000-0001-7854-3310

EVALUATION OF THE RESULTS OF INDUSTRY FUNCTIONING IN UKRAINE AND POLAND

The comparative estimation of functioning of the industry in Ukraine and Poland in the period of 2011-2016 years is carried out. According to the results of the analysis, the predominance of the industrial sector of Polish economy (compared to the similar sector of Ukrainian economy), efficiency and innovation is explained. The ways of eliminating the weaknesses of the industry of Ukraine, in particular, in the direction of increasing financial-economic activity and the level of implementation of innovations in production, are offered. The most important competitive advantages of Polish industry were determined by the indicators of economic efficiency (profitability of operating activities, assets and turnover), resource efficiency (labor productivity) and innovation activity (the share of enterprises that introduced innovations in the total number of industrial enterprises, the share of implemented innovative products in the total volume of industrial production sales and the share of expenses on innovations in the total volume of capital investments).

Keywords: industry, activity, efficiency, innovations, capital investment, industrial production.

Созанський Л. Й. ОЦІНКА РЕЗУЛЬТАТІВ ФУНКЦІОНУВАННЯ ПРОМИСЛОВОСТІ УКРАЇНИ І ПОЛЬШІ

Виявлення сильних і слабких сторін української і польської промисловості здійснено шляхом розрахунку системи показників ефективності і активності промислової діяльності, та підсумовуючого інтегрального індексу конкурентних переваг. Результати аналізу значень інтегрального індексу конкурентних переваг промислових секторів економіки України і Польщі за 2011-2016 роки виявили переважання польської промисловості в усі роки аналізованого періоду. Найвагоміші конкурентні переваги промисловості Польщі виявлено за показниками економічної ефективності (рентабельність операційної діяльності, активів і обороту), ресурсної ефективності (продуктивність праці) і інноваційної активності (частка підприємств, що впроваджували інновації у загальній кількості промислових підприємств, частка реалізованої інноваційної продукції в загальному обсязі реалізованої промислової продукції і частка витрат на інновації в загальному обсязі капітальних інвестицій). Причиною збитковості обороту і, водночас, активів вітчизняної промисловості є надмірний обсяг інших (не пов'язаних із основною діяльністю) витрат. З огляду на непрозорий зміст переважної більшості статей цих витрат (а надто «інших»), ϵ необхідність їх деталізації у фінансових звітах підприємств із метою посиленого контролю з боку Державної фіскальної служби України за ними. Для підвищення інноваційності промислового сектора національної економіки необхідно, з одного боку, покращити макроекономічні умови функціонування суб'єктів промислової діяльності в Україні у напрямку сприяння розширенню внутрішнього попиту на вітчизняну промислову продукцію і збільшенню її пропозиції, а також удосконалення системи управління якістю промислової продукції та прискорення міжнародної сертифікації підприємств, а з іншого – підвищити ефективність капіталовкладень та рівень упровадження інновацій у виробництво. Також необхідна поступова переорієнтація інвестиційних потоків у розвиток високотехнологічних виробництв, зокрема шляхом податкового та митного стимулювання вітчизняних інвесторів і державного гарантування захисту іноземних. Дієвим інструментом податкового стимулювання може стати зниження ставки податку на прибуток (або податкові канікули) для виробників високотехнологічних товарів при одночасному підвищенні цієї ставки для виробників сировинних товарів.

Ключові слова: промисловість, активність, ефективність, інновації, капітальні інвестиції, промислова продукція.

Formulation of the problem. The implementation of a free trade area between Ukraine and the EU member states actualizes cross-border comparative assessments for identifying the competitive advantages of the industrial sector of national economy. Such assessment is correct for the industry of Ukraine and Poland as neighbors.

Ukraine prevails over Poland by almost twice the area (by 291 thousand sq. Km or by 93%), and by population – by 4.15 million people or by 10.8% (as of January 1, 2017). There are 14 special economic zones and 60 industrial and industrial parks in Poland. Instead, in

Ukraine, there are formally 11 special economic zones and 12 industrial and industrial parks, of which only four actually operate. In the structure of industry in Poland, the light and food industry (as in the border regions of the EU with the regions of Ukraine) holds the highest positions (by volume of production), and in the structure of industry of Ukraine there is ferrous metallurgy and machine building.

