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## **COMPARATIVE ASSESSMENT OF STRUCTURAL INDICATORS OF UKRAINE INDUSTRY AND THE EUROPEAN UNION**

### **OCENA PORÓWNAWCZA STRUKTURALNYCH WSKAŹNIKÓW PRZEMYSŁU UKRAINY I UNII EUROPEJSKIEJ**

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#### **Introduction**

Despite the slowing down of industrial development in Ukraine due to the influence of many factors (socio-political, monetary, etc.), industry remains the leading form of economic activity. Thus, in particular, the share of industrial output in the volume of sales of the products (the goods and services) in 2016 amounted to 31.4% (against 31.1% in 2011). However, the share of industrial goods in total exports of goods and services for this period decreased to 59.5% (against 75.7%), and the share of the population employed in industry, to 15.3% (vs. 16.5%). At the same time, labor productivity in Ukraine is 3.6 times lower than, for example, in Poland<sup>1</sup>. The problems of the domestic industry are due to the dominance of materials and energy-intensive technologies and the high degree of depreciation of fixed assets – 69.4% (in the processing industry 76.4%). As a result, the Ukrainian industry is inferior to Polish by the share of enterprises that introduced innovations, in the total number of industrial enterprises more than twice, and by the share of implemented innovative products in the total volume of industrial products sold – almost in 9 times.

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<sup>1</sup> Author's calculations according to the Central Statistical Office of Poland – Central Statistical Office of Poland: Official site (2016). Retrieved from <http://stat.gov.pl> [in Poland].

The signing of the Association Agreement between Ukraine and the European Union (EU) updated the need to increase the competitiveness of domestic producers' products to the level of the EU member states. The solution of this problem is impossible without structural modernization of Ukrainian industry. In its turn, the choice of directions and mechanisms for improving the structure of the industrial sector of the national economy and improving its efficiency should be based on the results of relevant analytical assessments.

### The main research information

The level of industrial economy of the country characterizes the size of its industrial sector in the release of all types of economic activity. The economy of Ukraine belongs to the industrial type. Thus, in spite of a decrease in the share of industry in the release of all types of economic activity, in 2015, Ukraine's 7.65 percentage points (hereafter – in pp.) Prevalled in the EU-28 for this indicator (Table 1), reaching of the five – this place among EU member-states and second only to the Ireland, Slovakia, Czech Republic and Hungary, respectively, at 10.77. and 6,69, 6.44 and 5.87 pp. The sixth place was occupied by Poland, whose share of industry in the issue of all in 2015 was 37.79% (against 38.1% in Ukraine). At the same time, in terms of industrial output, the country was the seventh among the EU member states in 2015, while Ukraine occupied only 19-th place (compared to 13-th in 2013). The volume of domestic industry output is 30.7 times smaller than that of the German industry leader.

**Table 1. The share of industry (by types of industrial activity) in the production of all types of economic activity in industry**

Type of industrial activity	Ukraine				EU-28			
	2012	2013	2014	2015	2012	2013	2014	2015
<b>Industry</b>	<b>41.15</b>	<b>38.34</b>	<b>38.87</b>	<b>38.10</b>	<b>30.96</b>	<b>30.66</b>	<b>30.35</b>	<b>30.45</b>
Extractive industry and career development	11.80	12.75	11.98	11.67	2.24	2.12	1.92	1.66
Manufacturing	75.19	73.93	74.84	75.57	84.50	84.42	84.92	85.29
Supply of electricity, gas, steam and air condition	11.15	11.49	11.38	11.08	9.68	9.85	9.51	9.45
Water supply; sewage, waste management	1.86	1.83	1.80	1.69	3.58	3.61	3.65	3.60

Source: author's grouped by [2–4].

Among the industrial activities, the largest share in the structure of industrial production (with a tendency to increase) is the processing industry. The value of this indicator in Ukraine during the analyzed period was more than 9.0%, below, than in the EU-28, which indicates the national economy's belonging to the raw material type. Thus, in 2015, the domestic processing industry by the share of the industrial sector of the economy ranked 25-th among the EU member- states, but in terms of

volume – 20-th (compared to 15-th in 2013), yielding to German processing industry in more than 36 times.

