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INTERNATIONAL COMPETITIVENESS OF THE POULTRY SECTOR IN POLAND OVER THE LAST 20 YEARS

Key words: poultry, import, export, international trade, competitiveness

ABSTRACT. The research aimed to assess the changes that have occurred in the Polish export and import of poultry and the industry's competitiveness. The analysis covered the years 2003 and 2022 and was carried out based on Eurostat data. The analysis included, among others, the value and balance of turnover, geographical structure, and selected competitiveness indicators. The leading importers of Polish poultry are the European Union countries. Poland has a comparative advantage mainly in the case of the EU market, which is confirmed by the increasing values of the TC and SI indicators and the decreasing HHI indicator. The obtained SI index values show that Poland had an apparent specialization in the export of poultry sector products to the markets of Great Britain, Bulgaria, Ireland, and Malta. The downward trend of the HHI index indicates the diversification of exports, which is a positive phenomenon as it provides the Polish poultry sector with stable revenues despite emerging turbulence. The reason for such a large increase in exports to EU countries was essentially the abolition of customs duties, attractive prices, and good quality of Polish products. Despite the substantial price advantages of Polish products and the favorable structure of comparative advantage indexes, poultry producers in Poland should constantly monitor the market environment. Attractively priced products offered by Ukraine, Brazil, and Thailand may harm the Polish export of these products in the coming years.

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INTRODUCTION

Broiler production began to develop in Poland in the 1970s. In the 20th century, but only after Poland joined the European Union (EU), production increased dynamically. According to Anna Olszańska [2021], chicken broiler farms are located throughout the country. Geese and turkeys are produced mainly in the north-eastern regions, and turkeys are also produced in western Poland.

According to data from the Ministry of Agriculture and Rural Development (MRiRW), Poland is the largest producer of poultry meat in the EU [Reszczyński 2023], the second exporter of this meat in the EU, and the fourth global exporter in the world, and poultry breeding is the most intensive direction of animal production in the country. Germany is second regarding poultry meat production in the EU, and France is third [Gospodarczyk 2023]. According to analysts, the development of poultry production in Poland depends primarily on the possibility of investing production surpluses on foreign markets – mainly in EU countries, but also, to an increasing extent, on the markets of third countries. The internal demand for poultry meat also has a significant impact on the economic situation of the domestic poultry industry [Topagrar.pl 2021]. Although Poland is still one of the leading producers and exporters of poultry, it must be remembered that since the beginning of the war in Ukraine, significant amounts of this product have been imported to the EU market. In 2022, poultry imports from Ukraine reached 166,000 tons, i.e., 20% of all the meat imports from third countries. Currently, Ukraine is considered its third supplier from outside the EU, after Brazil and Thailand [EC 2023].

RESEARCH MATERIAL AND METHODOLOGY

The article aims to assess the changes that have occurred in the Polish export and import of poultry, as well as the industry's competitiveness. Eurostat data was used to achieve the goal. The analysis was carried out for the poultry sector (HS Nomenclature section 0207). In order to assess these changes, basic statistical data analysis methods were used, and the value and turnover balance, as well as the geographical structure, were analyzed. The competitiveness of poultry market products was analyzed based on data from 2003-2022. In order to examine the competitive position of the Polish poultry sector, the following competitiveness measures were used: import coverage with exports (TC), concentration measurement (HHI), and export specialization (SI).

The import-to-export coverage ratio (TC) determines the ratio of the value of exports to the value of imports, determining the degree to which the exports of products of a given industry cover the expenses incurred on imports [Misala 1997]. It was calculated as a supplement to the analysis of the foreign trade balance in poultry sector products [Verdoorn 1960, Firlej et al. 2017]:

$$TC_k = \frac{X_{ik}}{M_{ik}}$$

where:

X_{ik} – Polish export *of i*-products (here: HS section 0207) to *the k*-market (here: EU),

M_{ik} – Polish import *of i*-products (here: HS section 0207) from *the k*-market (here: EU).

The TC index is calculated as the ratio of exports to imports of the analyzed product (group of products) in the examined country. Therefore, its values exceeding 1 (TC > 1) indicate the specialization of the concerned country in trade in these products. This allows us to conclude that a given country has a relative advantage over its partners (exports exceed imports). There is no relative advantage when the coefficient values are below 1 (TC ≤ 1) [Olszańska 2016, Kowalska 2017].

