CHANGES IN LABOUR PRODUCTIVITY IN THE AGRIBUSINESS IN EUROPEAN UNION COUNTRIES

Aldona Mrówczyńska-Kamińska✉, Agnieszka Baer-Nawrocka

Poznań University of Life Sciences

ABSTRACT

The main aim of the paper is to identify the changes in labour productivity in the agribusiness and to define its relationship to labour productivity in the entire national economy of the EU countries. Labour productivity is expressed as gross value added per employee in agribusiness as a whole and its three zones (I – industries manufacturing means of production and services for agriculture and the food industry, II – agriculture, III – food industry). The analysis concerns selected years from 1995 to 2010, which are the most recent available data. The gross value added in agribusiness were calculated by means of the formula suggested by Woś in 1979. As it results from the analyses, despite favorable changes, the productivity of labour in the agribusiness in the new EU Member States remains at a lower level than in most of the EU-15 countries. The main reason behind the differences in the levels of agribusiness labour productivity is a surplus of the labor force in the agriculture in the most EU-12 countries. Moreover, the EU-15 countries especially from Western and Northern Europe demonstrate smaller differences between the labour productivity in agribusiness and other sectors of the national economy.

Key words: labour productivity, agribusiness, European Union

INTRODUCTION

Assessing the effects of economy management is among the primary problems tackled by economic sciences. The effectiveness evaluation allows for reasonable decision making (minimizing the expenditures needed to fulfill the objective while maximizing the effects of owned resources or expenditure inflows). As Nordhaus and Samuelson emphasize [2012], the effective use of production factors determines the competitiveness level on a local, regional and international scale. In this context, the productivity of labour is a matter of particular importance. The level of labour productivity is a major element for the assessment of economic processes and for the distribution of economic growth effects among various social groups. Therefore, labour productivity is among the key objectives of national policies [Wojtyna 2010]. While entailing lower costs and an increased supply of cheaper goods and services, high levels of labour productivity boost the market dynamics and result in increasing the purchasing power, prosperity and competitiveness of societies [Landmann 2004]. This pattern applies to the entire national economy but is particularly relevant for the agri-food sector which, according to Alaudin et al. [2005], usually demonstrates lower levels of labour productivity compared to other sectors of the economy. The competitiveness of the entire food sector (agribusiness) is also shaped by production costs, prices of marketed foodstuffs, quality and assortment of products offered, and currency exchange rates (e.g. in the case of countries outside the euro zone). Furthermore, in the food industry itself, labour productivity

✉ mrowczynska-kaminska@up.poznan.pl

depends on the specific nature of production in different sectors.

Dynamic development of agribusiness in different regions of the world has been a subject of many research. For example Haggblade [2011] explored the links between projected rapid rates of agribusiness expansion and Africa's economic growth. Jabri [2016] analyzed the size of food and agribusiness firms in different regions of India with regard to business enterprise characteristics and performance. Reynolds et al. [2009] identified factors influencing the sustainability of selected agri-food chains in Germany. Determinants and effects of a corporate social responsibility (CSR) strategy for enterprises in German agribusiness were examinde by Heyder and Theuvsen [2012]. Buccirossi et al. [2002] from the analysis of competition policy in the European Union's agribusiness concluded that farmers are the weakest link of the entire supply chain in Europe. The authors suggest that the use of the concept of purchasing power could be developed to balance the agro-food chain. Reardon and Barrett [2000] and Tomczak [1997, 2000] among the most important factors in agribusiness development in many regions of the world listed improvement of technologies throughout the agri-food production, processing and distribution chains, skills transfer and access to foreign capital and foreign markets. Changes of the importance of Polish agribusiness in the national economy were analyzed by Mrówczyńska-Kamińska [2014], Wicki and Grontkowska [2015] while in comparision with other EU countries by Mrówczyńska-Kamińska [2015].

Continuous monitoring of labour productivity, in relative and absolute terms, is necessary both for producers in agri-food sector and for the sake of economic growth in the EU countries. Given the above, the main aim of the paper is to identify the changes in labour productivity in the agribusiness and to define its relationship to labour productivity in the entire national economy of the EU countries.

