International Competitive Position of the Polish Selected Food Markets

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Abstract:

Purpose: The aim of the article was to evaluate the current situation and changes of the international competitive position of selected Polish food markets.

Design/Methodology/Approach: To quantify the evaluation of competitiveness, ratio analysis was used. Indicators of the Revealed Comparative Advantage (RCA), Lafaya Index (LFI) and Specialization Indicator (SI) were calculated. The research covers the years 2004-2018.

Findings: The research of the foreign trade of polish agri-food sector showed that its role in the analyzed period in the Polish economy is becoming stronger. The main food industries in export are meat and processed meat, tobacco and cigarettes, dairy products, and fish and fish products. The research results enable us to identify international specializations of the Polish agri-food branches in the analyzed markets, namely the tobacco and meat and fish processing industries in the EU-15 market, meat and offal in the EU-13 market, and the dairy industry in markets outside the EU.

Practical Implications: Based on the study and research on the subject, suggestions and recommendations may be formulated for the public administration and food industry.

Originality/Value: The research results indicate long-term changes in the potential and competitive position of the industry on the international market. Therefore study serves a basis for making future decisions by directors and managers of firms in the internationalization process of agri-food sector in Poland.

Keywords: International competitive position, food market, Poland.

JEL codes: F15, L16, Q17.

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1. Introduction

The agricultural and food processing sector is the largest manufacturing sector in the EU and one of the largest in terms of the economic output and employment (Baregheh *et al.*, 2012). In addition, it shows a uniquely dynamic growth (Juchniewicz and Łukiewska, 2015). The literature highlights a strong relationship between the level of competitiveness of this sector and its international position (Buturac *et al.*, 2017).

The international competitiveness of the food industry has been analyzed broadly in the recent research papers, especially with respect to the new economies in the European Union (the EU), where agriculture and related branches of the food industry compose a significant part of the whole national economy (Buturak *et al.*, 2017). The international competitiveness of food sectors in European countries has gained importance, particularly since the European common market was established, private companies rapidly spread their activity on international markets and the food industry underwent an accelerated concentration process (Drescher and Maurer, 1999; Gorton and Davidova, 2001; Frohberg and Hartman, 1997).

Considerable restraint of trade in agri-food products which appeared during the economic crisis led to a rapidly declining global demand for these products. How much the food trade actually decreased depended on the structural characteristics of production sectors, the extent to which they specialized in the trade of certain products, and on their integration with the world market. Crescimanno *et al.* (2014), based on the comparison they made of all trade flows and the trade flows of agri-food products, concluded that the mentioned sector responded differently to the economic crisis.

The leaders in the international trade of agricultural and food products in the world, providing nearly 50% of its global worth, are the EU countries and the USA (Pawlak and Kita, 2017). However, their role in the world export is slightly diminishing to the advantage of such countries as China and Brazil. The EU as a whole entity does not have comparative advantages in the trade of food products over countries that do not belong to the European Union (Juchniewicz and Łukiewska, 2015). Wijnands and Verhoog (2016) also confirm that the EU competitiveness in food production is low in comparison with the USA, Australia, Brazil and Canada. The EU achieves relatively good results in terms of trade indicators (changes in shares in the market and relative net trade advantage) but relatively poor results in terms of economic indicators (changes in labour efficiency, added value and share of added value in industry).

An important element in creating the international competitiveness of the Polish economy is the trade of agricultural and food products, one reason being the fact that the Polish agri-food sector is increasingly more strongly tied with external markets (Gornowicz, 2008; Wierzejski, 2010). To a large extent, this is the consequence of

more intensive changes in international relations, including progressing globalization and regional integration (Szajner and Szczepaniak, 2019), as well as bilateral agreements (Wang and Pawlak, 2019).

