Proceedings of the 2018 International Conference "ECONOMIC SCIENCE FOR RURAL DEVELOPMENT" No 49
Jelgava, LLU ESAF, 9 11 May 2018, pp. 222-231
DOI 10.22616/ESRD.2018.139

THE ECONOMIC SITUATION OF THE FOOD INDUSTRY IN EU COUNTRIES

Piotr Borawski[1], phd habilitated; **Aneta Beldycka-Borawska**[2], msc.,
Ireneusz Zuchowski[3], phd; **James W Dunn**[4], professor
[1,2] University of Warmia and Mazury in Olsztyn, Poland; [3]Higher School of Agribusiness in Lomza, Poland;
[4]Pennsylvania State University, the USA

Abstract. The aim of this paper is to present economic situation of food industry in Poland on the background of the EU countries in the years 2011-2015. The authors used tabular and descriptive methods to present the changes in the economic situation of food industry enterprises and analysed turnover, value added, number of employees and number of companies. We calculated the median, standard deviation, coefficient of variation, skewedness and kurtosis to analyse the changes in turnover and value added of food industry in EU countries. The survey proves that the food industry is developing well. Consolidation has been noticed, which means that the food companies are growing while their number is decreasing. The turnover of the food industry increased in the years 2011-2015 in almost in all EU countries, excluding Finland (-3.5 %) and Sweden (-5.7 %). The value added of the food industry decreased in the years 2011-2015 only in the Czech Republic (-6.9 %), the Netherlands (-2.1 %), Spain (-3.5 %). The number of food industry companies decreased in the years 2011-2015 only in Austria (-0.7 %), Belgium (-9.4 %), Denmark (-0.2 %), Finland (-2.8 %), Germany (-2.5 %) and Spain (-13.3 %).

Key words: food industry, enterprises, EU.
JEL code: Q12, Q11

Introduction

Food is the basic productthat fulfils the needs of consumers. Food needs can be supported by products that can be bought on the market or by products produced on your own farm. Food can be bought and consumed in different places, for example by buying products from producers or stores for preparation of food at home (Stanko, Hamulczuk 2017).

The food industry is the most important industry within the EU and the world. It is responsible for 1.048 billion EUR production in the EU. This sector employs 4.2 million people, which accounts for 15.5 % of total employment in the production sector (Data & Trends..., 2014). Another factor stressing the importance of food industry is its 13 % share of all production companies in the EU among 286.000 companies (Juchniewicz, Lukiewska, 2015). The food industry and agriculture are important sectors not only because of high employment, but also because of preventing food crises. As Timmer (2010) claims, "the food crisis is usually set off by a shock to either supply or demand for food and often involves a sudden spike in food prices". The food crisis can be described as the period of high and volatile food prices. The globalisation of food markets has an impact on food prices (Hamulczuk 2017).

The sector involves not only food enterprises, but also the agricultural sector is involved in production and distribution of food. This sector takes part in the world's Global Value Chain (Borawski *et al.,* 2017).

The development of the food industry on the farm level in the EU market is restricted by the CAP. Generally, the CAP reforms were focused on providing substantial payments to farmers. Moreover, the CAP insists on food quality, environmental maintenance, and farm diversification on the second hand (Barnes *et al.,* 2016). Other reforms in 2015 were focused on separation of farm payments from production and adding "greening requirements". The budget of the CAP increased while the funding available at the national and individual farm levels decreased (European Commission, 2013).

[1]Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl
[2]Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl
[3]Corresponding author. E-mail address: izuchowski@wses.edu.pl
[4]Corresponding author. E-mail address: jwd6@psu.edu