MATERIAL AND METHODS

According to the classic formula, agribusiness is part of the economic system which produces food and provides raw materials from the farm to consumers [Davis and Goldberg 1957]. Agribusiness consists of three main economic aggregates, which are used in this analysis: I zone includes the industries manufacturing means of production and services for agriculture and the food industry, II zone – agriculture and III zone – the food industry. Labour productivity in the agribusiness and in its zones is expressed as gross value added per employee. The gross value added in agribusiness were calculated by means of the formula suggested by Woś [1979]:

$$X_A = x_r + x_p + \sum_{i=1}^{n} x_i b_{ir} + \sum_{i=1}^{n} x_i b_{ip}$$

where: X_A – gross value added of agribusiness in the country;
x_r – gross value added of agriculture;
x_p – gross value added of the food industry;
x_i – gross value added of i-th sectors related to agriculture and the food industry ($i + 1$, 2, ..., n, n ≠ r, p), which indirectly participate in food production;
b_{ir} – the coefficient specifying the flow of goods and services of the i-th sector to agriculture, expressed with the percentage of indirect demand of the i-th sector;
b_{ip} – the coefficient specifying the flow of goods and services of the i-th sector to the food industry, expressed with the percentage of indirect demand of the i-th sector.

According to the definition of agribusiness, the gross value added of this sector includes the total (complete) value of gross value added of agriculture (x_r) and the food industry (x_p). These are the components which contribute directly to the food production. The procedure applied to determine the input of the branches that indirectly participate in food production (I zone) is slightly more complex. Only certain parts of their products and services can be found in the value of food production. These values are proportional to the size of the flow of tangible goods and services of the i-th sectors of the national economy to agriculture and the food industry, which are calculated on the basis of intersectoral flow balances, i.e. input – output analysis.

The basic source of data used in the analysis were input – output balance tables for individual EU countries published by Eurostat. The input – output

method, i.e. the outlay and performance method, was developed by Leontief [1949]. The objective of the input – output analysis is to investigate the production relations between individual branches in the national economy. This method has been used by Davis and Goldberg [1957] to formulate the theory of agribusiness. The selected data from 1995 to 2010 were used in the analysis, i.e. the most recent available data on "Intersectoral flow balance" for individual countries of the EU.

RESULTS

Table 1 shows the labour productivity in three zones of agribusiness in EU countries from 1995 to 2010. In 2010, the highest level of the analyzed index was recorded in the agribusiness of Western and Northern European countries while Bulgaria, Romania, Poland, Latvia and Lithuania exhibited the lowest levels. The relatively high labour productivity in the food industry of Ireland, the Netherlands, Denmark, Belgium, Sweden and the UK, and the relatively low labour productivity in the agriculture of new EU members were the factors that contributed the most to that result. For instance in 2010, in the Netherlands and Ireland, one person employed in the food industry (III zone) generated a gross value added of over EUR 100 thous. Meanwhile, the amounts for Bulgaria, Poland and Lithuania were more than 13 times and 5 times lower, respectively. Similar results were observed in the agriculture (zone II). For instance, in the Netherlands, Denmark and Belgium, one employee generated a value added ranging from EUR 20 thous. to 36 thous. while the corresponding amounts recorded in Bulgaria and Romania were 10 times and 20 times lower, respectively. The above shows enormous differences in agribusiness labour productivity levels between the new members and EU-15 countries. However, a positive signal is that the differences between new and old Member States has become smaller. While in 1995 the difference in labour productivity between these two groups of countries was 10-folds, in 2010 it was about 5-folds. Studies conducted by Baer-Nawrocka and Markiewicz [2012] confirmed similar direction of changes in EU agriculture. Accordingly, 2000–2008 was a period of reduction of the spatial imbalances in the EU as regards

labour productivity expressed as gross value added per employed in agriculture. The main factor of this trend towards further convergence was mainly the increase of value added generated in the agriculture sector along with a concurrent reduction of the number of agriculture employees in the EU-12 countries. The changes of gross value added was faster than changes to labour resources. The processes of labour productivity convergence between old and new EU Member States were driven by the instruments of the Common Agricultural Policy which became a sort of catalyst in elimination of spatial inequalities between the productivity of the labour factor in various countries. In spite of positive developments, differences in the labour productivity level between new and old member countries have remained high. This is a consequence of important disparities in level of the agricultural development between the UE-15 and EU-12 countries, in terms of production patterns, the structure of farms, the farmers access to means of production, and the ability to substitute labour with capital.