The recovery of the domestic production in Poland by increasing the volume of exported products was stimulated by the lifting of trade barriers with the EU states after Poland's accession to the EU. However, the common market also meant tough competition, which forced producers to take care of the quality of products and to improve production processes through technological progress. The EU standard adjustment processes raised the level of industrialization in the agri-food sector and caused its higher concentration (Urban *et al*., 2010). In the pre- and post-accession period, there was a larger increase in the average value of imported animal rather than plant products, while the values of exported plant and animal products were similar. A more beneficial trade exchange balance in the animal product market determined the higher competitiveness of this market, measured by the relative trade advantage (RTA) index (Czakowski, 2017). A barrier to the further growth of this sector is seen in the limited possibilities of increasing the demand in the domestic market. Sales on external markets will therefore continue to play a pivotal role in the development of the agricultural and food sector (Szajner and Szczepaniak, 2019).

It is estimated that the global demand for food will have increased by half before 2015, stimulated by the dynamic growth of the human population in the world. The future population growth will concentrate disproportionally in countries severely lacking in food security. Despite the generally rapid development of agricultural trade, most of consumed food in many countries originates from abroad. In numerous countries, the net import of food approximates 0-20% of the domestic food supply (FAO, The future of food and agriculture, Rome 2018).

In view of the ongoing globalization and internationalization processes in the world economy it is necessary to analyze and evaluate competitiveness on international markets on all levels (Adamowicz, 1999; Juchniewicz and Łukiewska, 2015). After all, among the key factors involved in the economic growth are the high competitiveness of economic sectors on the international arena (Czakowski, 2017) and participation in international trade (Szczubełek, 2019).

The main aim of this study has been to evaluate the level and dynamics of changes in the international position of selected branches of the agri-food sector in Poland in the context of its role in the Polish economy and its internationalization.

Our analysis of the foreign trade and the international competitive position of Poland was based on available public statistical data. The research employed the dynamics indicators and such measures as the LFI, RCA and SI. The choice of these indices enabled us to make an assessment of the selected agri-food branches in terms of export-import relations and their comparative advantages in the international market. The branches of the agri-food industry selected for this study, i.e. meat, tobacco,

dairy and fish industries, are characterized by their high share in the export of food products in total. The time period analyzed spanned the years 2004-2017, that is the entire period until then of Poland being an EU member state, in particular being a participant of the Common Agricultural Policy and the EU trade policy.

2. Literature Review

Competitiveness is defined in broad and changing terms, depending on a school of thought and a way its definition is being coined. However, it is generally agreed that competitiveness is a complex notion, covering many aspects. This explains why an assessment of competitiveness should rely on several elements (Latruffe, 2010). Sarker and Ratnaseva (2014) warn us of some essential misunderstanding of the specific meaning of competitiveness, its scope and the way in which it can be measured. Consequently, results of analyses of competitiveness can be open to a variety of interpretations.

Difficulties in defining competitiveness as a term stem from the fact that this concept is analyzed on macro-, meso- and micro-levels (Abbott and Bredahl, 2019). Furthermore, the notion of competitiveness is referred to various products and services, companies and agricultural farms, branches or sectors in economy, regions, countries or international trade blocks, etc., which apparently makes it impossible to coin a single, common definition of competitiveness. Research into competitiveness should employ multi-dimensional synthetic indices, as the concept of competitiveness concerns many aspects and areas of man's activity. A significant problem in studies on competitiveness arises from the limited comparability of results due to different variables (features) used by researchers (Siudek and Zawojska, 2014). Pawlak and Poczta (2011) underline that competitiveness on the meso-economic level (competitiveness of sectors, branches or division of national economy, or of regions) has a specific character because of the presence of independent entities such as companies and certain characteristics of each branch.

Analyses of competitiveness on the level of industrial branches in international markets take advantage of the broad approaches developed by Trabold (1995), Porter (1990) and Fagerberg (1988) regarding the international competitiveness of industry. The international competitiveness of countries (nations) defined by Trabold (1995) is the ability to sell (develop export of goods), attract FDI (active participation and investments by foreign enterprises) and to adapt oneself (ability to make rapid changes) –this all leads to attaining an ability to earn profits (an increase in GDP per capita).

Kim and Marion (1997) define competitiveness as 'the sustained ability of a nation's industries or firms to compete with foreign counterparts in foreign markets as well as domestic markets under conditions of free trade.' Sarker and Ratnasena (2014) assert that competitiveness can occur nationwide, between sectors outside the country, or internationally. Thus, competitiveness can be a relative measure. Beside this general

assertion, there is no definition of competitiveness or the way to measure it that would be widely accepted. However, a consensus is gradually reached as to which indicators can be employed to measure competitiveness, taking into consideration its definition adopted by Carraresi and Banterle (2008), or by Latruffe (2010). Should competitiveness be seen as the results achieved by a sector in the country in comparison with results of this sector in another country, then the measuring indicator would focus on trade success.