The HHI index is one of the measures for measuring concentration. It is calculated as the sum of the squares of the shares of all entities in the market according to the following formula [Kowalska et al. 2022]:

$$HHI = \sum_{i}^{n} X_i^2$$

where:

X_i – country's share in Polish exports of products (here: HS section 0207),

n – the number of countries participating in Poland's exports.

The HHI (in the case of values 0-1) should be interpreted as follows:

- values below 0.15 indicate a low level of concentration and high competition,
- values between 0.15 and 0.25 indicate moderate concentration,
- values above 0.25 indicate high concentration and low competition [Cieślik 2017].

Values of the HHI meter tending to 0 are considered desirable because they indicate the geographical diversification of exports of the analyzed industry, which may confirm a higher degree of stability of export revenues.

The SI index is a measure of export specialization [Frohberg 2000]:

$$SI = \frac{X_{ik}}{X_{jk}} : \frac{X_{iw}}{X_{jw}}$$

where:

X_{ik} – Polish export *of i*-products (here: HS section 0207) to *the k*-market (here: EU member states),

X_{iw} – Polish export *of i*-products to *the w*-market (World),

X_{jk} – Polish exports *of j*-products (here: total exports) to the *k*-market (here: EU member states),

X_{jw} – Polish export *of j*-products to *the w*-market (world).

High values of the SI index ≥ 1 indicate that a given country specializes in exporting *products* to a selected market. This proves the high degree of competitiveness of domestic exports of *i*-products. If the SI index has low values (SI ≤ 1), there is a lack of export specialization. Thus, it indicates the unsatisfactory competitiveness of the examined economy or its sector [Majcher 2022].

CHARACTERISTICS OF POLISH FOREIGN TRADE IN POULTRY MEAT

In order to capture and present broader trends related to the export activity of the Polish poultry meat sector on EU markets, a synthetic assessment was made against the background of exchange with third countries. The value of Polish exports of poultry sector products within the EU member states (intra-EU) and third countries not included in the Community structures (extra-EU) is presented in Table 1.

Referring to the trends, it can be observed that the total export of poultry meat increased from EUR 213.7 million in 2003 to EUR 4,270.9 million in 2022, which means that in 20 years the value of poultry exports has increased 20 times. The average annual increase in the value of poultry meat exports in 2003-2022 amounted to EUR 168.19 million, and the fit of the trend line at the level of 0.88 indicates that this trend should be maintained in the following years. The upward trend in the value of exports is visible both in the case of EU countries and third countries. The value of exports to Community countries increased from EUR 153.3 million in 2003 (when Poland was not yet a member of the EU) to EUR 3,225.2 million in 2022, while exports to third countries in the years in question increased from EUR 60.4 million to EUR 1,045.8 million. This means that the value of exports in the analyzed period increased more than 21 times for EU countries and more than 17 times for third countries. The average annual increase in the value of poultry meat exports to EU countries during the examined period was EUR 124.56 million, with a trend line of 0.87, while in the case of non-EU countries, this value was EUR 43.63 million, with an equally good trend line at the level of 0.88. The adjustment at such a high trend line level may indicate that Polish poultry meat exports to EU countries and other markets should continue unless events that significantly change the current situation occur.

Even though the value of exports in the analyzed period had an increasing tendency, a specific decrease in the value of Polish exports can be observed in some years. A downward trend is observed in the field of total trade in 2009 and 2020, when the value of trade transactions amounted to EUR 584.7 million and EUR 2,350.6 million, respectively, while the year before, i.e., in 2008 and 2019, it fluctuated at the level of EUR 651.8 million and EUR 2,615.6 million, which means a decrease of 10.3% and 10.1%, respectively. The decline in the value of exports in these years was primarily due to the change in the level of trade with countries within the EU. Exports to these countries decreased compared

Table 1. Volume and structure of Polish poultry meat exports (intra- and extra-EU), index of changes (t-1) in 2003-2022