What matters in economic analyses is not only the absolute labour productivity (the value added vs. the number of employees ratio) but also the relative labour productivity (compared to the labour productivity in the entire national economy). According to Woś [2001], the economic rating compared to other sectors of national economy may be defined as the agribusiness' internal competitiveness which takes into account the inter-sectoral flows of value added and their balance. At the same time, this allows to measure the ability of the agriculture and agribusiness sectors to self-finance their development. The relative labour productivity depends on the level of the absolute labour productivity in specific sectors of the national economy, and also on the sectoral employment patterns, i.e. the share of specific sector in the overall employment. Usually, the key reason for low labour productivity levels in the agribusiness compared to other non-agricultural sectors is the high employment, mainly in its second zone (agriculture).

When analyzing the data on the relative labour productivity in agribusiness seen in the context of the national economy in EU countries (Table 2), it can be noted that countries where people employed in agriculture (and in the entire agribusiness) represent a rela-

Table 1. Labour productivity in agribusiness in the European Union countries in 1995, 2000, 2007 and 2010 (gross value added per worker, EUR thous.)

Item	1995				2000				2007				2010			
	I zone	II zone	III zone	total	I zone	II zone	III zone	total	I zone	II zone	III zone	total	I zone	II zone	III zone	total
Austria	32.8	7.6	28.2	13.5	39.1	5.4	23.4	12.8	58.8	13.1	62.2	34.3	69.0	15.7	62.9	37.7
Belgium	43.0	30.1	46.9	39.9	54.6	35.5	53.1	47.8	64.8	25.5	64.0	52.3	69.0	29.2	63.7	55.4
Bulgaria	×	×	×	×	3.7	2.1	3.7	2.4	9.8	2.4	4.6	3.3	15.7	2.0	7.5	3.8
Czech Republic	9.0	5.8	8.5	7.1	9.6	6.6	11.9	8.9	13.1	10.9	17.9	13.7	15.6	8.2	19.9	13.9
Denmark	29.6	37.4	42.2	36.9	36.6	38.4	48.6	41.2	49.2	23.6	62.7	44.0	45.6	20.3	63.8	41.6
Estonia	3.3	2.7	5.1	3.5	5.9	3.6	7.3	5.1	13.9	7.2	12.5	10.3	17.7	9.4	14.8	13.0
Finland	28.0	11.9	48.0	21.3	38.5	12.9	43.2	22.7	47.7	12.7	63.2	28.7	52.4	14.1	66.0	31.3
France	28.4	28.7	52.1	34.7	19.6	30.4	53.9	34.3	45.3	33.8	60.2	44.7	51.2	32.0	60.8	45.8
Greece	×	×	×	×	13.6	10.1	32.6	13.2	14.0	14.3	39.4	18.2	14.0	9.1	57.1	17.5
Spain	19.6	15.4	32.4	20.2	25.0	21.4	33.6	25.1	29.5	24.5	38.5	29.4	27.8	25.9	54.0	33.6
Netherlands	35.5	36.4	61.4	42.9	58.2	36.0	68.9	50.6	47.3	40.3	95.8	55.5	46.1	36.4	101.6	56.3
Ireland	27.1	23.5	61.5	32.5	40.1	22.6	55.7	34.4	41.8	21.0	85.1	41.1	44.0	21.2	117.9	49.3
Lithuania	4.2	1.8	3.7	2.4	6.7	2.1	10.3	4.0	11.5	5.5	9.7	7.6	18.1	5.5	18.3	11.6
Latvia	2.5	1.6	7.5	2.7	2.6	1.1	7.9	2.6	3.5	6.1	11.5	6.7	×	×	×	×
Germany	24.3	23.6	40.4	29.6	30.1	27.6	38.6	32.5	34.7	25.7	40.1	34.1	38.0	22.2	41.9	34.9
Poland	5.0	1.3	6.9	2.1	7.5	2.0	10.7	3.3	9.9	4.1	11.8	6.2	8.1	4.1	18.0	7.1
Portugal	7.9	4.3	21.5	7.1	10.8	3.9	28.0	8.2	16.8	4.4	28.4	9.4	18.0	3.8	28.1	9.1
Romania	3.3	1.6	7.8	2.1	3.8	0.9	12.5	1.5	6.3	2.6	26.1	4.4	5.7	2.4	31.8	4.6
Slovakia	10.8	4.6	7.0	6.2	14.9	8.4	13.2	11.1	20.9	15.7	19.2	18.0	22.5	13.4	24.0	18.7
Slovenia	9.0	3.2	15.0	5.5	14.4	4.0	20.0	7.7	27.0	6.4	25.5	11.7	32.9	7.0	29.5	13.3
Sweden	36.7	12.8	43.1	25.4	51.7	14.3	58.3	33.8	59.2	14.0	64.0	38.9	62.8	13.0	64.5	39.2
Hungary	7.2	3.1	7.6	4.5	10.1	3.2	8.8	5.4	19.4	9.1	13.6	12.1	19.2	9.3	15.4	12.7
United Kingdom	22.1	32.7	42.3	33.2	20.9	40.2	62.1	43.6	31.7	31.8	68.2	45.7	30.5	32.1	54.1	40.0
Italy	25.9	20.8	43.8	27.0	36.1	26.9	46.8	33.6	42.6	27.6	47.6	36.1	51.4	26.1	50.3	37.9
EU-12	5.8	2.0	7.7	2.9	7.1	1.7	10.4	3.0	10.3	3.9	14.6	6.3	10.4	3.6	19.1	6.8
EU-15	26.1	21.5	43.4	28.5	28.9	22.2	46.0	30.4	37.7	23.9	52.2	35.6	40.3	22.4	54.5	36.5
EU-27	20.9	10.3	34.2	16.7	22.6	9.3	36.5	16.5	30.0	13.0	41.8	22.9	31.8	12.1	44.8	23.7