Analysis of recent research. The results of thorough research on theoretical and applied aspects of the management of productive resources are given in [1-6]. In

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

particular, a comprehensive assessment of the impact of the FTA between Ukraine and EU member states on industrial activities was carried out by a group of scientists led by V. M. Geitsa [1]. The study of the interconnection of technological investments and the technological structure of exports and realized industrial products, as well as a comparative assessment of labor productivity in Ukraine and the EU, Canada, USA and CIS countries, was carried out in [2]. Practical aspects of building the labor potential of industry are covered in [3]. The principles of state strategy and policy in the development of industry are considered in [4]. The current state and perspective directions of modernization of fixed capital in the Western region of Ukraine, based on the results of integrated assessment and economicmathematical modeling of the cost of fixed capital of industrial enterprises, are illustrated in [5]. Trends in the impact of major socio-economic factors on labor productivity are considered in [6].

At the same time, in these and other studies insufficient attention is paid to the comparison of the Ukrainian and Polish industries, in particular in the area of the efficiency of industrial activity. The need for such

information for the development and implementation of the latest industrial policy in Ukraine, aimed at increasing the competitiveness of domestic industry, updates the research in this direction.

The goal of the article is to compare the functioning of the industry of Ukraine and Poland by a system of indicators that characterize the level of efficiency and activity of the subjects of industrial activity.

Main results of the study. By integrating the set of primary indicators reflecting production, economic and resource efficiencies, as well as economic, industrial, capital, innovation, investment and export activity of industrial enterprises, corresponding indices which together determine the competitiveness of the industrial sector, were calculated.

The analysis of general integral index revealed that the competitiveness of Polish industry in all the years of analyzed period (2011-2016) was higher than of Ukraine industry. This gap has become the biggest in 2015 (0.333 points), but in 2016 was reduced to a minimum (0.067 points) (Fig. 1). The latter reflects a significant intensification of industrial activity in Ukraine.

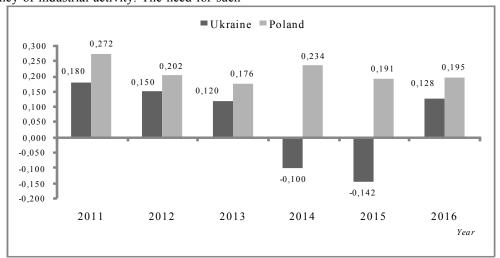


Fig. 1. The integral index of industrial competitiveness of Ukraine and Poland Author's calculations based on [7; 8].

Calculations of partial integral indices (conducted in the context of the seven competitive advantages) of the Ukrainian and Polish industries revealed the prevalence of the values of most indicators of the latter, which is a sign of the higher level of activity and efficiency of the functioning of the industrial sector of the economy of this neighboring country (table 1).

The most significant competitive advantages of the Polish industry were determined by economic efficiency—during the period under review, with the growing negative trends since 2011, when the difference between the indexes of integrated indices in favor of the Polish industry was 0.032 points (or 1.77 times), and in 2016 it reached 0, 52 points (or 5.39 times). This is due to the higher values in Poland of the indicators of both the profitability of the turnover and the profitability of assets (in Ukraine the negative values since 2014) and the profitability of operating activities (by 0.16 points (or 1.62 times in 2016).

By resource efficiency in 2016, the Polish industry dominated the Ukrainian 3.29 times (compared to 2.66 times in 2011). This is due to a much higher value of the Polish labor productivity index (by 0.346 points or 3.6 times in 2016). At the same time, the average number of workers in the Polish industry surpassed the same indicator in Ukraine at 1.11 times (or 272.2 thousand people), whereas in 2011, by contrast, the number of workers in the Ukrainian industry was higher than 1.25 times (or for 671.4 thousand people).