Year	Total export value [million EUR]	Index of changes (t-1)	Participation [%]	Value of intra-EU exports [million EUR]	Index of changes (t-1)	Participation [%]	Value of extra-EU exports [million EUR]	Index of changes (t-1)	Participation [%]
2003	213.7	-	100.0	153.3	-	71.8	60.4	-	28.2
2004	245.3	114.8	100.0	171.5	111.8	69.9	73.8	122.3	30.1
2005	379.5	154.7	100.0	281.2	164.0	74.1	98.3	133.2	25.9
2006	428.6	112.9	100.0	324.6	115.4	75.7	104.0	105.8	24.3
2007	591.8	138.1	100.0	447.9	138.0	75.7	143.8	138.3	24.3
2008	651.8	110.2	100.0	545.5	121.8	83.7	106.4	73.9	16.3
2009	584.7	89.7	100.0	466.2	85.5	79.7	118.5	111.4	20.3
2010	732.2	125.2	100.0	551.5	118.3	75.3	180.7	152.5	24.7
2011	896.3	122.4	100.0	697.6	126.5	77.8	198.7	109.9	22.2
2012	1,033.3	115.3	100.0	796.9	114.2	77.1	236.4	119.0	22.9
2013	1,112.9	107.7	100.0	848.5	106.5	76.2	264.4	111.8	23.8
2014	1,369.8	123.1	100.0	1,042.1	122.8	76.1	327.7	124.0	23.9
2015	1,653.7	120.7	100.0	1,246.6	119.6	75.4	407.1	124.2	24.6
2016	1,776.7	107.4	100.0	1,346.4	108.0	75.8	430.3	105.7	24.2
2017	2,009.0	113.1	100.0	1,535.0	114.0	76.4	473.9	110.2	23.6
2018	2,379.6	118.4	100.0	1,794.6	116.9	75.4	584.9	123.4	24.6
2019	2,615.4	109.9	100.0	1,890.0	105.3	72.3	725.5	124.0	27.7
2020	2,350.6	89.9	100.0	1,688.0	89.3	71.8	662.7	91.3	28.2
2021	2,732.7	116.3	100.0	2,019.0	119.6	73.9	713.6	107.7	26.1
2022	4,270.9	156.3	100.0	3,225.2	159.7	75.5	1,045.8	146.5	24.5
Annually on average	168.19	-	-	124.56	-	-	43.63	-	-
R	0.88	-	-	0.87	-	-	0.88	-	-

Source: own study based on Eurostat data

to the previous year by 14.5% (from EUR 545.5 to EUR 466.2 million) and 10.7% (from EUR 1,890 to EUR 1,688 million). However, in the case of third countries, the decrease in the value of exports took place in 2008 and 2020. The decrease in the value of exports in these years amounted to 26.1% and 8.7%, respectively.

The decrease in the value of exports to third countries in 2008 was caused to a large extent by the embargo imposed by Russia, among others, for Polish poultry. However, the significant decrease in the results for 2020 was caused by, among others, economic crises in the world and individual countries. The epidemiological turmoil has had a negative impact on national agricultural markets, including Poland, as the development of the coronavirus pandemic has caused [Błaszczuk-Zawiła 2014]:

– logistical restrictions in international trade,
– reducing internal demand for poultry from the HoReCa sector,
– high poultry production and lack of sales markets, which affected prices,
– the prolonged threat of bird flu in some years and the resulting restrictions also significantly impacted the possibility of exporting poultry from Poland.

Despite an apparent reduction in the total export volume for 2020 by 10.1% compared to 2019, Poland remains the leading exporter of poultry in the world in terms of its value. Based on the tabular data, it can be concluded that during the monitored period, EU member states maintained the position of the primary foreign recipient of Polish poultry. The highest share of exports of poultry sector products to EU countries was recorded in 2008 – 83.7%, while the lowest was in 2004 – almost 70%, whereas in 2003, this share was 50.9%. In the analyzed period, the percentage of Polish poultry exports to countries outside the EU did not exceed 31%.

Table 2 presents the largest importers of Polish poultry. The most important importer is Germany, which in 2003 imported Polish poultry products for the amount of EUR 135.4 million, which constituted almost 72% of Polish exports of this sector to the countries of the then EU. Over 20 years, the value of exports to Germany has increased more than 7 times, reaching the value of almost one billion euros in 2022. The most significant increase in the value of Polish exports to Germany occurred in 2022, when its value increased by almost 70% compared to 2021 (from EUR 589.2 to EUR 998.4 million). During the period under study, there were also years when declines in the value of poultry meat exports to Germany were recorded. This situation occurred in 2009 and decreased over 30% compared to the previous year. Great Britain, France, and the Netherlands are also essential importers of Polish poultry. In 2003, Poland exported products worth EUR 36.3 million, EUR 7.1 million, and EUR 3.6 million to these countries. After 20 years, the value of Polish exports to these countries increased to EUR 609.8 million (almost 16 times), EUR 495.9 million (nearly 69 times), and EUR 436.1 million (over 121 times).