Source: Own calculations based on data from input – output tables for the EU countries and from data about national account, Eurostat, date of access 20.03.2017.

tively low share in the total employment of the national economy (Fig. 1), demonstrate a labour productivity in that sector at a level comparable to the national economy average. In the analyzed period, the lowest agribusiness labour productivity ratio compared to the entire national economy was recorded in Portugal, Poland, Latvia, Bulgaria, Slovenia, Romania and Greece, i.e. mainly in countries with the highest share of agri-

cultural employees in the total employment. In these countries, the agribusiness labour productivity was by more than 50% lower than the national economy average level. Nevertheless, in the Netherlands, the UK and Belgium, the agribusiness labour productivity ranged from 80 to 90% of the average labour productivity in the national economy. In 2010, on an average basis throughout the EU, one agribusiness employee

Table 2. The relation of labour productivity in agribusiness to labour productivity in whole national economy in the European Union countries in 1995, 2000, 2007 and 2010 (%)

Item	1995				2000				2007				2010			
	I zone	II zone	III zone	total	I zone	II zone	III zone	total	I zone	II zone	III zone	total	I zone	II zone	III zone	total
Austria	71.2	16.5	61.3	29.4	78.0	10.7	46.6	25.6	95.3	21.2	100.9	55.6	108.3	24.6	98.8	59.2
Belgium	85.0	59.6	92.8	79.0	100.0	65.1	97.4	87.5	95.2	37.5	93.9	76.9	97.6	41.3	89.9	78.2
Bulgaria	×	×	×	×	98.3	54.6	98.5	63.8	178.3	43.5	83.4	59.8	177.4	22.0	84.4	43.4
Czech Republic	120.5	77.8	113.1	94.9	83.5	57.9	103.9	77.6	58.3	48.5	79.4	61.1	58.6	30.7	74.8	52.1
Denmark	64.6	81.7	92.0	80.6	67.7	71.1	90.1	76.4	74.1	35.6	94.5	66.3	63.3	28.1	88.7	57.8
Estonia	82.7	67.7	128.2	87.1	61.2	37.2	75.7	53.3	64.2	33.5	58.2	47.6	77.8	41.2	65.2	57.5
Finland	65.7	27.9	112.7	50.0	76.8	25.8	86.1	45.2	75.4	20.1	100.0	45.4	83.5	22.5	105.3	49.9