The measure of competitiveness perceived as a process or potential should rather concentrate on the cost leadership or non-price dominance of firms. According to Benterle (2005), evaluation of competitiveness is based on indicators that analyze the competitiveness of particular sectors from the standpoint of gaining a comparative advantage. From this point of view, sources of competitiveness are associated with the formation of factors ensuring advantage rather than with the accessibility of resources.

Traill and da Silva (1996) underline that a country's competitiveness is usually evaluated on the basis of a trade measure, such as the revealed comparative advantage. Nowadays, however, other forms of international engagement of companies are becoming more widespread. These include licensing, franchising, joint ventures and strategic alliances as well as international production.

When defining the competitiveness of the agri-food industrial sector, Pitts and Lagnevik (1998) rely on the definition proposed by Martin *et al.* (1991) and emphasize that a competitive industry has the ability to gain and maintain market shares in the domestic and/or international markets. An analysis of competitiveness also needs to take into account significant relationships between competitiveness in the domestic (internal competitiveness) and foreign (external competitiveness) markets.

The internal competitiveness of the agri-food sector comprises the ability to locate domestic companies on foreign markets and to successfully promote export of goods (Nosecka, 2013; Szczepaniak and Tereszczuk, 2016; Woś, 2001). However, a prerequisite of successful external competitiveness is to gain an internal competitive position, manifested by one's economic standing relative to all other branches of the national economy at a given time, and by one's strength and ability to improve the position relative to other, in this case non-agricultural branches of the country's economy (Woś, 2001).

External competitiveness is most often assessed according to the ex-post competitive position, defined with the help of quantitative and cost-price indices. Quantitative indices include share in global trade, foreign trade turnover balance, export orientation index, import penetration index, trade coverage index, and revealed comparative advantage index. The measures of ex-post international competitive position of the cost-price type are terms of trade, unit cost and unit price indices,

relative price indices, and real exchange rate. Assessments regarding trends in costs and prices most often employ the terms of trade as an indicator (Nosecka, 2013).

Over the past two decades, the global agricultural trade has been developing dynamically. The chief stimulating factors were the development of transportation and communication infrastructure, food marketing and distribution systems, growing wealth of societies and convergence of consumption models in countries on different levels of economic development. Another significant contributor was the trade policy implemented by key players in international food markets, leading to the intensification and concentration of trade in highly developed countries (Pawlak and Kita, 2017). Trends in trade are mostly explained by economic cycles in global economy. An equally important role is played by trade policy and trade agreement, but the impact of these factors is more difficult to measure (FAO, The future of food and agriculture, Rome 2018).

Competition in the European (Carraresi and Banterle, 2008) and global (Robinson, 2018) food markets grew at the turn of the 20th and 21st centuries. General trends, such as globalization, technological progress, decrease in costs and evolution in consumption patterns are implicated as determinants of this process. In addition, Carraresi and Banterle (2008) draw attention to specific changes in Europe. These include the expansion of the European Union, harmonization of legal regulations concerning food, and lower technical barriers (Sobczyk, 2017; Wierzejski *et al.*, 2020; Wierzejski and Jakubowska, 2017).

Although it is generally accepted that shares in the sector markets in all countries are mostly shaped under the influence of technological factors, firms in each sector and in each country will differ considerably. Results of analyses carried out by Dosi *et al.* (2015) show that investments and patents in most sectors correlate positively with the probability of being an exporter and with the ability to gain and expand export. Decyk and Chrobocińska (2007) underline that growth trends in highly developed countries are the evidence that sustainable development can only be assured by building competitive advantage based on knowledge and innovation. This process can be stimulated, for example, by supporting the formation of clusters (Kuberska and Grzybowska-Brzezińska, 2020; Lagos and Curtis, 2008).