Table 2. The largest importers of Polish poultry as part of intra-EU exchange

Year	Germany		Great Britain		France		Netherlands		Czechia		Other EU countries	
	Import											
	million EUR	%	million EUR	%	million EUR	%	million EUR	%	million EUR	%	million EUR	%
2003	135.4	71.8	36.3	19.2	7.1	3.8	3.6	1.9	0.3	-	6.1	3.3
2004	136.9	64.5	43.9	20.7	6.6	3.1	3.5	1.7	2.8	1.3	18.4	8.7
2005	189.2	55.1	65.1	19.0	15.5	4.5	5.7	1.6	14.2	4.1	53.9	15.7
2006	197.2	50.0	74.0	18.7	23.6	6.0	14.6	3.7	28.2	7.1	56.9	14.5
2007	256.8	46.4	108.2	19.5	30.2	5.4	20.3	3.7	37.6	6.8	100.7	18.2
2008	273.2	44.4	69.2	11.2	41.4	6.7	48.1	7.8	54.6	8.9	129.3	21.0
2009	190.7	35.3	71.9	13.3	37.2	6.9	38.8	7.2	74.4	13.8	127.9	23.5
2010	224.6	34.6	106.7	16.4	42.7	6.6	46.0	7.1	71.7	11.0	158.1	24.3
2011	286.6	34.7	125.5	15.2	58.8	7.1	59.0	7.1	85.9	10.4	210.0	25.5
2012	284.4	31.3	133.1	14.6	77.3	8.5	66.3	7.3	90.0	9.9	258.0	28.4
2013	293.2	29.4	148.1	14.9	87.4	8.8	70.9	7.1	100.7	10.1	296.9	29.7
2014	340.7	28.1	182.1	15.0	104.1	8.6	100.2	8.3	110.6	9.1	374.3	30.9
2015	386.7	26.6	221.8	15.3	133.7	9.2	106.6	7.3	118.6	8.2	484.4	33.4
2016	407.0	27.4	215.2	14.5	140.0	9.4	103.3	6.9	116.5	7.8	504.5	34.0
2017	428.4	25.7	238.6	14.3	177.7	10.7	141.9	8.5	131.9	7.9	547.1	32.9
2018	559.7	26.4	314.9	14.9	203.4	9.6	191.7	9.0	163.5	7.7	685.9	32.4
2019	567.0	25.1	352.3	15.6	206.4	9.1	197.2	8.7	158.4	7.0	781.2	34.5
2020	509.2	25.2	323.2	16.0	216.8	10.7	170.5	8.4	144.0	7.1	655.1	32.6
2021	589.2	29.1	379.5	-	292.9	14.4	269.7	13.3	149.2	7.4	726.7	35.8
2022	998.4	30.1	609.8	-	495.9	15.0	436.1	13.2	212.3	6.4	1,172.4	35.3
Change 2003-2022	6.4	-	15.8	-	68.8	-	120.6	-	718.5	-	169.0	-

The "–" sign means that the countries were not part of the EU

Source: own study based on Eurostat data

The greatest dynamics of changes occurred in the case of exports of poultry sector products to Czechia. During the period under review, it increased over 707 times, reaching a value of over EUR 212 million in 2022. In the case of other EU countries, the value of Polish exports with these products increased successively. In the years between 2023 and 2022, its value increased 192 times (from EUR 6.1 million in 2003 to EUR 1,172.4 million in 2022). In 2022, four Community countries (i.e., Germany, France, the Netherlands and Czechia) were responsible for importing almost 65% of all Polish exports to intra-EU countries.

Analyzing the structure of the value of exports to EU countries, it can be observed that it has changed significantly in the period under study. In 2003, Germany had the largest shares in this structure, followed by Great Britain. These two countries imported 91% of Polish poultry sector exports to intra-EU countries, and adding the other two importers (i.e., France and the Netherlands), the share was almost 97%. Poland's accession to the EU in 2004 facilitated the diversification of exports to other Community markets. In 2022, Germany's share decreased to 30.1%, while that of the remaining largest importers (France, the Netherlands and Czechia) decreased to 34.6%. However, it increased (although it still accounts for 1/3 of the four largest EU importers) of the remaining twenty-four Community countries, with the share of individual countries not exceeding 1% in most cases.