France	55.2	55.8	101.2	67.5	38.9	60.4	107.0	68.1	72.1	53.7	95.7	71.0	78.7	49.1	93.5	70.5
Greece	0.0	0.0	0.0	0.0	47.4	35.2	114.0	46.0	33.8	34.4	94.8	43.7	33.1	21.5	134.9	41.4
Spain	63.1	49.7	104.4	65.2	71.9	61.6	96.7	72.1	64.7	53.8	84.5	64.4	54.2	50.6	105.6	65.7
Netherlands	87.7	90.0	151.9	106.1	126.5	78.3	149.7	110.1	80.2	68.2	162.5	94.0	75.8	59.8	166.8	92.4
Ireland	60.3	52.1	136.7	72.2	72.7	41.0	100.9	62.3	53.4	26.8	108.7	52.5	57.6	27.8	154.4	64.5
Lithuania	134.9	56.8	120.2	77.6	84.7	26.3	131.6	50.6	68.7	32.9	57.9	45.5	103.4	31.7	104.7	66.6
Latvia	72.8	47.4	216.8	77.8	32.5	13.8	98.4	32.6	21.0	36.6	68.9	40.2	0.0	0.0	0.0	0.0
Germany	52.7	51.0	87.4	64.1	64.3	59.0	82.5	69.4	63.4	47.1	73.2	62.2	69.0	40.2	76.0	63.2
Poland	77.8	21.2	107.8	33.3	68.6	17.8	97.6	30.3	54.9	22.6	65.9	34.4	41.3	20.9	91.6	36.0
Portugal	45.6	24.5	123.6	40.8	48.8	17.8	126.8	37.2	59.0	15.3	99.7	33.0	59.7	12.5	93.3	30.1
Romania	131.9	62.5	313.6	82.4	111.0	25.3	367.4	43.3	53.3	21.7	221.2	37.7	46.5	19.4	260.5	37.8
Slovakia	169.6	72.3	110.2	97.5	153.6	86.6	135.7	114.6	91.8	69.0	84.4	79.0	81.5	48.5	87.0	67.8
Slovenia	60.3	21.2	101.2	37.3	70.1	19.7	97.3	37.4	87.0	20.6	82.1	37.6	102.5	21.7	91.7	41.2
Sweden	89.9	31.3	105.5	62.1	94.5	26.0	106.4	61.7	90.4	21.4	97.8	59.5	92.8	19.2	95.2	57.8
Hungary	98.0	41.6	103.4	61.1	97.2	30.5	85.1	52.1	94.1	44.1	66.2	58.8	94.1	45.5	75.8	62.3
United Kingdom	72.3	106.9	138.2	108.7	40.5	77.8	120.4	84.5	58.2	58.4	125.3	84.0	58.0	61.1	102.9	76.1
Italy	73.0	58.6	123.4	76.1	77.9	58.0	100.8	72.5	77.6	50.4	86.7	65.7	91.1	46.2	89.1	67.2
EU-12	73.5	24.8	98.4	37.2	90.6	22.0	76.9	39.0	68.0	25.7	78.9	41.4	61.5	21.5	77.1	40.3
EU-15	63.1	52.0	105.1	68.9	62.3	47.8	99.2	65.6	68.1	43.2	94.3	64.4	71.0	39.6	96.0	64.4
EU-27	58.5	28.8	95.6	46.7	58.8	24.2	94.8	42.9	62.7	27.1	87.5	48.0	64.6	24.6	91.0	48.2

Source: Own calculations based on data from Table 1 and from data about national account, Eurostat, date of access 20.03.2017.