The highest share of manufacturing in the industry in 2015 was in the Ireland (96.71%), Hungary (92.86%) and Belgium (90.78%). At the same time, these countries occupied the 8-th, 16-th and 9-th places according to the volume of production of the processing industry. In four EU countries, the share of processing industry in the issue was less than in Ukraine. In addition to Malta, Croatia and Cyprus, the UK also owns these countries, which in terms of output of the processing industry prevails over Ukraine more than in 13 times, ranked 4-th among the EU.

In the structure of Ukraine's industrial sector, relatively high (>11%) is a share of extractive industry and the development of quarries. By this indicator, Ukraine during 2012–2015 consistently exceeded the EU-28 by more than 10.0% and was ranked the first number among the countries in question, but the 6-th – by volume (compared to the 3-rd in 2013), which is almost 6.5 in times lower than the leader of the UK. Among the EU member-states, the mining and quarrying are the most specialized in Croatia (with a share of 10.60% in 2015), GB (5.42%) and the Netherlands (5.07%). In the other of the analyzed countries, the share of this type of industrial activity in the production of the industrial sector of the economy was less than 5% in 2015, in particular in Poland – 3.74% (7-th place), which, however, in the 2015, took 3-rd place in the volume of extraction industry and the development of quarries.

By the share of electricity, gas, steam and air-conditioned air supply in the industry over the analyzed period of time, Ukraine steadily surpassed the EU-28 by more than 1.5 pp., in 2015, the 13-th place among the EU member states. Despite the decreasing trend in the value of this indicator since 2014, Ukraine has a significant potential for developing of this type of the industrial activity, primarily electricity (nuclear, hydro- and the renewable), but it was only 16-th in 2015 in terms of its output (against the 14-th in 2013), lagging behind GB more than in 20 times.

In the EU, the share of electricity, gas, steam and air conditioning in industrial production in 2015 was the highest in Cyprus (18.35% vs. 21.91% in 2014) and in Latvia (18.19% vs. 20.34%), that is, in countries with very low volumes of this kind of industrial activity (28-th and 23-rd places, respectively). Instead, the Poland, which ranked 17-th among the countries under consideration for the share of electricity, gas, steam and air conditioning in the structure of the industrial sector of the economy (8.82%), was the 6-th in terms of volume output.

The share of such industrial activities as water supply, sewage, waste management in the structure of industrial output Ukraine during the analyzed period fell to the EU-28 almost at twice pp., having achieved 27-th place in 2015 among the EU member states after Slovakia and Ireland. At the same time, in terms of the release of this type of industrial activity, these countries occupied, respectively, 19-th and 18-th places, while Ukraine is 20-th.

The socio-economic result of the functioning of the industrial sector of the economy is characterized by the amount of gross value added (GVA) created by them.

By the share of industry in the GVA of all types of economic activity, Ukraine prevailed in the EU-28 in all years of the analyzed period of time (Table 2).

**Table 2. The share of industry (by types of industrial activity) in the gross value added of all types of economic activity in industry**

Type of industrial activity	Ukraine				EU-28			
	2012	2013	2014	2015	2012	2013	2014	2015
<b>Industry</b>	<b>24.84</b>	<b>22.68</b>	<b>23.52</b>	<b>23.27</b>	<b>19.36</b>	<b>19.31</b>	<b>19.02</b>	<b>19.39</b>
Extractive industry and career development	26.32	27.15	24.33	24.20	4.51	4.17	3.62	2.80
Manufacturing	56.91	55.97	59.66	60.21	80.08	80.39	81.39	82.46
Supply of electricity, gas, steam and air condition	14.53	14.59	13.79	13.58	10.29	10.31	10.00	9.91
Water supply; sewage, waste management	2.24	2.29	2.22	2.02	4.97	4.95	5.00	4.83

Source: author's grouped by [2–4].

In 2015, Ukraine ranked 10-th among the EU member states by the value of this indicator (against the 5-th by the share), with Ireland, Czech Republic, Hungary, Romania, Slovenia, Slovakia, Poland, Germany and Bulgaria. However, in terms of the production of airborne vehicles, domestic industry was only 20-th, behind the leader – the industry of Germany – 43.8 in times.