ASSESSMENT OF POLAND'S COMPETITIVE POSITION IN TRADE OF POULTRY SECTOR PRODUCTS

As a result of the dynamic increase in poultry exports after Poland acceded to the EU, the trade balance was positive throughout the period under study and had a growing tendency (Table 3). Growing balance values occurred both in trade with countries inside and outside the EU. The largest increase in the trade balance in the years 2003-2022 (year to year) was recorded in 2022, when the total value of the balance increased by EUR 1,529.6 million, including in exchange with EU countries by EUR 1,215.5 million and with countries outside EU by EUR 314.1 million. The most significant declines (year-on-year) were recorded in 2020 in trade in general (by EUR 211 million) and with EU countries (by EUR 179.1 million). With third countries, the decrease in the value of the balance (year-on-year) occurred in 2008 and 2020, by EUR 32.4 million and EUR 31.8 million, respectively.

The TC index for the entire research period had very high values, significantly exceeding 1. It fluctuated between 3.7 and 37.1, indicating high coverage of domestic imports by exports. Much higher indicator values were recorded in the case of exchange with EU countries. In 2022, its value was 44.6, which indicates a very high degree of coverage of imports (year to year, amounting to 19.9) with exports. However, it is worth noting that the overall TC index decreased in some periods, including 2004, 2009, 2013, 2016, 2018, and 2021. In the case of trade with EU countries, declines occurred in 2004, 2009, 2012, 2014-2016, 2019, and 2021, while with non-EU countries in 2004, 2013, 2016, 2018, and 2021-2022. The largest decrease in the value of this indicator occurred in 2016 in non-EU countries, when the value of the TC indicator decreased by 17.2 during the year (from 49.4 to 32.2). This means a significant reduction (although still high) of Poland's comparative advantage in trade in poultry products with these countries.

Table 3. Balance of Polish foreign trade in poultry sector products and import-export coverage ratio (TC)

Years	Balance [million EUR]					
	total	change every year	intra-EU	change every year	extra-EU	change every year
2003	196.5	-	143.4	-	53.0	-
2004	179.4	-17.1	125.1	-18.4	54.3	1.3
2005	316.1	136.7	230.6	105.5	85.5	31.2
2006	374.4	58.3	281.0	50.4	93.4	7.9
2007	537.1	162.7	405.8	124.8	131.3	37.9
2008	609.8	72.7	510.8	105.1	98.9	-32.4
2009	543.8	-65.9	431.9	-78.9	111.9	13.0
2010	696.4	152.6	521.4	89.5	175.0	63.1
2011	861.3	164.9	668.3	146.9	193.0	18.0
2012	993.0	131.7	762.7	94.5	230.3	37.2
2013	1,068.7	75.7	815.7	53.0	252.9	22.7
2014	1,315.7	247.1	1,000.1	184.3	315.7	62.7
2015	1,590.4	274.7	1,191.6	191.5	398.8	83.2
2016	1,694.0	103.6	1,277.1	85.5	416.9	18.1
2017	1,919.9	225.9	1,466.9	189.8	453.0	36.0
2018	2,256.0	336.1	1,724.9	258.0	531.1	78.1
2019	2,490.4	234.4	1,815.3	90.4	675.1	144.0
2020	2,279.4	-211.0	1,636.1	-179.1	643.3	-31.8
2021	2,626.1	346.7	1,937.3	301.2	688.8	45.5
2022	4,155.7	1,529.6	3,152.8	1,215.5	1,002.9	314.1

Table 3. Cont.