generated approximately 52% less than one person employed in the national economy. These results show that in most of the EU countries, agribusiness is among the economy sectors that struggle to reach high levels of labour productivity. However, in countries with a higher level of social and economic development, agribusiness is by far more competitive on a domestic basis than in countries less developed economically. This is mainly because these countries have experienced profound structural changes a long time ago, as regards both the entire national economy and agribusiness itself. The food manufacturing pattern is dominated by industrial sectors of national economy (I zone), usually representing higher levels of labour productivity than the agriculture which typically is the main sector in countries at a lower level of economic development.
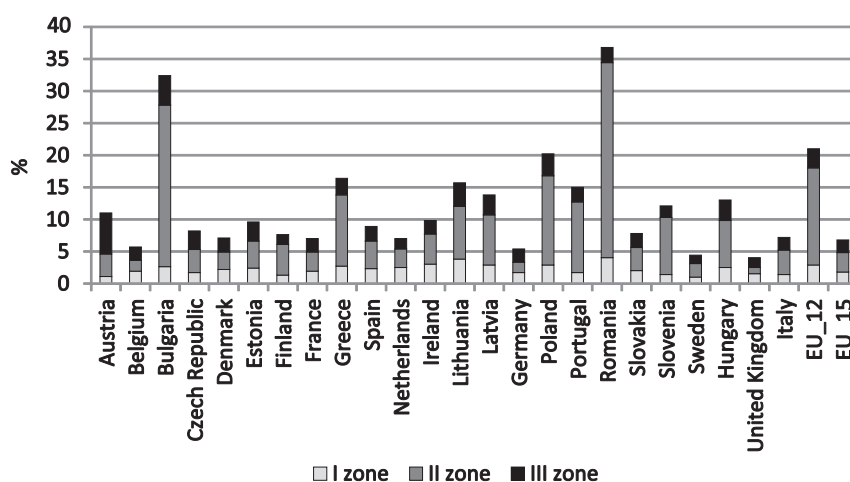
Fig. 1. The share of employed in agribusiness in the national economy in the European Union countries in 2010

Source: Own elaborations based on input – output table in the EU countries in 2010 and data from Eurostat www.epp.eurostat. ec.europa.eu, data of access 20.03.2017.

The detailed analysis of labour productivity ratios in zones of agribusiness areas has proved in the Netherlands, Ireland, the UK and Finland, labour productivity in the food industry was above the average labour productivity in the national economy. A particular situation as regards labour productivity in the food industry, compared to the entire national economy, took place in Romania. Throughout the period under review, productivity in the III zone of agribusiness was by far higher than national economy average (by approximately 200% in the last year under review). However, this indicator does not reveal any extraordinary results in the Romanian food industry. The main reason for this situation is that in Romania, there are only a few sectors of the national economy (other than the food industry) that could drive the economic development. Although Bulgaria is a similar case, in this country the potential labour productivity of the I zone of agribusiness is higher compared to the entire national economy.