By the level of innovation activity in 2016, the Polish industry prevailed in Ukraine 1.6 times (against 3,09 times in 2014), which was a sign of the gradual restoration of innovation activity in Ukraine. Most (8.89 times in 2015 compared to 4.65 times in 2014), Ukraine yielded Poland by the value of the indicator of the share of realized innovative products in the total volume of industrial products sold, the data of which since 2016 are absent. Also, a significant predominance of

СОЦІАЛЬНО-ЕКОНОМІЧНІ ПРОБЛЕМИ СУЧАСНОГО ПЕРІОДУ УКРАЇНИ

Table 1
Indicators of status and performance the industry of Ukraine (U) and Poland (P)
(in units of a unit)

	2011		2012		2013		2014		2015		2016	
Indicator	U	P	U	P	U	P	U	P	U	P	U	P
				Produc	tion activ	vitv						
Sold production of industry												
growth rate	0,251	0,154	0,048	0,036	-0,033	0,004	0,080	0,023	0,243	0,038	0,215	0,057
Share of industrial	-, -		- ,	.,	.,	.,	.,	.,.	-, -	.,	, -	.,
production in total output	0,311	0,310	0,307	0,312	0,305	0,304	0,320	0,309	0,311	0,308	0,314	0,312
Integral index	0,281	0,232	0,177	0,174	0,136	0,154	0,200	0,166	0,277	0,173	0,264	0,185
Export activity												
Share of industrial goods												
in the export of goods and	0,757	0,601	0,692	0,577	0,668	0,574	0,670	0,559	0,609	0,547	0,595	0,529
services		-		-		-	-	-				
Share of exports in the												
volume of industrial	0,411	0,353	0,350	0,355	0,330	0,372	0,362	0,378	0,359	0,388	0,326	0,387
products sold												
Integral index	0,584	0,477	0,521	0,466	0,499	0,473	0,516	0,469	0,484	0,467	0,460	0,458
Investment activity												
Growth rate of capital												
investment of industrial	0,421	-0,013	0,164	0,139	0,065	0,025	-0,116	0,146	0,016	0,154	0,343	-0,259
enterprises												
Growth rate of foreign												
direct investment in the	0,085	1,626	0,127	-0,392	0,049	-0,545	-0,177	0,935	-0,104	-0,023	-0,284	0,247
industry												
Share of industry in FDI	0,347	0,356	0,315	0,671	0,310	0,696	0,323	0,259	0,306	0,198	0,255	0,258
total inflows		-		,						,		
Integral index	0,284	0,656	0,202	0,139	0,141	0,059	0,010	0,446	0,073	0,109	0,105	0,082
Capital activity												
Growth of irreversible	0,130	0,118	0,452	0,089	0,079	0,060	0,034	0,052	0,081	0,037	0,103	0,049
assets rate		-		-		-	-	-				
Share of irreversible assets	0,476	0,611	0,545	0,639	0,552	0,647	0,531	0,647	0,490	0,648	0,456	0,644
is in assets	0.202	0.264	0.400	0.264	0.215	0.252	0.202	0.250	0.205	0.242	0.270	0.247
Integral index 0,303 0,364 0,499 0,364 0,315 0,353 0,283 0,350 0,285 0,342 0,279 0,347												
Innovation activity Share of innovation active												
enterprises in the total number	0,128	0,350	0,136	0,342	0,136	0,365	0,121	0,362	0,152	0,363	0,166	0,363
of industrial enterprises	0,120	0,550	0,130	0,542	0,130	0,505	0,121	0,302	0,132	0,303	0,100	0,505
Share of innovative												
products sales in total sold	0,038	0.118	0,033	0,124	0,033	0,115	0,025	0,116	0,014	0,125	н.д.	0,104
production of industry	,,,,,,	,,,,,,,	,,,,,,	*,	,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	*,*=*	-,	,,,,,,,	,,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Share of spendings on innova-	0.102	0.205	0.105	0.262	0.000	0.246	0.000	0.240	0.150	0.075	0.107	0.200
tion in total capital investment	0,182	0,285	0,125	0,262	0,098	0,246	0,089	0,248	0,158	0,275	0,197	0,208
Integral index	0,116	0,251	0,098	0,242	0,089	0,242	0,078	0,242	0,108	0,254	0,182	0,286
Resource efficiency												
Return on assets	0.020	0,016	0,014	0,016	0,013	0,015	0,013	0,014	0,015	0,014	0,017	0,014
Labour productivity	0,144	0,419	0,167	0,441	0,160	0,450	0,131	0,452	0,119	0,464	0,133	0,480
Integral index	0,082	0,218	0,090	0,228	0,086	0,232	0,072	0,233	0,067	0,239	0,075	0,247
	•		•		nic activ				•	•	•	•
Return on operating activity	0,047	0,075	0,034	0,059	0,030	0,061	0,016	0,059	0,009	0,057	0,042	0,068
Return on assets	0,042	0,077	0,012	0,059	0,007	0,059	-0,083	0,053	-0,077	0,047	-0,003	0,060
Return of turnover	0,045	0,078	0,016	0,060	0,010	0,063	-0,116	0,057	-0,102	0,051	-0,004	0,065
Integral index	0,045	0,077	0,021	0,059	0,016	0,061	-0,061	0,057	-0,057	0,051	0,012	0,064
General Integral Index	0,259	0,339	0,205	0,249	0,163	0,215	-0,139	0,286	-0,203	0,233	0,184	0,237
Authoria calculations bases	l on [7: 0											