Years	TC indicator					
	total	change every year	intra-EU	change every year	extra-EU	change every year
2003	12.4	-	15.5	-	8.2	-
2004	3.7	-8.7	3.7	-11.8	3.8	-4.4
2005	6.0	2.3	5.6	1.9	7.7	3.9
2006	7.9	1.9	7.4	1.9	9.8	2.1
2007	10.8	2.9	10.6	3.2	11.5	1.7
2008	15.5	4.7	15.8	5.1	14.3	2.8
2009	14.3	-1.2	13.6	-2.2	17.9	3.6
2010	20.4	6.2	18.3	4.7	31.5	13.7
2011	25.6	5.2	23.8	5.4	35.3	3.8
2012	25.6	0.0	23.3	-0.4	38.3	3.0
2013	25.2	-0.4	25.9	2.6	23.1	-15.2
2014	25.3	0.1	24.8	-1.1	27.2	4.1
2015	26.2	0.8	22.7	-2.1	49.4	22.2
2016	21.5	-4.7	19.4	-3.2	32.2	-17.2
2017	22.5	1.1	22.5	3.1	22.6	-9.6
2018	19.2	-3.3	25.7	3.2	10.9	-11.7
2019	20.9	1.7	25.3	-0.4	14.4	3.5
2020	33.0	12.1	32.6	7.3	34.2	19.8
2021	25.6	-7.4	24.7	-7.9	28.7	-5.5
2022	37.1	11.4	44.6	19.9	24.4	-4.3

Source: own study based on Eurostat data

Polish poultry exports within the intra-EU trade were characterized by a decreasing concentration level and an increasing level of competition in these markets (Table 4). After 2003, a downward trend in the HHI index has been observed. This means that Poland initially exported its poultry products to only a few EU countries. However, in subsequent years, especially since 2006, the value of the standardized HHI index did not exceed 0.30, which indicates that registered exports to the EU market were increasingly fragmented. Export diversification is a positive phenomenon because it gives the Polish poultry sector stable revenues despite emerging turbulence. The renewed increase in the HHI in 2021 and 2022 was mainly due to Great Britain leaving the EU and, therefore, not considering it when calculating the indicator.

Table 4. Indicators of export concentration (HII) and export specialization (SI) of Poland in trade in section 0207 products with EU member states between 2003 and 2022

Importers	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	HHI index									
	0.56	0.46	0.35	0.30	0.27	0.23	0.18	0.17	0.17	0.15
	SI indicator									
Germany	2.0	1.9	1.8	1.7	1.7	1.7	1.2	1.2	1.2	1.1
Czechia	0.0	0.3	0.8	1.2	1.2	1.5	2.2	1.7	1.5	1.4
France	0.5	0.5	0.7	0.9	0.8	0.9	0.9	0.9	1.1	1.3
Great Britain	3.4	3.4	3.1	3.1	3.1	1.8	1.9	2.3	2.2	2.0
Netherlands	0.4	0.3	0.4	0.9	0.9	1.8	1.6	1.5	1.5	1.5
Italy	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Slovakia	0.0	0.6	1.6	1.4	0.9	1.0	1.6	1.8	1.8	1.9
Sweden	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spain	0.0	0.3	0.4	0.1	0.4	0.6	0.5	0.7	1.5	2.0
Hungary	0.0	0.2	0.8	0.2	0.1	0.3	0.3	0.3	0.5	0.7
Belgium	0.2	0.2	0.6	0.7	0.8	1.0	1.1	0.9	0.9	1.1
Austria	0.2	0.2	0.7	1.5	1.9	1.5	1.2	1.1	1.2	0.7
Romania	0.1	0.1	0.1	0.1	0.3	0.6	1.1	0.8	0.5	0.9
Lithuania	0.0	0.3	1.3	0.6	1.7	1.3	2.3	2.1	1.5	1.6
Denmark	0.2	0.6	0.9	1.1	0.9	0.8	0.8	0.7	0.9	0.9
Finland	0.0	0.1	0.0	0.0	0.2	0.3	0.3	0.2	0.1	0.0
Latvia	0.0	0.0	0.1	0.2	0.6	1.1	1.5	0.9	0.9	0.9
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.6	2.0	2.1
Bulgaria	0.1	0.2	0.0	0.3	0.3	1.2	2.1	4.4	5.2	7.5
Estonia	0.0	0.2	0.3	0.6	0.5	0.4	0.5	0.5	0.3	0.4
Slovenia	0.2	0.2	0.3	0.8	0.6	0.7	0.9	0.4	0.4	0.3
Greece	0.0	0.2	0.0	0.1	0.0	0.3	0.2	0.2	0.1	0.5
Croatia	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
Ireland	0.0	0.9	0.6	1.1	2.0	2.5	3.7	3.9	4.1	3.5
Luxembourg	0.0	0.0	0.0	0.1	0.6	0.6	0.4	0.0	0.0	0.0
Cyprus	0.0	0.7	2.0	2.2	0.3	2.4	0.4	1.3	0.0	0.8
Malta	0.0	3.9	11.8	7.2	6.6	5.2	7.4	6.2	1.8	3.7

Table 4. Cont.