The share of extractive industry and the development of quarries in the industry in Ukraine during 2012–2015 surpassed the similar figure of the EU-28 by more than 20.0%. Therefore, being the first among the EU member states for this indicator, Ukraine occupied only 6-th place in 2015 in volume of extractive industry and quarrying, yielding to the leader of the UK at 7.2 in times. At the same time, Germany's share of this kind of industrial activity in the aviation industry is only 0.59%, but in terms of the volume of airborne aircraft it dominates Ukraine 1.2 in times, ranked 5-th among the EU member states. It follows that the domestic extractive industry has a great potential, which, on the one hand, is one of the key competitive advantages of Ukraine on the world market of resources, and, on the other, requires significant investment for the further development of this kind of industrial activity on an intensive basis.

Instead, the domestic processing industry is characterized as a completely opposite situation. Thus, for the part of the processing industry in the gross added value of the industry, Ukraine during 2012-2015 lagged behind the EU-28 by more than 20.0% and ranked last among of all the countries analyzed. However, in terms of the volume of airborne aircraft produced, the domestic processing industry was 20-th in 2015, giving the way to the leader of the German processing industry – 64.7 in times. Ireland (94.42% in 2015 compared with 88.43% in 2014), which ranked 6-th in terms of processing industry, has the highest share of the industrial processing industry in the gross added value of the industry from the EU member states.

For the share of electricity, gas, steam and air-conditioned air supply in the industry Ukraine during the analyzed period by more than the 3.5%. The EU-28 exceeded, having achieved the 9-th place among the EU member states in 2015. However, despite the high significance of the structural index, Ukrainian energy sector was only 18-th in terms of the volume of airborne vehicles, lagging behind the leader – the energy of Germany – more than 20 in times.

The Ukraine is an outsider among the EU-28 in terms of the performance of such industrial activities as water supply, sewage, waste management, the share of which in the domestic airborne dams in 2012-2015 was less than in the EU-28, by more than 2.5 pp. But in 2015, the value of this indicator, the Ukraine ranked 28-th among the EU member states (ahead of only Ireland), but at the same time 24-th – by the volume of airborne vehicles created by named type of industrial activity. The problematic situation is due to organizational and economic factors that affect this type of industrial activity in water supply, sewage, waste management in Ukraine. This is, in particular, the unsatisfactory condition of fixed assets, unjustified price policy, and the lack of competition in this segment of the market.

The socio-economic efficiency of industry reflects the share of gross value added in the output of this sector of the economy. The higher the value of the indicator, the more efficient the industry functions, as a result of which the social and economic effects are reflected, which are reflected in the components of the airborne forces – the wages of employees, gross profit, mixed income. By the indicator of the share of airborne emissions in the industry during the analyzed period of time, Ukraine was more than in 5.0 pp. by the EU-28 was inferior (Table 3). As a result of reducing the level of the efficiency by 0.32 pp. in 2015, compared to previous domestic industry, it became an outsider in the EU, dominated by only Slovakian at 2.21 pp.

**Table 3. The share of gross value added in industrial output (by types of industrial activity)**

Type of industrial activity	Ukraine				EU-28			
	2012	2013	2014	2015	2012	2013	2014	2015
<b>Industry</b>	<b>24.18</b>	<b>24.78</b>	<b>24.95</b>	<b>24.63</b>	<b>29.89</b>	<b>30.24</b>	<b>29.88</b>	<b>30.23</b>
Extractive industry and career development	53.93	52.79	50.66	51.10	60.23	59.44	56.26	50.79
Manufacturing	18.30	18.76	19.89	19.63	28.32	28.80	28.63	29.23
Supply of electricity, gas, steam and air condition	31.52	31.47	30.21	30.20	31.78	31.67	31.43	31.72
Water supply; sewage, waste management	29.21	30.99	30.84	29.37	41.43	41.38	40.96	40.54

Source: author's grouped by [2–4].

The Denmark (40.39% in 2015 vs. 38.66% in 2014) is the leader among the list of analyzed countries, which is ahead of Sweden and the Germany, respectively, by

4.64 and 5.14 pp. The high efficiency of industry (more than 34% in 2015) was also demonstrated by Lithuania, Croatia and the United Kingdom.