Since the early 21st century, the international commodities trade has been evolving, especially shifting from the trade of goods for direct consumption to the trade of intermediate goods, for further processing before consumption in the country or abroad. These changes are also becoming increasingly more evident in food economy and agri-food trade. The most competitive players in this sector operate in larger, international production and distribution networks (Fertö, 2018). As emphasized by Distefano *et al.* (2018), the expansion of global food markets brings about both advantages and disadvantages, such as the transfer of shocks within the global network of trade relations. To attain international food security, it is necessary to gain better understanding of how international trade chains connect countries

across the world through flows of import and export of food commodities (Torreggiani *et al.*, 2018).

3. Research Methodology

Having set the aim of this study as the presentation and evaluation of the international competitive position of selected branches in the agri-food sector in Poland, based on a review of the literature, it was decided to apply a few measures in order to achieve a broader spectrum of analysis. The following were chosen:

1) LFI – Lafay Index,
2) RCA – Revealed Comparative Advantage,
3) SI – Specialization Indicator.

Lafay Index is defined as:

$$LFI_j^i = \left(\frac{X_j^i - M_j^i}{X_j^i + M_j^i} - \frac{\sum_{j=1}^N (X_j^i - M_j^i)}{\sum_{j=1}^N (X_j^i + M_j^i)}\right) \frac{X_j^i + M_j^i}{\sum_{j=1}^N (X_j^i + M_j^i)} \, 100$$

where $x^i j$ and $m^i j$ represent exports and imports of "j" product realized by "i" country with the rest of the world (or selected partner country). "N" is the number of analyzed items (Burianová and Belová, 2012).

The RCA concept is expressed as:

RCA = ln [(x_{ij}:m_{ij})/(X_j:M_j)]
x_{ij} – export value of the *i*-th product groups of analyzed sector of the country *j*
m_{ij} – import value of the *i*-th product groups of analyzed sector of the country *j*
X_{ij} – total export value of country *j* (Simo *et al.*, 2016)
M_{ij} – total import value into the country *j*.

SI compares the share of product *i* in country *k* exports with that product's share of world or regional exports (*w*) (Pawlak *et al.,* 2010).

$$SI_k = \frac{X_{ik}}{X_k} : \frac{X_{iw}}{X_w}$$

The above choice of measures allows one to analyze international competitiveness from three perspectives:

1) export-import relations of the branches in question (LFI)
2) comparative advantages of these branches in export (RCA),
3) the share of export to a given market relative to global export (SI).

Table 1 presents the construction of these measures and their interpretation.

Table 1. *Description of measures applied to evaluate the international competitive position*

| Measure	Essence of the measure	Interpretation of the measure
LFI	The LFI export-import relations index determines the character of trade turnover of a given country in a specific group of products in a situation where the trade carried out by the analyzed sector was sustainable	LFI<0 means lack of competitive advantages of the evaluated country relative to foreign countries in the trade of a given group of products; equated with a trade deficit; LFI>0 means presence of competitive advantages of a given country over foreign countries in the trade of a given group of products; equated with trade surplus.
RCA	The RCA indicator specifies whether the share of a given group of products in export generated by a given country to a given market is higher/lower than the share of the same group of products in global export to this market.	RCA<1 means lack of revealed comparative advantages of a given country (relative to world competitors) in export of a given group of products to a given market; RCA>1 means the presence of revealed comparative advantages of a given country (over world competitors) in export of a given group of products to a specific market.
SI	The SI enables comparison of the share of a given group of products in export by a given country to a given market with the share of this group of products in export by this country to the world market	SI<1 means that a given country does not specialize in the export of a given group of products to a given group of countries (to a specific market); SI>1 means that a given country specializes in the export of a given group of products to a given group of countries (to a specific market)

Source: *Konkurencyjność… 2018.*

In order to evaluate the potential for further advancement of the position of Polish food products in foreign markets, the current level and dynamics of their competitiveness in three markets: EU-15, EU-13 and outside EU, were assessed. The assessment employed three measures, and the results were derived from the data pertaining to the period from 2004 to 2017. The analyses used the data published by Statistics Poland (GUS), National Support Centre for Agriculture (KOWR) and the Institute of Agriculture and Food Economics.