Importers	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	HHI index									
	0.14	0.13	0.12	0.13	0.12	0.12	0.12	0.12	0.14	0.15
	SI indicator									
Germany	1.1	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Czechia	1.5	1.3	1.1	1.1	1.1	1.1	0.9	1.0	0.9	0.7
France	1.4	1.4	1.5	1.5	1.7	1.6	1.4	1.7	1.9	2.0
Great Britain	2.0	2.1	2.0	1.9	2.0	2.2	2.2	2.4	2.8	2.9
Netherlands	1.6	1.8	1.5	1.4	1.8	1.8	1.7	1.7	2.3	2.2
Italy	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4
Slovakia	1.6	1.4	1.5	2.0	1.2	1.6	1.6	1.5	1.2	0.9
Sweden	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2
Spain	1.0	0.9	1.4	1.2	1.4	1.3	1.6	1.8	1.5	1.8
Hungary	0.8	0.8	0.6	0.9	0.9	0.9	0.8	0.8	0.9	0.7
Belgium	1.0	1.2	1.3	1.1	1.5	1.5	1.4	1.1	1.2	1.2
Austria	0.9	0.8	0.9	0.7	0.9	0.9	0.9	0.7	0.6	0.6
Romania	0.8	1.1	1.1	1.0	0.9	0.7	0.7	1.2	1.1	0.8
Lithuania	1.9	1.7	1.9	2.0	1.4	1.4	1.4	1.5	1.3	1.1
Denmark	0.9	0.9	0.9	1.0	0.8	0.8	0.8	0.6	0.6	0.8
Finland	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1
Latvia	1.3	1.5	0.7	1.1	2.0	1.6	1.4	1.4	1.6	1.6
Portugal	2.7	2.7	3.5	2.2	1.4	0.9	0.8	0.6	0.2	0.4
Bulgaria	6.8	6.3	5.1	4.6	5.2	4.3	4.1	2.3	1.1	1.0
Estonia	0.7	0.6	0.7	0.9	0.9	0.9	0.9	1.3	1.2	1.1
Slovenia	0.5	0.7	0.8	0.6	0.9	1.0	0.9	0.9	0.7	0.7
Greece	1.0	0.8	1.1	1.4	0.9	1.4	2.1	1.9	1.7	2.1
Croatia	0.9	2.9	2.3	1.9	1.3	1.4	0.8	0.5	0.4	0.4
Ireland	5.1	5.8	5.8	5.3	5.2	4.5	4.5	3.7	4.4	5.5
Luxembourg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Cyprus	0.5	0.4	1.2	2.1	3.5	2.5	3.1	1.9	1.9	2.1
Malta	3.3	2.5	4.0	7.0	5.9	4.3	7.0	6.0	3.4	3.1

Source: own study based on Eurostat data

In order to obtain information related to exports to individual EU countries, the SI index was calculated (Table 4). The analysis of the value of this measure shows the diversified competitiveness of Polish producers, as well as its fluctuations between 2003 and 2022.

In 2003, relative specialization in trade in poultry sector products was demonstrated only in two of the analyzed countries (Germany and Great Britain). Poland's accession to the EU opened the way to greater diversification of exports of poultry products to this market. In 2020, Poland had relative specialization in the field of trade in poultry sector products in as many as sixteen markets. In 2022, their number decreased to thirteen Community countries (loss of advantage over Romania, Slovakia and Czechia). The obtained SI index values show that in most of the years discussed, Poland had an apparent specialization in exporting poultry sector products to Great Britain, Bulgaria, Ireland, and Malta markets. The highest values of the indicator, above 11, were recorded in 2005 in the case of Malta (SI = 11.8). High values of the indicator, and therefore a high degree of specialization, were also achieved by poultry producers in Poland in 2012 in the case of Bulgaria and in 2014-2015 in the case of Ireland (SI = 5.8).