The smallest level of socio-economic efficiency is characteristic for the processing industry. In the Ukraine during 2012-2015, the share of airborne vehicles in the production of this type of industrial activity was over 9.0 pp. below, than in the EU-28. Thus, in 2015, the Ukraine by value of this indicator lags behind the outsiders among the analyzed countries – Slovakia and the Bulgaria – by 1.99 and 3.0 pp. respectively, respectively. Instead, the Romania (34.69%) became the second after the Denmark (38.07%) for the share of airborne emissions in the production of manufacturing.

For the first time, the share of airborne emissions in the extraction industry and development of quarries in Ukraine for the first time exceeded the EU-28. However, given the preponderance of Ukraine (with a large margin) among the EU countries in terms of the share of extractive industry in the production and in the GTS industry, its 13th place in terms of the value of the share of airborne emissions in the release of this type of industrial activity is a sign of inefficient use of existing production potential. Among the EU Member States, the Danish extractive industry (80.18% in 2015 versus 84.72% in 2014) and the Netherlands (74.57% vs. 78.21%) have the highest efficiency, although with a downward trend. In 2015, the high value (> 60%) of the share of airborne emissions in the production of the processing industry reached Bulgaria and Slovakia. At the same time, it is precisely in these countries that the lowest among EU Member States is the efficiency of the processing industry.

During the analyzed period of time, the lag between the values of the indicator of the share of airborne volumes in the supply of electricity, gas, steam and air-conditioned air in Ukraine and the EU-28 constantly increased in favor of latter and in 2015 reached 1.52. pp. Ukraine has fallen 23-rd among the analyzed countries on the effectiveness of this type of the industrial activity, while ranking 13-th in the share of the latter in the issue and 9-th in the share of the airborne assets. It is worth noting the presence of a very significant lag (more than 3 in times) between the values of the share of airborne emissions in the production of electricity, gas, steam and the air conditioning in various EU member states. Thus, the highest value of this indicator was in Sweden in 2015 (60.62% vs. 65.79% in 2014), and the lowest in the Austria (19.66%), Slovakia (21.62%), Italy (25.49%) and Great Britain (25.61%). The latter was among the top three in terms of electricity, gas, steam and air conditioning in industrial production (16.5% vs. 11.08% in Ukraine), but inferior to Ukraine by the efficiency of this kind of industrial activity by 4.59 pp.

The value of the indicator of the share of airborne emissions from the supply of water, sanitation, and waste management during 2012-2015 years in Ukraine was lower than in the EU-28, at more than 10.0 pp., which made it an outsider among the EU member states on the effectiveness of this type of industrial activity. This situation necessitates a revision of the state industrial policy on water supply, sanitation, waste management in order to increase its capacity (taking into account water resources in Ukraine) and increase productivity. For example, in the post-socialist countries, such

as the Croatia, Slovakia, Poland, Bulgaria, Lithuania and Latvia in 2015, the share of airborne vehicles in the production of this type of industrial activity was more than 50%. This implies the need to deregulate this type of industrial activity in Ukraine in liberalization of tariff policy.

The importance of the industrial sector of the economy in foreign trade (from the standpoint of its socio-economic efficiency) characterizes the indicator of the share of industry in exports of gross value added of all types of economic activity. The greater the value of this indicator, the greater the presence of high-quality industrial products in foreign markets, and hence the higher competitiveness of the country's industry. In 2012 and 2014, Ukraine surpassed the EU-28, which is evidence of the high export orientation of the industrial sector of the national economy (Table 4).

**Table 4. The share of industry (by types of industrial activity) in the export of gross value added of all types of economic activity (in industry)**

Types of industrial activity	Ukraine				EU-28			
	2012	2013	2014	2015	2012	2013	2014	2015
<b>Industry</b>	<b>41.59</b>	<b>39.51</b>	<b>40.54</b>	<b>37.21</b>	<b>40.48</b>	<b>40.40</b>	<b>40.51</b>	<b>41.27</b>
Extractive industry and career development	18.13	22.14	22.46	19.91	3.92	3.62	3.47	2.83
Manufacturing	68.42	66.68	69.71	70.92	91.65	92.45	92.89	93.89
Supply of electricity, gas, steam and air condition	1.71	1.71	1.61	1.49	0.23	0.18	0.20	0.20
Water supply; sewage, waste management	0.19	0.23	0.20	0.21	1.56	1.24	1.43	1.38

Source: author's grouped by [2–4].