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Today agribusiness enterprises are dependent on various factors such as production and distribution costs, technical development, and ways of management. The food industry is characterized by a high degree of division of labour and plays an important role in the economy (Hajderllari, Karantininis, 2012). As far as the level of competitiveness is concerned, the food enterprises in Poland are at lower level compared to more developed countries of the EU. The competitiveness depends on factors controlled by agriculture and the agri-food sector. The second group of factors are external factors, mainly: climate, rural policy, and tariffs (Wieliczko, 2014). The evaluation of efficiency of the agri-food sector depends on international trade indicators and strategic management. Especially important are the integration processes of small enterprises with big trade nets among farms (Kociszewski, Szwacka-Mokrzycka, 2011). The food industry is one of the most important parts of the economy because it is responsible for the nutrition of people and is an exporter of agricultural goods. Nowadays, the agri-food enterprises try to find new export possibilities, create new investments, and increase human capital (Firlej, Zmija, 2014). The agri-food enterprises try to develop a competitive advantage by fulfilment of the requirements of customers, ensuring high quality products by proper transport and storage conditions and optimization of product flows in agri-food chains (Baran, 2012; Klepacki, Rokicki, 2011).

The aim of this paper is to present the economic situation of the food industry in Poland on the background of the EU countries in the years 2011-2016. To develop the problem of economic situation of food industry the authors wanted to answer following questions:

1) What is the turnover of food industry in Poland?
2) How does the turnover and value added change regionally?
3) Is the number of employees and number of companies increasing?
4) What is the coefficient of variation, kurtosis and skewedness of turnover and value added of food industry?

We used tabular and descriptive methods to present the changes in the economic situation of the food industry. We calculated the median, standard deviation, coefficient of variation, skewedness, and kurtosis to analyze the changes in turnover and value added of the food industry in EU countries.

Research results and discussion

The development of the food industry is important because it uses agricultural products and creates demand for agricultural products. Thus, it is very important to allow common development of agriculture and the food industry. Cheap agricultural products delivered to the nutritious industry have an impact on processed products, which can be exported at lower prices. The situation on the food market in the EU changed in 2004 after new Member States joined the EU, including Poland. Countries such as Poland had advantages in such products as beef meat, poultry meat, meat and fish products, flour and starch products, and other (Braja, Sawicka, 2017).

One of the tools which is used in evaluation of food industry development is an industrial production index (so called industrial output index or industrial volume index). It measures the changes in the price adjusted-output of industry (Data & Trends..., 2017). Total manufacturing in the EU countries increased from the first quarter 2016 to first quarter 2017 by 1.9 %. The food and drink industry’s production index also increased in 2016-2017 (0.9 %). The data prove that the

[1]*Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl*
[2]*Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl*
[3]*Corresponding author. E-mail address: izuchowski@wses.edu.pl*
[4]*Corresponding author. E-mail address: jwd6@psu.edu*

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food and drink industry in the EU countries is developing slowly, but steadily (Hajderllari, Karantininis, 2012).

Table 1 presents food and drink data of the EU countries in the years 2011-2015. The turnover decreased in Sweden (-5.7 %) and Finland (-3.5 %). It increased in other countries and did not change in Slovenia. The biggest turnover rates in 2015 were found in France (179.9 billion EUR), Germany (168.6 billion EUR), Italy (132 billion EUR), and the United Kingdom (131.6 billion EUR). The smallest turnover in 2015 was found in Estonia (1.8 billion EUR), Latvia (1.7 billion EUR), Slovenia (2.2 billion EUR), Lithuania (4.0 billion EUR), and Slovakia (4.0 billion EUR). The biggest increase of turnover in the years 2011-2015 was noticed in Austria (+80.2 %), the United Kingdom (+50.2), Hungary (+38.5) and Greece (+29.1).