Author's calculations based on [7; 8].

Polish industry during the analyzed period was observed in the share of enterprises that introduced innovations in the total number of industrial enterprises (more than 2 times) and an indicator of the share of expenses on innovations in the total volume of capital investments (2.77 times in 2014). At the same time, it should be noted that in 2016, compared to the previous year, in Ukraine the values of these indicators increased by 1.4 percentage

points. (up to 16.6%) and 5 points (up to 20.8%), respectively.

The values of the indicators of capital activity of the Polish industry during the analyzed period (except for 2014) prevailed in similar indicators of the Ukrainian one, in particular, in 2016 at 1.24 times. This is due to the higher share of non-current assets in the total assets of the industrial sector of the Polish economy and the declining

^{*}The integral index of Ukraine and Poland's innovation activity for 2016 is calculated on the basis of two indicators.

^{**} Labor productivity of Ukraine and Poland is calculated in Polish zloty for the average yearly rate of NBU in corresponding years

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

trend in Ukraine in this indicator (45.6% in 2016 compared to 54.5% in 2012). At the same time, the growth rates of non-negotiable assets of industry in Ukraine were higher than in Poland, in particular 2.1 times in 2016.

According to the level of investment activity, the Ukrainian industry prevailed in Poland in 2012, 2013 and 2016. This is due to a generally higher growth rate of capital investment and FDI in Ukrainian industry, as well as a decrease in the share of industry in the total volume of FDI in Poland in 2014-2016.

In terms of export activity, the Ukrainian industry over the analyzed period prevailed in the Polish. However, this advantage was characterized by a declining trend – from 1.22 times in 2011 – to 1,004 times in 2016. The preponderance of Ukrainian industry is the higher (but falling) share of industrial goods in exports of goods and services (59.5% in 2016 compared with 75.7% in 2011), while Poland has a higher (and growing) share of exports in the volume of industrial sales products (38.7% vs. 35.3% respectively).

The relatively higher level of industrial activity in Ukraine in 2014-2016 is due to higher rates of growth of the volume of industrial products sold in this period, in particular 21.5% against 5.7% in Poland in 2016. However, this activity is explained by the inflation factor. At the same time, the value of indices of the share of industrial production in the total volume of sales of products (works, services) in Ukraine and Poland almost coincides (31.4% vs. 31.2%), which indicates the same level of industrialization of the economy of these countries.