However, in 2015, due to a decrease in the share of domestic industry in the export of airborne vehicles of all types of economic activity in industry (and opposite processes in the EU-28), Ukraine yielded the latter at 4.06 pp., having the 21-st place (against the 13-th in 2014) among the EU member states for this indicator. At the same time, Ukrainian industry was 19-th in terms of exports of airborne vehicles and in terms of exports of industrial products.

At the same time, mining and quarrying in Ukraine is the most export-oriented country compared with the EU countries – its share in the export of the airborne assets of the industrial sector of the national economy during the analyzed period averaged almost 6 in times (over 17 pp.), which was the same as in the EU-28. However, being the leader among the EU member states in terms of this structural indicator, Ukraine in 2015 occupied only the 4-th place in the volume of export of airborne assets extractive industry and the development of quarries and the 3-rd – by the volume of export of products of this type of industrial activity. In the EU-28, the highest volumes of exports of products and mining industries and the development of quarries were demonstrated by Poland – it surpassed Ukraine by these absolute figures of 1.42 and 1.55 in times, respectively.

The export-oriented in Ukraine is a kind of industrial activity such as supply of electricity, the gas, steam and air-conditioned air. Despite the tendentious decline in its share in the exports of industry, Ukraine in this indicator in the EU-28 was dominated by 1.29 pp. in 2015, being the 8-th among the list of analyzed countries. At the same time, the domestic industry ranks 7-th in terms of exports of electricity, the gas, steam and air-conditioned air, giving way to the leader of the German industry by almost 38 in times, and by almost 45 in times the volume of airborne exports exported by this type of industrial activity.

The water supply, the sewage, waste management has the smallest share in the export of the airborne vehicles industry, during 2012–2015, Ukraine was inferior to the EU-28 for this structural indicator by more than 1 pp. and ranked 26-th among in the EU. The position of Ukraine and the volume of export of airborne vehicles of this type of industrial activity is similar: it lags behind the leader, – Germany, – more than 122 in times, while by volume of exports of water supply, sewage, waste management – almost 76 in times.

For the domestic industry, not only is the low share of airborne emissions in the production, but also the irrational structure of the airborne aircraft itself, despite the tendency to improve it. Thus, in Ukraine, the share of gross profit, mixed income in the structure of the airborne industrial sector of the industry in 2015 was less than 50%, while in Poland it was close to 60% (Table 5).

**Table 5. The structure of the gross value added in industry, %**

Indicator	Ukraine			Poland		
	2013	2014	2015	2013	2014	2015
<b>Industry</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Salary of hired workers	66.50	59.85	52.87	41.90	44.30	41.40
Other taxes related to production	3.16	2.90	2.46	1.70	1.70	1.60
Other subsidies related to production	-5.85	-6.08	-2.04	-0.90	-1.40	-1.30
Gross profit, mixed income	36.19	43.32	46.71	57.30	55.40	58.30
<b>Mining and quarrying</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Salary	59.78	43.89	35.97	56.90	65.80	56.50
Other taxes	1.73	1.92	2.11	4.00	4.50	3.50
Other subsidies	-17.58	-11.52	-2.52	-1.00	-1.80	-0.30
Gross profit	56.07	65.71	64.44	40.10	31.50	40.30
<b>Extraction of stone and brown coal</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Salary	148.40	143.30	147.06	76.50	96.80	72.20
Other taxes	2.00	2.40	2.40	0.60	2.30	1.50
Other subsidies	-64.50	-75.70	-15.41	-0.10	-1.40	0.00
Mixed income	14.10	30.00	-34.05	23.00	2.30	26.30



<b>Manufacturing</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Salary	69.75	63.71	56.18	43.00	45.40	43.30
Other taxes	3.78	3.22	2.90	1.10	1.10	0.90
Other subsidies	-0.41	-0.11	-0.13	-0.90	-1.50	-1.50
Gross profit	26.89	33.17	41.05	56.80	55.00	57.30
<b>Electricity, gas, steam and air conditioning supply</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Salary	59.60	66.00	61.14	26.60	26.80	23.30
Other taxes	3.60	3.40	4.83	1.80	2.40	2.80
Other subsidies	-4.70	-20.20	-11.66	-0.20	-0.40	-0.30
Mixed income	41.50	50.80	45.69	71.80	71.20	74.20
<b>Water supply; sewerage, waste management and remediation activities</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Salary	110.60	92.70	101.31	42.80	42.70	41.20
Other taxes	2.50	1.90	5.26	5.30	6.40	5.50
Other subsidies	-7.10	-19.10	-16.23	-2.00	-2.60	-2.50
Gross profit	-6.00	24.50	9.65	53.90	53.50	55.80

Source: author's grouped by [1; 4].