Table 1

Turnover industry data in the years 2011-2015

Country	Turnover (EUR billion)		Median	Standard deviation	Coefficient of variation	Skewedness	Kurtosis	Changes 2011-2015 (%)	2017 Q1 / 2016 Q1 (% change)
	2011	2015							
Austria	12.6	22.7	20.3	4.02	20.8	-1.1	-0.3	+80.2	0.4
Belgium	44.5	48.6	48.0	1.6	3.5	-1.3	0.0	+9.2	7.0
Bulgaria	4.7	5.2	4.9	0.2	4.2	0.7	-0.8	+10.6	0.2
Cyprus	1.5	-	1.5	0.0	0.0	-	-	-	-
Croatia	-	5.3	5.2	0.1	1.4	-2.1	-0.5	-	
Czech Republic	11.3	13.3	11.6	1.3	10.6	0.4	-1.7	+17.7	6.2
Denmark	25.4	25.4	24.6	0.6	2.3	-0.4	-0.8	0.0	3.3
Estonia	1.5	1.8	1.8	0.2	9.6	-0.3	-1.4	+20.0	3.7
Finland	11.3	10.9	11.2	0.2	1.6	-0.4	-1.6	-3.5	-1.0
France	157.2	179.9	160	12.9	7.6	0.4	-1.7	+14.4	2.8
Germany	163.3	168.6	169.3	4.4	2.6	-0.3	-0.9	+3.2	2.9
Greece	11	14.2	14.2	1.8	13.8	-0.4	-1.8	+29.1	2.8
Hungary	8.3	11.5	11.2	1.6	15.5	-0.4	-1.8	+38.5	2.8
Ireland	22.0	27.1	26.4	2.6	10.3	-0.4	-1.8	+23.2	4.3
Italy	127.0	132	132	2.2	1.7	-1.0	-0.6	+3.9	2.5
Latvia	1.6	1.7	1.6	0.2	11.7	-0.8	-0.5	+6.2	4.5
Lithuania	3.6	4.0	4.0	0.3	6.9	-0.1	-1.6	+11.1	7.8
Netherlands	59.2	70.0	66.6	4.5	6.9	-0.4	-1.4	+18.2	4.5
Poland	49.7	55.6	49.7	3.2	6.1	0.4	-1.8	+11.9	9.8
Portugal	14.5	15.3	14.9	0.3	2.3	0.3	-1.2	+5.5	8.2
Romania	10.5	12.0	11.1	0.6	5.2	0.6	-0.7	+14.3	6.7
Slovakia	3.7	4.0	3.8	0.3	8.1	1.1	-0.3	+8.1	-
Slovenia	2.2	2.2	2.2	0.1	4.2	-0.8	-0.9	0.0	-
Spain	83.8	104.2	91.5	7.4	8.0	0.6	-0.5	+24.3	5.2
Sweden	19.2	18.1	19.2	0.7	3.4	-0.4	-1.6	-5.7	4.4
United Kingdom	87.6	131.6	114	16.2	14.3	-0.7	-0.5	+50.2	-

Source: authors' calculations based on FoodDrinkEurope National Federations, 2011-2015

[1]*Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl*
[2]*Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl*
[3]*Corresponding author. E-mail address: izuchowski@wses.edu.pl*
[4]*Corresponding author. E-mail address: jwd6@psu.edu*

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The increase of turnover and production of food industry in EU-15 was driven by new members joining EU. It was the effect of increasing exports of agri-food products and increased internal demand (Beba, Poczta, 2014).

The index of industrial turnover measures the development of turnover (sales) in the European industry (it is influenced by changes in prices of the traded industrial goods and by changes of the volumes of goods traded) (Data&Trends..., 2017). The turnover index in total manufacturing in the first quarters of 2016-2017 increased by 6.7 %. The turnover index of food and drink industry in the first quarters of 2016-2017 also increased b4.3 %.

Table 1 presents the descriptive statistics for turnover in selected EU countries. The coefficient of variation informs about changes. The highest were observed in Austria (20.3 %), Hungary (15.5 %) and the United Kingdom (14.3 %). The lowest coefficients of variation in the years 2011-2015 were found in Finland (1.6 %) and Italy (1.7 %). Cyprus noted no changes in turnover.

The kurtosis, which is an asymmetry measures, has negative values in most countries of the EU what is, indicating that they were different in the analyzed period in relation to the mean. Only Belgium achieved positive kurtosis, which suggests the similarity to the mean.

The skewedness which is also a asymmetry measure, has negative values in most countries of the EU. Other counties such as Bulgaria, the Czech Republic, France, Poland, Portugal, Romania, Slovakia and Spain noted positive skewedness which suggests similar values to the mean.

The food and drink industry turnover in the first quarters of 2016-2017 increased in almost all countries. It only decreased in Finland. The biggest increase of turnover in the EU was observed in Poland (9.8 %), Portugal (8.2 %), and Lithuania (7.8 %).