4. Research Results

The international position of the Polish agri-food sector has been steadily improving since Poland's access to the European Union, which manifests itself in both export and import values, and in the share of the analyzed sector in Poland's international trade (Figure 1).

In the time period 2004-2017, the international position of the Polish agri-food sector was strengthened visibly. The worth of exported goods increased by nearly six-fold, and that of imported good rose by five-fold. Over the entire time period analyzed, the trade balance was positive, peaking in 2017 to 8.5 billion euros. From the international perspective, this sector developed more rapidly than other sectors of the Polish economy. The contribution of the agri-food sector to the Polish export rose from 8.71% in 2004 to 13.15% in 2017. As for the import of agri-food products, the analogous percentages were 6.16% and 9.36%. This is the evidence of the progressing internationalization of this sector, its growing dependence on international markets and a significant impact on the entire Polish economy.

Figure 1. *Value of export and import of agri-food products and their share in total Polish foreign trade*
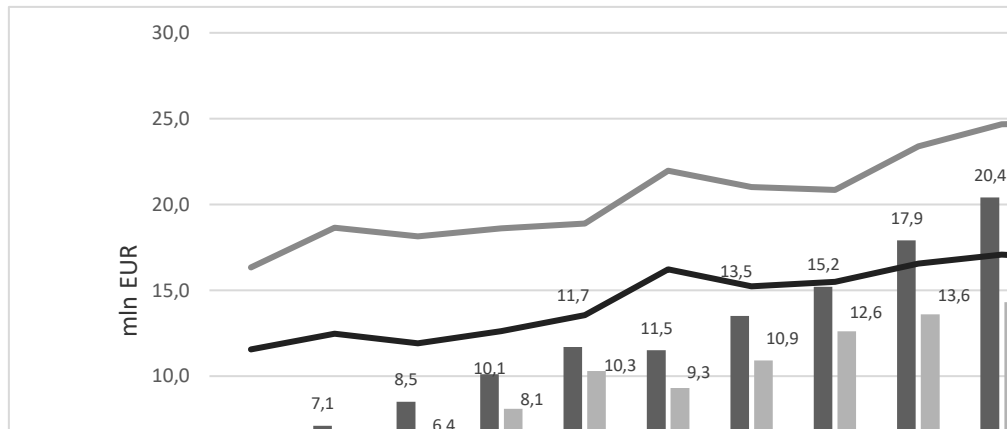
It needs to be highlighted that the internationalization of the Polish agri-food sector as a process, unlike the global trends (FAO. *The future* ... 2018), is clearly resistant to the cyclic nature of economy. An increase in trade was observed even during the global economic crisis in 2008-2013. It was only in 2009 that a slight decline (values expressed in euros) was noticed, but the positive trade balance still improved. These findings justify the claim that the international competitive position of the Polish agri-food sector is growing steadily, and the sector is an important anchor ensuring the stability of the Polish economy. However, studies completed by Crescimanno *et al.* (2014) implicate that the agri-food sector in particular EU countries and groups of EU countries experienced different consequences of that economic crisis, which proved that some countries are more sensitive to external shocks while others are more resistant to such circumstances.

Particular branches in the agri-food sector make different contribution to the process of its internationalization, and their role changed over the analyzed time period. Noteworthy is the growing role of processed products (processed foodstuffs) with a higher added value. In 2004, 56.5% of the export of agri-food products was composed of unprocessed plant and animal food produce (excluding fats and oils), while 42.7% corresponded to processed foods.

These proportions were reversed at the end of the analyzed period, namely, over half of the food sold abroad from Poland were then processed food products. The dominant product groups are meat and processed meat, tobacco and cigarettes, dairy products, and fish and fish products. In total, they now represent nearly half of the Polish export by the agri-food sector (tab. 2), which prompted us to submit them to further analyses regarding the international competitive position of the Polish agricultural and food sector.

Table 2. *Main groups of agri-food products in Polish export (value in mln EUR, share in %)*

Groups of agri-food products	2004		2017	
	value	share	value	share
Meat and processed meat	623	11,9%	6 173	22,2%
Tobacco and cigarettes	127	2,4%	2 990	10,8%
Dairy products	578	11,0%	2 158	7,8%
Fish and fish products	259	4,9%	1 879	6,8%

Source: *Own calculations based on Produkcja i handel… 2018; KOWR.*

The first step was to evaluate the competitiveness of these chosen agri-food industry branches in the international market in total. The LFI and RCA measures were employed (Table 3).