According to this indicator, the Ukraine occupied the 18-th place (compared to the 28-th in 2013) among the EU member states.

Despite the reduction in production-related subsidies in 2015, 2.87 in times (compared with 2013), the Ukrainian mining industry remains more subsidized than Polish. This is mostly true for the extraction of stony and brown coal, reducing subsidies to which 4.2 in times resulted in its loss-making. At the same time, subsidies to this kind of extractive industry were stopped in Poland, but the share of profits in its was more than 26%. In parallel with the reduction of subsidies for mining and processing industry, in 2014-2015, opposite processes in the supply of electricity, gas, steam and air-conditioned air and water supply, sewage, waste management occurred in Ukraine.

The latter's of structure of the gross value added shows its direct dependence on government subsidies, while in Poland and the other EU member states (with the exception of the Slovenia and Hungary, where the share of income in the gross value added of water supply, sewage, the waste management was less than 27%), this the type of industrial activity is highly profitable.

In 2015, Ukraine was an outsider among the EU member states in terms of share of gross profits, mixed income in the structure of airborne transmission of gas, steam, and air conditioning (45.69%), although the subsidy of this type of industrial activity remained high (11,66% vs. 0.3% in Poland). Instead, the domestic mining industry is the most profitable. Despite the decrease in state subsidies in 2015 by 4,57 in times, the share of profits in gross value added of this type of industrial activity declined by

only 1,27 pp. – up to 64.44% (against 40.3 in Poland). Thus, Ukraine ranks 7-th among the countries under consideration.

The domestic processing industry accelerates the growth of profitability (by 14.2 pp. during 2013–2015) with a parallel decrease in subsidization (by 0.28 pp.). As a result, Ukraine, in terms of the share of gross profit, mixed income in the structure of processing industries, in 2015, took 21-st place (compared to the 27-th in 2013) among EU member states. It should be emphasized that in Poland, which prevailed over Ukraine by this structural indicator at 16.25 pp, the share of subsidies in the processing industry increased by 0.6 pp.

Consequently, the results of the analysis provide grounds for asserting the need for further restructuring of Ukraine's industrial sector. The gradual optimization of the structure of domestic industry should simultaneously cover all types of industrial activities. A key criterion for such an optimization is the increase in socioeconomic efficiency, which, in turn, is to increase the airborne security and improve its structure, in particular the increase in the share of gross operating profit, mixed income.

### Summary

A comparative analysis of the structural advantages of the industry of Ukraine and the EU member states in terms of the share of industry in: output of the economy, gross value added of the economy, exports of airborne vehicles, as well as the efficiency indicator (the share of airborne emissions in the industry). The place of Ukraine among EU member states is determined on the set of relative and absolute indicators of functioning of the industrial sector of the economy. A detailed comparative estimation of the structure of the airborne assets of the industry of Ukraine and Poland was conducted.

**Keywords:** efficiency, export, gross value added, industry, output, structure, type of industrial activity.

### Streszczenie

Analiza porównawcza strukturalnych zalet przemysłu ukraińskiego i państw członkowskich UE pod względem udziału przemysłu w: produkcji globalnej, wartości dodanej brutto gospodarki, eksporcie pojazdów latających, a także wskaźnika efektywności (udział emisji do powietrza w przemyśle). Miejsce Ukrainy między państwami członkowskimi UE określa się na podstawie względnych i bezwzględnych wskaźników funkcjonowania sektora przemysłowego gospodarki. Dokonano szczegółowej oceny porównawczej struktury aktywów lotniczych przemysłu ukraińskiego i polskiego.

**Słowa kluczowe:** wydajność, eksport, wartość dodana brutto, przemysł, produkcja, struktura, rodzaj działalności przemysłowej.

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