When considering the issue of agribusiness labour productivity, it is worth mentioning the relationship between labour productivity in the entire agribusiness and the level of social and economic development (Fig. 2). Two groups of the EU countries were distinguished when analyzing this dependency. The first one comprised countries where both the agribusiness labour productivity and the GDP per capita are low. These include the majority of countries who joined the EU after 2004 as well as Greece and Portugal. This is because in many of the new member countries (except for the Czech Republic and Slovakia) a major role is played by family farming concentrated in relatively small holdings, which is not conducive to the creation of modern agribusiness. In these countries, one of the key conditions for the development of agriculture towards agribusiness is reduction of the number of agricultural employees and the number of farms, as well as the increase of the efficiency in the use of owned resources and, as a consequence, the improvement of the economic performance in terms of income. This process largely depends on the economic development rates of other sectors of national economy. Therefore in this countries agriculture and the entire agribusiness tend to develop at a slow rate. Meanwhile, commercial farms fully interrelated with the market, agribusiness enterprises, extremely high labour productivity levels, low levels of employment in the agriculture, integration with the industry, and the globalization of the agricultural economy are the dominating characteristics of Western and Northern European countries, mainly Ireland, Denmark, the Netherlands, Sweden, Austria, Finland, the UK, France and Germany [Mrówczyńska-Kamińska 2015].
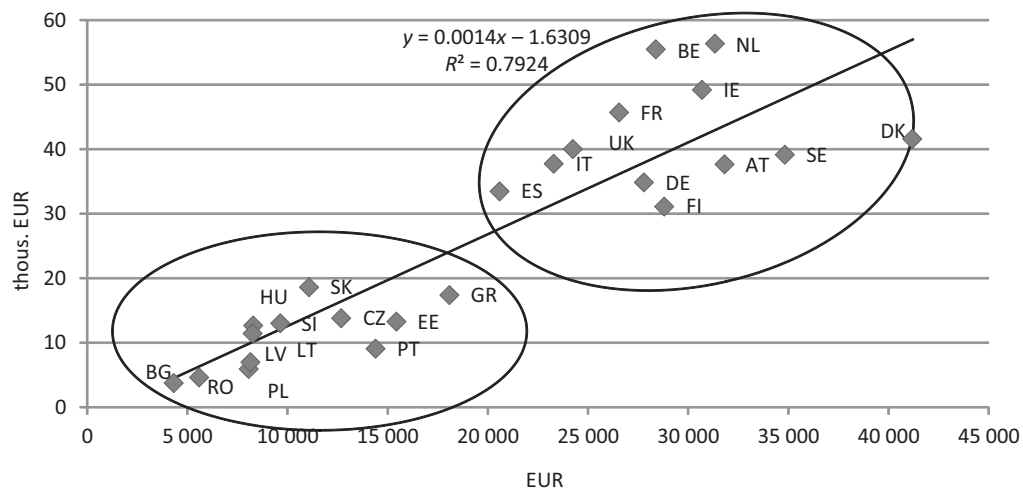
Fig. 2. Relation between the level of labour productivity in agribusiness and GDP per capita in EU countries in 2010

Source: Own elaborations based on input – output table in the European Union countries in 2010 and data from Eurostat www.epp. eurostat.ec.europa.eu, data of access 20.03.2017.

DISCUSSION

The analysis of the changes of agribusiness labour productivity in the EU countries allows to draw some conclusions as to the foreseen directions of its development in the EU-12 countries. The condition for moving to higher development stages in these countries is to increase the productivity and attain higher levels of economic development. The development level of the food sector plays an important role in the country's economic development by interrelating production and consumption. For the agriculture and entire food sector, manufacturing operations are a way to deliver raw materials to other non-agricultural sectors of the national economy, and to shape the demand from other modern economy sectors (inter-sectoral flows). On the consumption side, a higher productivity of specific agribusiness areas contributes to increasing the population's income and, thus, generates demand for industrial manufacturing. Generally, this drives the economic growth and, as a consequence, increases the employment in non-agricultural sectors, as shown by Dethier and Effenberger [2012] and Jabri [2016]. The agriculture and agribusiness development may result from the natural economic processes. However, these may be supported with an appropriate economic policy. As shown by modern economics, Central and

Eastern European countries may choose between two directions for the development of agriculture and of the entire agribusiness: either the conventional agri-food system which is dominated by industrial agriculture and by large food and commercial corporations (just as in Western and Northern European countries), or a system based on a more environmentally-friendly agriculture, smaller processing companies and local markets (sustainable growth). It seems that from the perspective of problems currently experienced by new EU member countries (too many agricultural employees, low level of agribusiness productivity, land fragmentation), the latter is likely to be a better match for that group of countries [Mrówczyńska-Kamińska 2015]. However, as noted by Zegar [2012], a major problem is that the sustainable growth paradigm remains outside the mainstream development economics which may perpetuate the underdevelopment of these countries. The development path paved by highly-developed countries means progressing through sub-sequent stages of development, from traditional to modern societies. However, according to some theories, the one-way road based on western concepts of moving from traditional to modern societies may be replaced by the cultural and political pluralism [Musiał 2008]. These include the neo-modernization theories which claim that integration and globalization

processes will result in accelerating the modernization processes. As a consequence, countries may experience faster modernization progress and move closer to the defined development stage. In this approach, modernization mainly means the efforts made by poorly developed countries in order to catch up with the leading societies at the highest development stages. This acceleration may result in an extremely fast progress through specific development phases, or even in skipping some of them. According to Sen [2002], social factors play a relevant role in particular phases, and modernization means a social change process.