Table 3. *Competitiveness indicators*

Groups of agri-food products	2004		2017	
	LFI	RCA	LFI	RCA
Meat and offal	3,24	1,64	4,07	2,94
Processed meat and fish	1,65	1,62	1,97	2,62
Tobacco and cigarettes	-0,34	0,83	3,42	6,24
Dairy products	4,60	2,05	1,76	2,23
Fish and seafood	-1,46	0,77	-0,91	1,10

Source: *Own calculations based on*: *Konkurencyjność… 2018.*

The LFI, which illustrates the balance of foreign trade, demonstrated an increase in the four evaluated branches. It was only in the case of dairy products that the value of this index clearly decreased but did not fall to negative values, which indicates some weakening of the competitive advantage. As for the fish and fish products, the LFI was negative, meaning there was no competitive advantage in this branch, but it improved over the analyzed time period. The negative value is due to the fact that Poland is a net importer of fish, which are then processed in fish processing plants located in Poland, after which many of these products are exported.

Hence, the LFI values calculated for processed meat as well as processed fish are positive. The highest increase in the LFI was observed for the tobacco industry, which managed to build a strong competitive position on international markets over the analyzed years. The values of the RCA increased for all the tested branches, with the highest rise for the tobacco industry and the smallest – for the dairy industry. Values of the RCA higher than 1 mean the presence of comparative advantages in export, and the results mean that the contribution of all the analyzed groups of products into the export from Poland is higher than their share in the world export to international markets.

The research results concerning the level of Poland's overall competitive position in the agri-food sector encouraged us to carry out analyses of specific export markets. Poland's key business partner are the European Union member states, both the so-called 'old fifteen' and the ones from Central Europe. In 2017, 82% of the export of agri-food products from Poland reached the EU market. On the one hand, this situation can be viewed as normal considering the effects of economic integration with the EU; on the other hand, it gives rise to concerns about the risk of insufficient diversification of export.

The highest demand potential is ascribed to the 'old EU' market, which is substantiated by both the number of population and values of economic indicators. However, this is also a more mature market, where competition is tough, which makes it a relatively more difficult market for exploration. The LFI values at the end of the analyzed period were positive for all the tested branches, which implicates the occurrence of competitive advantages.

However, it is worth noticing that the LFI values were lower than in 2004 for such branches as meat and offal, dairy products, and fish and seafood. Thus, it can be concluded that intra-branch trade in these branches also developed on the import side. A positive finding was that the RCA increased for all the examined branches, same as in the general analysis, with the highest rise determined for the tobacco industry. Overall growth was also determined with the SI measure, which means that the share of export by the analyzed branches to the EU market was relatively higher than to the world market in total. The SI value of less than 1 was obtained only for the dairy industry, suggesting that Poland does not specialize in the export of this group of products to the EU-15 market (Table 4).

Table 4. *Competitiveness indicators on UE-15 market*

Groups of agri-food products	2004			2017		
	LFI	RCA	SI	LFI	RCA	SI
Meat and offal	2,41	1,22	0,98	1,56	2,69	1,01
Processed meat and fish	1,86	1,26	0,96	2,28	2,09	1,21
Tobacco and cigarettes	-0,41	0,22	0,35	5,32	6,26	1,23
Dairy products	4,08	1,02	0,80	0,64	1,23	0,88
Fish and seafood	2,00	0,87	1,24	1,29	1,27	1,40

Source: *Own calculations based on Konkurencyjność… 2018.*

Slightly different results were obtained from our analysis of the EU-13 market, that is a group of countries more similar to Poland in their socio-economic development (Table 5).