The high degree of specialization and competitiveness in exports of poultry products on the discussed markets is essential not only for the industry but also for the entire export due to the significant share of these countries in its structure. However, when analyzing trends, a decline or stagnation of the SI index in trade with most EU countries is clearly visible. There was a downward trend in the value of SI with countries such as the UK, Bulgaria, and Malta and a stagnation in trade cooperation with the remaining eight countries. However, an upward trend was visible in relation to Ireland.

SUMMARY

The presented data indicate that Poland's accession to the EU enabled the dynamic development of poultry production in Poland. In 2003-2022, an increase in the value of exports was observed, both to countries within the EU and third countries. The first visible effect of Poland's entry into the common EU market was undoubtedly an increase in the scale of international exchange, both in terms of import and export. Still, there were also significant changes in its structure. The development of international business and market opening also influenced changes in the production and breeding of poultry, including nutrition and quality standards of sold animals. Changes in the trade balance have a decisive impact on the economic situation and, therefore, the development or limitation of poultry farming.

Poultry producers have achieved a favorable position in the EU market over the years. Thanks to ample export opportunities, it is currently the most dynamically developing meat market in Poland. The main importers of Polish poultry are EU countries. Poland has a comparative advantage mainly in the case of the EU market, which is confirmed by the increasing values of the TC and SI indicators and the decreasing HHI indicator. The obtained SI index values indicate that Poland had an apparent specialization in the export of poultry sector products to the markets of Great Britain, Bulgaria, Ireland, and Malta. The downward trend in the HHI index means export diversification, which is a positive phenomenon as it provides the Polish poultry sector with stable revenues despite emerging turbulence. Despite the substantial price advantages of Polish products and the favorable structure of comparative advantage indexes, poultry producers in Poland should constantly monitor the market environment. The changing climate, including the pandemic, the war in Ukraine, embargoes, temporary export bans caused by, among others, emerging outbreaks of bird flu, and an increase in production costs may result in changes in the values of other competitiveness indicators.

Indeed, one of the reasons for the growing interest in Polish poultry among importers is its competitive price compared to other producers in the EU. However, poultry producers in Poland should keep an eye on the changing situation in this market, especially in Ukraine, which is increasing the export of its poultry products to the European market. Attractively priced products offered by Ukraine, Brazil, and Thailand may hurt Polish exports of these products in the coming years. One of the ways to compete in the EU market may be the efficient use of non-price competition instruments, e.g., efficient distribution systems and continuous improvement of product quality. Unfortunately, recently, there have been events that may have a negative impact on the opinion of poultry products from Poland.

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MIĘDZYNARODOWA KONKURENCYJNOŚĆ SEKTORA DROBIARSKIEGO W POLSCE W OSTATNICH 20 LATACH

Słowa kluczowe: drób, import, eksport, handel międzynarodowy, konkurencyjność

ABSTRAKT. Celem badań była ocena zmian, które zaszły w polskim eksporcie i imporcie drobiu oraz konkurencyjności branży. Analiza dotyczyła lat 2003-2022 i była przeprowadzona na podstawie danych Eurostatu. Analizie poddano m.in. wartość i saldo obrotów, strukturę geograficzną oraz wybrane wskaźniki konkurencyjności. Głównym importerem polskiego drobiu są kraje Unii Europejskiej. Polska ma przewagę komparatywną przede wszystkim w przypadku rynku unijnego, co potwierdzają rosnące wartości wskaźników TC, SI oraz malejący wskaźnik HHI. Uzyskane wartości wskaźnika SI pokazują, że Polska miała szczególnie wyraźną specjalizację w eksporcie produktów sektora drobiarskiego na rynek Wielkiej Brytanii, Bułgarii, Irlandii i Malty. Tendencja zniżkowa indeksu HHI oznacza dywersyfikację eksportu, co jest pozytywnym zjawiskiem, gdyż zapewnia polskiemu sektorowi drobiarskiemu stabilne przychody, przy pojawiających się turbulencjach. Przyczyną tak dużego wzrostu eksportu do krajów unijnych było w dużej mierze zniesienie ceł, atrakcyjne ceny i dobra jakość polskich produktów. Pomimo silnych przewag cenowych polskich produktów i korzystnej struktury indeksów przewag komparatywnych, producenci drobiu w Polsce powinni ciągle monitorować otoczenie rynkowe. Atrakcyjne cenowo produkty oferowane przez Ukrainę, ale również Brazylię i Tajlandię, mogą w kolejnych latach odbić się niekorzystnie na polskim eksporcie tych produktów.

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