Conclusions. The main problem of the domestic industry is the low efficiency of financial and economic activity. Thus, in 2016, the financial result from the usual activity before taxation of the Ukrainian industry was negative (-7569.6 million UAH). Instead, the financial result (profit) from operating, that is, the main (or production) activity amounted to 96856.9 million UAH. Consequently, the reason for the loss in turnover and, at the same time, the assets of the domestic industry is an excessive amount of other (not related to the main activities) costs. These costs include:

- financial expenses shows expenses for interest and other expenses of the enterprise related to borrowing;
- loss from equity reflects the loss on investments in associates, subsidiaries or joint ventures, which are accounted for using equity method;
- other expenses fix the cost of realization of financial investments; losses from non-operational exchange rate differences; losses from the deduction of financial investments and non-current assets; costs of enterprises from changes in the carrying amount of financial instruments that are measured at fair value; other expenses incurred in the course of economic activity (other than financial expenses) but not related to the operations of the enterprise).

Given the opaque content of the vast majority of articles of these expenditures (and especially «other»), there is a need for their detail in the company's financial

statements for the purpose of increased control by the State fiscal service of Ukraine.

To improve the innovation of the industrial sector of the national economy, on the one hand, it is necessary to improve the macroeconomic conditions of the operation of the subjects of industrial activity in Ukraine in the direction of promoting the expansion of domestic demand for domestic industrial products and increasing its supply, as well as improving the quality management system of industrial products and accelerating the international certification of enterprises, and, on the other hand, increase the efficiency of investments and the level of implementation of innovations in production. There is also a need for a gradual reorientation of investment flows in the development of high-tech industries, in particular through tax and customs incentives for domestic investors and state guarantees for foreign protection. An effective tax incentive can be a reduction in the tax rate on profits (or tax holidays) for high-tech manufacturers, while raising the rate for commodity producers at the same time. It may be of interest and involve small and medium-sized businesses in the process of investing in high-tech manufacturing.

In its turn, the expansion of opportunities for the introduction of innovations into the industry requires:

- development of innovation infrastructure in the region by creating innovative clusters or technological parks (for example, Poland), in particular on the basis of institutes of the National Academy of Sciences of Ukraine;
- monitoring, on the one hand, the needs of enterprises in innovations, and, on the other hand, developments in the research and development institutions intended for sale, and the creation on this basis of the information catalog of innovations on the basis of the «supply-demand» principle;
- formation of an effective organizational and financial mechanism for the support and development of innovation activities by providing financial and credit assistance to economic entities that implement investment projects of innovative direction, in particular in energy and resource conservation;
- organization of an effective network of «scienceproduction» based on the establishment of technology transfer centers for combining the potential of science, production and financial capital (with the involvement of small and medium-sized businesses).

To increase the access of industrial enterprises to investment resources, in particular foreign ones, it is necessary to:

- the establishment of a system for monitoring investment projects implemented in the framework of public-private partnership, and continuous monitoring, in particular public, for their implementation in order to prevent inefficient use of capital investments;
- conducting an annual rating assessment of investment attractiveness of the administrative-

СОЦІАЛЬНО-ЕКОНОМІЧНІ ПРОБЛЕМИ СУЧАСНОГО ПЕРІОДУ УКРАЇНИ

- territorial units and leading commodity producers in the region, with further placement of its results on the investment portal of the region;
- creation of conditions for closer cooperation of the region with European organizations and funds involved in financial support for regional development within the framework of international cooperation programs, in particular EU funds through the instruments of the Neighborhood and Partnership, border cooperation programs, other international programs and donors (World Bank, European Bank for Reconstruction and development, European Investment Bank, etc.