Table 5. *Competitiveness indicators on UE-15 market*

Groups of agri-food products	2004			2017		
	LFI	RCA	SI	LFI	RCA	SI
Meat and offal	2,03	1,52	0,72	5,58	3,14	1,15
Processed meat and fish	1,02	2,63	1,01	1,46	2,86	0,13
Tobacco and cigarettes	0,84	1,15	1,51	2,90	4,38	0,99
Dairy products	3,17	4,67	1,24	-0,09	2,83	1,42
Fish and seafood	0,05	0,52	0,33	0,13	0,33	0,27

Source: Own calculations based on: *Konkurencyjność… 2018.*

A significantly higher level of international competitiveness, compared to the EU-15 market, was determined for the group of products such as meat and offal. For the other branches, however, the determined values of the measures are significantly lower. In 2017, the SI exceeded 1 only for two groups of products: meat and offal, and dairy products. As for the fish and seafood products, all the three indicators reached values close to 0. The third group of target countries for the agri-food export from Poland, which are non-EU countries, is now responsible for around 18% of the Polish export sale. The results of this study also implicate that this is not the key market for Polish food producers (Table 6).

Table 6. *Wskaźniki konkurencyjności na rynku poza UE*

Groups of agri-food products	2004			2017		
	LFI	RCA	SI	LFI	RCA	SI
Meat and offal	5,20	2,57	1,28	7,87	2,63	0,85
Processed meat and fish	1,53	2,27	1,22	0,83	1,29	0,39
Tobacco and cigarettes	-0,13	2,98	2,92	-1,76	2,44	0,34
Dairy products	5,96	4,79	1,54	4,46	3,08	1,01
Fish and seafood	-7,16	0,50	0,63	-10,68	0,51	0,42

Source: Own calculations based on Konkurencyjność… 2018.

In the context of export-import relations, the LFI values reveal a trade deficit in two branches: tobacco and fish (excluding processed fish products). This is caused by a considerable supply import of these products for the Polish food industry, which is certainly a positive development. In turn, the groups of products like meat and dairy products recorded high, positive values of the LFI, which prove a positive trade balance. Moreover, the dairy industry is the only branch analyzed that recorded the SI value above 1. The reason could be the fact that export sales of products of this industry have played a more important role in the development over the recent years than the level and dynamics of domestic consumption (Wierzejski et al. 2020). When assessing changes in values of the RCA indicator, it becomes obvious that

exports outside the EU have lost importance since Poland's access to the European Union.

5. Conclusion

The analyses reported in this paper enabled us to draw conclusions concerning both the up-to-date results and predicted development pathways of the Polish agri-food sector. First and foremost, it needs to be emphasized that since the accession of Poland to the EU, the above sector has substantially strengthened its position in the Polish economy internationalization structure – its contribution to export from Poland increased from 8.71% to 13.46% over the analyzed period of time. The sustained and steadily growing positive balance of the Polish foreign trade in agricultural and food products, also during a recession in the world economy, justifies the conclusion that the agri-food sector in Poland is an important pillar and anchor in the development of Polish economy. The assessment of this sector divided into branches demonstrated that the meat industry, which makes the largest contribution to the internationalization of the Polish agri-food sector (a rise in the share from 11.9 to 22.25), improved its international competitive position in all the analyzed markets between 2004 and 2017.

In turn, the highest dynamics of the growth in the international competitive position in the European Union market was achieved by the tobacco industry. On the other hand, the dairy industry recorded a decline in its international position, in terms of both the share in the export of the whole sector and in values of some international competitive position indicators: LFI in total (from 4.60 to 1.76), RCA in the UE-13 markets (from 4.67 to 2.83) and outside the EU (from 4.79 to 3.08). It is worth underlining that values of these measures above 1 still indicate competitive advantages possessed by these industrial branches. The assessment of the geographical diversification demonstrated a relatively weaker international competitive position in markets outside the EU, especially expressed by the LFI, which means that these markets as a supply base, particularly of unprocessed food produce to be further processed in Poland. This mostly concerns the tobacco and the fish industries.

The research results enable us to identify international specializations of the Polish agri-food branches in the analyzed markets, namely the tobacco and meat and fish processing industries in the EU-15 market, meat and offal in the EU-13 market, and the dairy industry in markets outside the EU. The evaluation of the diversity of the international competitive advantage achieved by Poland's agri-food industry, concerning several branches and foreign markets, can serve as a basis for making future decisions by directors and managers of firms in the agri-food sector in Poland. It can also be a starting point for further research in this area.

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