Another characteristic of the food industry is profitability. It means that the company wants to achieve positive results out of activity (Szymanska, 2017). It is measured by the relationship to referenced economic value. The author measured the profitability on the pig market. She found that the return on equity in Polish pig meat enterprises was 12.45 % in 2008, 17.49 % in 2010 and in 2012 – 6.95 %. The economic downturn on the pig market caused the decrease of return on equity. It means that the food market in Poland and other countries is very sensitive to crises.

The value added decreased in the Czech Republic and the Netherlands (tab. 2). It did not change in Hungary, Portugal and Slovenia. The biggest value added in 2015 was found in France (45 billion EUR), Germany (36.7 billion EUR), the United Kingdom (38.9 billion EUR), and Italy (24.2 billion EUR). The smallest value added of the food and drink industry in 2015 was found in Estonia and Latvia (0.4 billion EUR), Slovenia (0.5 billion EUR) and Slovakia (0.8 billion EUR). The largest values were in the largest economies. The biggest increase of value added in the years 2011-2015 was found in Germany (219.1 %), Greece (100.0 %), and the United Kingdom (64.1 %). The decrease of value added in the years 2011-2015 was found in the Czech Republic (-6,9), the Netherlands (-21,0), and Spain (-3.5 %).

After introduction to the EU the new countries in 2004 the pace of the development of food industry increased. In 2008 during the world financial crises the development of the food industry decreased (Beba, Poczta, 2014).

Table 2 presents the descriptive statistics for values added in EU countries. The coefficient of variation informs about changes in value added. The highest were observed in Croatia (82.4 %), France (44.6 %) and Germany (34.9 %). The lowest coefficient of variation in the years 2011-2015 were found in Italy (9,2 %) and France (12,1 %).

[1]Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl
[2]Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl
[3]Corresponding author. E-mail address: izuchowski@wses.edu.pl
[4]Corresponding author. E-mail address: jwd6@psu.edu

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The kurtosis, which is the asymmetry measure, has negative values in most countries of the EU that is, indicating that they were different in the analyzed period in relation to the mean. Only Croatia, Estonia, Germany and Slovakia achieved positive kurtosis, which suggests the similarity to the mean.

The skewedness, which is also a asymmetry measure, has negative values in the Czech Republic, Estonia, France, Germany and other countries, which indicates that they were different in the analyzed period in relation to the mean. Other counties such as Australia, Belgium, Bulgaria, Croatia, Denmark, Finland, Greece, Hungary, Italy, Latvia, and Lithuania noted positive skewedness which suggests similar values to the mean.

Table 2

Value added of food industry data in the years 2011-2015

Country	**Value added (EUR billion)**		**Median**	**Standard deviation**	**Coefficient of variation**	**Skewedness**	**Kurtosis**	**Changes 2011-2015 (%)**
	2011	**2015**						
Austria	4.7	5.5	5.1	0.3	6.2	0.4	-0.9	+17.0
Belgium	6.7	8.1	7.4	0.6	7.9	0.2	-1.4	+20.9
Bulgaria	0.8	1.0	0.8	8.9	0.1	0.8	-0.9	+25.0
Cyprus	0.4	-	0.4	0.0	0.0	n.a	n.a.	-
Croatia	-	1.2	1.2	1.6	82.4	1.5	0.3	-
Czech Republic	2.9	2.7	2.4	0.4	15.8	-0.2	-1.1	-6.9
Denmark	3.2	4.5	3.2	0.7	20.5	0.4	-1.8	+40.6
Estonia	0.3	0.4	0.4	0.9	12.3	-.5	0.2	+33.3
Finland	2.5	2.6	2.6	0.0	3.2	0.3	-1.2	+4.0
France	29.3	45.0	29.3	12.9	44.6	-0.2	-1.0	+53.6
Germany	11.5	36.7	34.2	10.5	34.9	-1.5	0.2	+219.1
Greece	1.4	2.8	1.5	0.6	33.1	0.9	-0.6	+100.0
Hungary	2.0	2.0	2.0	0.2	10.2	1.2	0.0	0.0
Ireland	6.0	-	7.1	0.6	8.4	-0.7	-0.4	
Italy	24.2	24.2	24.2	1.7	7.2	0.5	-0.4	0.0
Latvia	0.3	0.4	0,3	0.1	16.1	0.4	-1.8	+33.3
Lithuania	0.6	0.8	0.6	0.1	13.6	0.8	-0.9	+33.3
Netherlands	14.3	11.3	13.3	1.8	13.9	-0.1	-1.6	-21.0
Poland	8.9	9.9	9.9	0.7	0.1	0.0	-1.5	+11.2
Portugal	2.9	2.9	2.9	0.1	0.1	-0.6	-1.4	-0.0
Romania	2.2	-	1.9	0.2	8.1	0.4	-1.8	-
Slovakia	0.7	0.8	0.7	0.0	6.2	1.5	0.3	+14.3
Slovenia	0.5	0.5	0.5	0.1	11.9	-0.4	-1.8	0.0
Spain	20.0	19.3	26.8	4.5	18.3	-0.4	-1.8	-3.5
Sweden	4.4	4.5	0.5	0.1	2.9	-0.4	-1.4	+2.3
United Kingdom	23.7	38.9	31	5.5	17.7	-0.0	-0.8	+64.1