References

- 1. Heyets, V. M., Danylenko, A. I., & Ostashko, T. O. (Eds.) (2015). Implementatsiya Uhody pro asotsiatsiyu mizh Ukrayinoyu ta ES: rekomendatsiyi na osnovi dosvidu krayin Skhidnoyi Yevropy [The implementation of the Association Agreement between Ukraine and the EU recommendations based on the experience of Eastern Europe] (Scientific report). Kyiv: Institute for Economics and Forecasting NAS of Ukraine. [in Ukrainian].
- 2. Shynkaruk, L. V. (Ed.), Bevz, I. A., Baranovska, I. V., Bobukh, I. M., Vdovichen, A. A., Herasimova, O. A., & et al. (2015). Strukturni transformatsii v ekonomitsi Ukrainy: dynamika, superechnosti ta vplyv na ekonomichnyi rozvytok [The structural transformations in the economy of Ukraine: dynamics, contradictions and impact on economic development]. Kyiv: Institute for Economics and Forecasting of the NAS of Ukraine. [in Ukrainian].
- 3. Kindzerskyy, Yu. V. (Ed.), Yakubovskyy, M. M, Halytsya, I. O., & et. al. (2009). Potentsial national'noyi promyslovosti: tsili ta mekhanizmy efektyvnoho rozvytku [Potential national industry objectives and mechanisms for the effective development]. Kyiv: Institute for Economics and Forecasting NAS of Ukraine. [in Ukrainian].
- 4. Kindzerskyy, Yu. V. (2013). Promyslovist Ukrainy: stratehiya i polityka strukturnotekhnolohichnoyi modernizatsiyi [Ukraine industry: strategy and policy of structural and technological modernization]. Kyiv: Institute for Economics and Forecasting of the NAS of Ukraine. [in Ukrainian].
- 5. Ishchuk, S. O. (Ed.). (2015). Osnovnyy kapital u Zakhidnomu rehioni Ukrainy: suchasnyy stan i perspektyvni napryamy modernizatsiyi [The fixed capital of Western region of Ukraine: current status and perspective directions of modernization]. Lviv: Dolishniy Institute of Regional Research of NAS of Ukraine. [in Ukrainian].

- 6. Amosha, O. I., Vyshnevskyy, V. P. (Ed.), Zbarazska, L. O., & et. al. (2014). Promyslovist' i promyslova polityka Ukrayiny 2013: aktual'ni trendy, vyklyky, mozhlyvosti [Industry and industrial policy of Ukraine 2013: current trends, challenges, opportunities] (Analytical report). Donetsk: Institute of the Economy of Industry of the NAS of Ukraine. [in Ukrainian].
- 7. State Statistics Service of Ukraine: Official website (2017). Retrieved from http://www.ukrstat.gov.ua [in Ukrainian].
- 8. Central Statistical Office of Poland: Official website (2017). Retrieved from http://stat.gov.pl [in Poland].

Список використаних джерел

- 1. Імплементація Угоди про асоціацію між Україною та СС: рекомендації на основі досвіду країн Східної Європи: наукова доповідь / наук. ред.: В. М. Геєць, А. І. Даниленко, Т. О. Осташко ; Ін-т економіки та прогнозування НАН України. К., 2015. 104 с.
- 2. Структурні трансформації в економіці України: динаміка, суперечності та вплив на економічний розвиток: наукова доповідь / [Л. В. Шинкарук (ред.), І. А. Бевз, І. В. Барановська та ін.]; ДУ «Ін-т екон. та прогнозув. НАН України». К., 2015. 304 с.
- 3. Потенціал національної промисловості: цілі та механізми ефективного розвитку / Ю. В. Кіндзерський (ред.), М. М. Якубовський, І. О. Галиця та ін. ; Ін-т екон. та прогнозув. НАН України. К., 2009. 928 с.
- 4. Кіндзерський Ю. В. *Промисловість України: стратегія і політика структурно-технологічної модернізації*: монографія / Інститут економіки та прогнозування НАН України. К., 2013. 536 с.
- 5. Основний капітал у Західному регіоні України: сучасний стан і перспективні напрями модернізації: [монографія] / ред. С. О. Іщук; ДУ «Інститут регіональних досліджень імені М. І. Долішнього НАН України». Львів, 2015. 172 с. (Серія «Регіони: моніторинг, прогнози, моделі»).
- 6. Промисловість і промислова політика України 2013: актуальні тренди, виклики, можливості: наук. аналіт. доповідь / О. І. Амоша, В. П. Вишневський (ред.), Л. О. Збаразська та ін. ; Ін-т економіки пром-сті НАН України. Донецьк, 2014. 200 с.
- 7. Зовнішньоекономічна діяльність // *Офіційний сайт Державної служби статистики України*. Режим доступу: http://www.ukrstat.gov.ua
- 8. Офіційний сайт Центрального статистичного управління Польщі. Режим доступу: http://stat.gov.pl

Надійшло 11.01.2018 р.