Whether the new member countries will follow the path paved by developed Western and Northern European countries, primarily based on a large increase of labour productivity, or will they choose a totally different development path in the food manufacturing area, remains an open question. And there is no obvious answer to that. It can only be concluded that labour productivity will be a milestone for both development paths, and the growth rate will be by far lower if the sustainable growth paradigm is adopted.

CONCLUSION

As shown by the analyses, despite favorable changes in the period from 1995 to 2010, the productivity of labour in the agribusiness in the EU-12 countries remains at a lower level than in most of the EU-15 countries. A surplus of the labor force in the agriculture is the main reason behind the differences in the levels of agribusiness labour productivity in specific countries. The high level of employment in the agriculture sector in these countries is of a structural nature, and results from economic, social and demographic processes shaped for many years. In the agriculture sector, this is reflected by the defective structure of agricultural land, by the domination of small farms which involve large quantities of labour used in an ineffective manner, and by the small scale of manufacturing operations.

Meanwhile, Western and Northern European countries demonstrate smaller imbalances in labour productivity between the agribusiness and other sectors of the economy as a whole. While the ratio of sectoral labour productivity to labour productivity in the national economy is decreasing in the agriculture sector,

it is increasing in the food industry and in the I zone of agribusiness. This is also true for countries who joined the EU structures after 2004. These countries demonstrate a consistent decrease of the number of employees in the agricultural sector itself. As a consequence, their share in the general employment of the national economy is also decreasing. Therefore, if absolute labour productivity ratios remained unchanged, the relative labour productivity in the agriculture sector would demonstrate a firm downward trajectory. However, the level of relative labour productivity in the agriculture sector slowly starts to increase. This results from a higher growth dynamics of labour productivity in the agriculture sector compared to other sectors of the national economy in medium and highly developed countries. In highly developed countries, the growth rate of labour productivity in the agriculture exceeds the growth rate of labour productivity in the industry sector. This allows to overcome the adverse impact of the decreasing share of agriculture employees on the level of relative labour productivity. Accordingly, the decline in employment in the agriculture provides better opportunities for increasing the productivity of labour in the agriculture and, indirectly, in the entire agribusiness. The main reason for that increase should be the increasing ratio of fixed assets per employee, because usually the low levels of labour productivity in the agriculture and in the food industry are related to low capital expenditures. Other factors that could improve the competitiveness of the food industry include a higher concentration of the production, consolidation of enterprises, better quality and innovativeness, and joint purchases of (raw) materials for manufacturing purposes.

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ZMIANY W WYDAJNOŚCI PRACY W AGROBIZNESIE W KRAJACH UNII EUROPEJSKIEJ

STRESZCZENIE

Głównym celem artykułu jest identyfikacja zmian w wydajności pracy w agrobiznesie oraz scharakteryzowanie współzależności między wydajnością pracy w tym sektorze a wydajnością pracy w gospodarkach narodowych krajów członkowskich UE. Wydajność pracy wyrażona została wartością dodaną brutto przypadającą na jednego pracownika w całym agrobiznesie i jego trzech sferach (I – przemysł wytwarzający środki

produkcji i usługi dla rolnictwa i przemysłu spożywczego, II – rolnictwo, III – przemysł spożywczy). Analiza dotyczy wybranych lat w okresie 1995–2010. Jak wynika z przeprowadzonych analiz, mimo że zaszły pozytywne zmiany w wydajności pracy w agrobiznesie krajów UE-12, to nadal poziom tej wydajności jest niższy w większości państw UE-15. Główną przyczyną tych różnic jest nadwyżka siły roboczej w rolnictwie większości krajów UE-12. Ponadto w krajach UE-15, zwłaszcza tych z zachodniej i północnej Europy, wykazano mniejsze nierówności w wydajności pracy między agrobiznesem a innymi sektorami gospodarki ogółem.

Słowa kluczowe: wydajność pracy, agrobiznes, Unia Europejska