Source: author's calculations based on FoodDrinkEurope National Federations, 2011-2015

The food industry is a very important source of employing people. This is very visible in Poland, where the food industry employs more than 417 thousand people and occupies 2.7 % in the country's economy. In comparison, the employment in agriculture in Poland in 2015 was 2333.4 thousand people, which occupies 16.2 % of the country's economy. The employment in

[1]*Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl*
[2]*Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl*
[3]*Corresponding author. E-mail address: izuchowski@wses.edu.pl*
[4]*Corresponding author. E-mail address: jwd6@psu.edu*

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agriculture in Poland was six times higher than in the food industry; however, it can be described as permanent. The development of the economy causes a lower contribution of agriculture in gross domestic products. This can be explained by the lower income elasticity of demand on food products in comparison to other goods (Pawlewicz, Brodzinski, 2017).

The employment in the food industry in the EU countries changed in the years 2011-2015. The number of employees decreased in the years 2011-2015 in the following countries: Belgium, Bulgaria, France, Latvia, the Netherlands, Portugal, Romania, Slovakia, Spain and Sweden (tab. 3). It increased in the remaining countries of the EU. The data exhibit the consolidation processes in the food industry in the EU countries. In Poland, all of the macroeconomic factors of the food industry increased. The biggest numbers of employees in 2015 in the food and drink industry were found in France (427.2 thousand), Germany (569.2 thousand) and Italy (427 thousands). The smallest number of employees in 2015 was found in Estonia (15.4 thousand), Slovenia (16.5) and Latvia (23.7). The biggest increase in the number of employees in the years 2011-2015 was found in Austria (43.6 %), Greece (34.1 %) and Estonia (18.5 %). The biggest decrease in the number of employees in the food and drink industry in the years 2011-2015 was found in France (-14.6 %) and Spain (-21.7 %).

The labour input measures the number of persons employed in the total manufacturing industry vs. the food and drink industry in the EU, seasonally adjusted (Data & Trends..., 2017). The employment index of total manufacturing increased in the first quarters of 2016-2017 (1.4 %). The employment index of the food and drink industry also increased in the first quarters of 2016-2017 (2.0 %).

The labour resources in the food industry were measured by Juchniewicz (2017), who analysed the food producer's competitiveness gap in Poland on the European Union market. She found that the largest share of employed persons in food production of all the employed in the EU-28 in 2013 was recorded in Germany (20.3 %), France (14.0 %), Italy (9.7 %), Poland (9.5 %), the UK (9.2 %) and Spain (7.7 %). She also measured the productivity of labour of food producers. The index was the highest in Belgium, the Netherlands, France, the UK and Germany. In Romania, the productivity was the smallest.

The competitiveness of the food industry in the EU market is determined by consolidation processes. This issue can be seen in almost all marketing chains from rural producers to suppliers of production means and retail trade. These processes are not stable and they caused different competitiveness. The strongest is the retail trade because of big shops' contribution in food trade (Stanko, Hamulczuk, 2016).

The employment in food industry in Poland and EU countries was the effect of integration and restructuring processes. The changes in labour of the food industry are similar to those in whole economy. The increased condition of the economy, increased demand on EU markets and exports of agricultural products caused the increase of employment in many countries of EU (Beba, Poczta, 2014).

Another characteristic of the food and drink industry is the number of companies (tab. 3). The largest number of companies in 2015 was found in Spain (26.016), Poland (14.534) and Portugal (10.096). The smallest number of companies in 2015 was found in Slovakia (278), Estonia (575) and Ireland (1583). The biggest increase in the number of companies in the years 2011-2015 was

[1]Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl
[2]Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl
[3]Corresponding author. E-mail address: izuchowski@wses.edu.pl
[4]Corresponding author. E-mail address: jwd6@psu.edu

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found in Italy (793.9 %), France (472.9 %) and Slovenia (86.0 %). The biggest decrease in the years 2011-2015 was found in Spain (-13.3 %), Belgium (-9.4 %) and Finland (-2.8 %).

Table 3

Number of employees and number of companies in the years 2011-2015

Country	Number of employees (1.000)		Changes 2011-2015 (%)	2017 Q1 / 2016 Q1 (% change)	Number of companies		Changes 2011-2015 (%)
	2011	2015			2011	2015	
Austria	58	83.3	+43.6	2.7	3.921	3.893	-0.7
Belgium	89	88.5	-0.6	1.8	4.912	4.452	-9.4
Bulgaria	99	95.6	-3.4	1.3	5.612	6.182	+10.1
Cyprus	13	-	-	-	863	-	-
Croatia	-	61.0	-	-4.2	-	3.256	-
Czech Republic	105	115.4	+9.9	2.1	8.360	9.157	+9.5
Denmark	55	61.6	+12.0	0.3	1.610	1.607	-0.2
Estonia	13	15.4	+18.5	0.6	422	575	+36.2
Finland	33	37.6	+13.9	-13.5	1.900	1.846	-2.8
France	500	427.2	-14.6	2.4	10.000	57.290	+472.9
Germany	550	569.2	+3.5	2.7	5.960	5.812	-2.5
Greece	65	87.2	+34.1	-	1.180	1.225	+3.8
Hungary	97	106.6	+9.9	-	6.556	6.812	+3.9
Ireland	43	47.3	+10,0	9.7	689	1.583	+129.7
Italy	408	427.0	+4.6	-	6.300	56.315	+793.9
Latvia	25	23.7	-5.2	-3.0	788	1,120	+42.1
Lithuania	42	44.1	+5.0	-4.4	1.205	1.609	+33.5
Netherlands	131	128.6	-1.8	-	4.385	6.065	+38.3
Poland	403	417.5	+3.6	3.5	13.708	14.534	+6.0
Portugal	110	107.5	-2.3	2.6	10.513	10.996	+4.6
Romania	186	180.8	-2.8	0.9	8.239	8.826	+7.1
Slovakia	30	29.3	-2.3	-	218	278	+27.5
Slovenia	16	16.5	+3.1	-	1.214	2.258	+86.0
Spain	446	349.2	-21.7	6.4	30.000	26.016	-13.3
Sweden	56	50.5	-9.8	-	3.400	4.240	+27.7
United Kingdom	370	418.2	13.0	-0.3	6.500	6.620	+1.8

Source: author's calculations based on FoodDrinkEurope National Federations, 2011-2015

Poland has faced many changes in food industry subjects, particularly on milk market. The number of wholesaler suppliers decreased from 311.1 (thousand) in 2005 to 130.3 (thousand) in 2014 (decrease 44.3 %). Poland had the biggest number of wholesaler suppliers in the EU. The smallest number of wholesaler suppliers in the EU countries was observed in 2015 in Cyprus (204) and Estonia (640). Big economies in milk production, particularly Germany had 72.6 thousand wholesaler suppliers in 2016, France - 66.7 thousand suppliers in 2015 and Austria - 33.3 thousand suppliers (Analizy i prognozy rynkowe, 2015). Moreover, the number of direct suppliers of milk decreased from 76 thousand in 2005 to 10.8 thousand in 2014 (decrease (85.8 %). However, the average wholesaler supply of milk increased from 27 tonnes per supplier to 73 tonnes in 2014 (increase 270.4 %). The average number of dairies decreased from 181 companies in 2014 to 165 in 2017 (8.8 decrease). These results demonstrate the changes on the Polish milk market (Trajer, Krzyzanowska, 2015).

[1]*Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl*
[2]*Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl*
[3]*Corresponding author. E-mail address: izuchowski@wses.edu.pl*
[4]*Corresponding author. E-mail address: jwd6@psu.edu*

The biggest decrease of food industry enterprises is observed in small and medium-sized enterprises. The biggest increase is observed in large enterprises. These processes are the effect of concentration in food industry in EU. The level of concentration measured by the increase of numbers of large enterprises is bigger than the decrease of small enterprises (Tereszczuk, 2013).

The development of food industry in EU countries is linked with the outlays on research and innovations. The biggest has been observed in nutritious articles, beverages and cigarettes. In Poland for example most of outlays on research and development was directed to professional experience of employees and marketing of new products. The biggest increase of outlays was observed in knowledge purchase for external sources and programs (Zmija, 2015).

Conclusions, proposals, recommendations

1) The food industry is a very important part of the economy in the EU countries. The survey proved this development. The EU is a big producer of food and a very important player on the world markets. The EU is the largest exporter and importer of food products within the world. The enlargement of the EU in 2004 has led to the effect of creativity trade and internal trade (Juchniewicz, 2017).
2) The food sector is one of the fastest growing EU market sectors. However, this sector is very sensitive to financial crises. This issue can be confirmed by sudden changes in all variables analysed in this paper.
3) The turnover data prove the development of food industry in Europe. The turnover increased in almost all countries of the EU. It has decreased only in Sweden (-5.7 %) and Finland (-3.5 %). The biggest producers of food products in the EU measured by turnover in 2015 were France (179.9 billion EUR), Germany (168.6 billion EUR), Italy (132 billion EUR) and the United Kingdom (131.6 billion EUR).
4) Another characteristic describing the food industry is the value added. It is the result of turnover development in the countries. The research proved that the biggest value added in 2015 was found in France (45 billion EUR), Germany (36.7 billion EUR), the United Kingdom (38.9 billion EUR) and Italy (24.2 billion EUR). The biggest food producers of the EU are managing the market. The smallest countries and food producers are mainly importers. The smallest value added of the food and drink industry in 2015 was found in Estonia and Latvia (0.4 billion EUR), Slovenia (0.5 billion EUR), and Slovakia (0.8 billion EUR).
5) The employment data prove the development of food industry in the EU, which is characterized by consolidation processes and the changes of human resources by technical resources. The number of employees decreased in the years 2011-2015 in many countries, for example Belgium, Bulgaria, France, Latvia, the Netherlands, Portugal, Romania, Slovakia, Spain, and Sweden.
6) The number of companies also changed in the analysed period. The main producers of food with the biggest number of companies in 2015 on the one hand were Spain (26.016), Poland (14.534) and Portugal (10.096). On the other hand, the smallest number of companies in 2015 was found in Slovakia (278), Estonia (575), and Ireland (1583).
7) The coefficient of variation informs us about changes in turnover and value added of the food industry in EU countries. The biggest and positive changes of turnover were observed in Austria

[1]*Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl*
[2]*Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl*
[3]*Corresponding author. E-mail address: izuchowski@wses.edu.pl*
[4]*Corresponding author. E-mail address: jwd6@psu.edu*

(20.3 %), Hungary (15.5 %) and United Kingdom (14.3 %). The biggest and positive changes in value added were observed in Croatia (82.4 %), France (44.6 %) and Germany (34.9 %).

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[1]Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl
[2]Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl
[3]Corresponding author. E-mail address: izuchowski@wses.edu.pl
[4]Corresponding author. E-mail address: jwd6@psu.edu

DOI 10.22616/ESRD.2018.139

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[1]*Corresponding author. E-mail address: pboraw@uwm.edu.pl, aneta.beldycka-borawska@uwm.edu.pl*
[2]*Corresponding author. E-mail address: aneta.beldycka-borawska@uwm.edu.pl*
[3]*Corresponding author. E-mail address: izuchowski@wses.edu.pl*
[4]*Corresponding author. E-mail address: jwd6@psu.edu*