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THE ROLE OF AGRICULTURE IN THE NATIONAL ECONOMY OF EU COUNTRIES*

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Abstract. The aim of this paper is to identify directions and dynamics of changes in the role of agriculture in the national economy of EU countries. The time frame of the analysis based on Eurostat data covers the years of 2000–2015. The study fits within the framework of comparative economics. As it results from the presented analyses, changes are found in the proportions between agriculture and the other sectors of the economy. An increase in the level of economic development is accompanied by a decrease in the share of the agricultural sector in the generation of GDP and the labour market. At the same time, primarily as a result in the reduction of the number of persons employed, an increase was recorded in workforce productivity in agriculture. This is evident especially in many of the countries accessing the European Union in 2004 and in the later period. Despite positive changes, agriculture in those countries is still playing a significant role in the links with economy, manifested particularly in its share in the employment rate and owned productive fixed assets.

Key words: agriculture, national economy, added value, employment, capital, European Union

INTRODUCTION

Since its origins the function of agriculture in the provision of food has resulted in its strategic position among the other sectors of the economy. In view of the increasing

ecological problems also the function connected with the reduction of external costs and production of public environmental goods has been gaining in importance. The agricultural sector is the foundation of life and livelihood for the population related with agriculture, thus also its social function is equally important. Practice in many countries indicates that with economic development this sector is changing its traditional, agricultural character to more industrial. This is happening at the simultaneous reduction of the share of agriculture in the national economy. Countries with a relatively high share of agriculture in the generation of GDP and employment are typically poor and frequently face problems manifested in food shortages (Tomczak, 2004; Sachs, 2009). However, it does not mean that at a higher level of socio-economic development the role of agriculture is decreasing. As it was stressed by Woś (2001) “no developed economy in any country may ever exist without an agriculture which is modern (both technologically and socially)”.

Changes in the agricultural sector and its role in economic development have taken an important part in the economic history of Europe (Martin-Retortillo and Panilla, 2012). Contemporary interpretations of transformations and development of agriculture in view of its interactions with other sectors based on examples of various countries worldwide, both those less and more economically developed, have been presented

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e.g. in publications by Lains and Pinilla (2009), Timmer (2009) and Hillbom and Svensson (2013). The problem of transformation of agriculture in countries of Central and Eastern Europe has been investigated e.g. by Trzeciak-Duval (1999), Csaki (2000), Lerman et al. (2002), Brooks and Nash (2002) and Rozelle and Swinnen (2004). Research conducted by those authors indicates that the transformations taking place in the agricultural sector implied first of all improved productivity of agriculture over a longer period. In turn, an increase in productivity in agriculture in a long-term perspective facilitates transfer of resources to sectors of greater efficiency, which as a result is manifested in increased productivity in the entire national economy. A desirable final effect of this process is high productivity in agriculture, absorbing a slight share of persons employed in the entire national economy. Together with changes in the relations between agriculture and the national economy changes are also observed in the internal structure of agribusiness, of which agriculture as the primary sector is a crucial part. It results from studies by Tomczak (2004) on the transformation of agrifood economy in the USA that non-agricultural sectors of agribusiness have been developing much faster than agriculture. A decrease in the share of farms in the overall structure of agribusiness does not lead to a reduced role of agricultural producers, but rather a strengthening of their relations and dependencies with the sphere providing farm inputs and the agri-food industry. Thus a limitation of the role of agriculture in the national economy was accompanied by an increase in importance of non-agricultural agribusiness sectors¹. Similar conclusions resulting from analyses conducted based on the balance of the input-output model in the EU countries were presented by Mrówczyńska-Kamińska (2013). Thus it may be stated that the essence of relationships between agriculture and the other spheres of the food economy and the national economy is similar in various national economies, irrespective of the degree of their development. In contrast, differences may be observed in the importance of forms, in which these relationships are manifested and the rate of their transformations, which to a considerable degree is a derivative of the status and development phase of the entire national economy as well as general economic conditions.

¹ These sectors, at the same time provided employment for job leavers in agriculture (Tomczak, 2004).

Both for producers operating in the agricultural sector and due to processes of economic development in EU countries it is necessary to continuously monitor these dependencies. In view of the above, it was decided in this paper to determine directions and dynamics of changes in the role of agriculture in the national economy in EU countries in the years 2000–2015.

MATERIAL AND METHODS

The relationship between agriculture and the economy was expressed based on its share in the generation of GDP, employment and capital resources. Analyses also concerned changes in labour productivity in agriculture in view of changes in efficiency in the entire economy. Efficient utilisation of production resources, including labour, in contemporary economies is a basic factor determining competitive potential on the international and global scale. This is particularly important in relation to labour resources in the agricultural sector, in which efficiency is as a rule lower than in the other sectors (Alaudin et al., 2005).

The analyses were based on data of the European Statistical Office Eurostat, systematised within the framework of national accounts for all EU member countries. In order to determine the average rate of changes in the analysed variables the rate of change was applied, calculated based on all terms of a time series (years 2000–2015), in accordance with the formula proposed by Wysocki and Lira (2005).

RESULTS

Figure 1 presents the GDP per capita (according to the Purchasing Power Standard – PPS) and the share of agriculture in GDP and employment in EU countries in 2015. The presented data confirm the general rule that the share of agriculture in added value is greater in countries with a relatively lower GDP per capita and vice versa. Countries with a high GDP per capita² and at the

² In terms of the high GDP per capita particularly Luxemburg and Ireland take a leading position. However, this result does not reflect the actual economic situation in those countries. In Luxemburg the number of persons generating domestic production exceeds the number of persons actually living in that country. In turn, in Ireland a high GDP level is determined by foreign corporations, which profits were included in Ireland's GDP. Nevertheless, this does not change the high level of economic development in those countries.

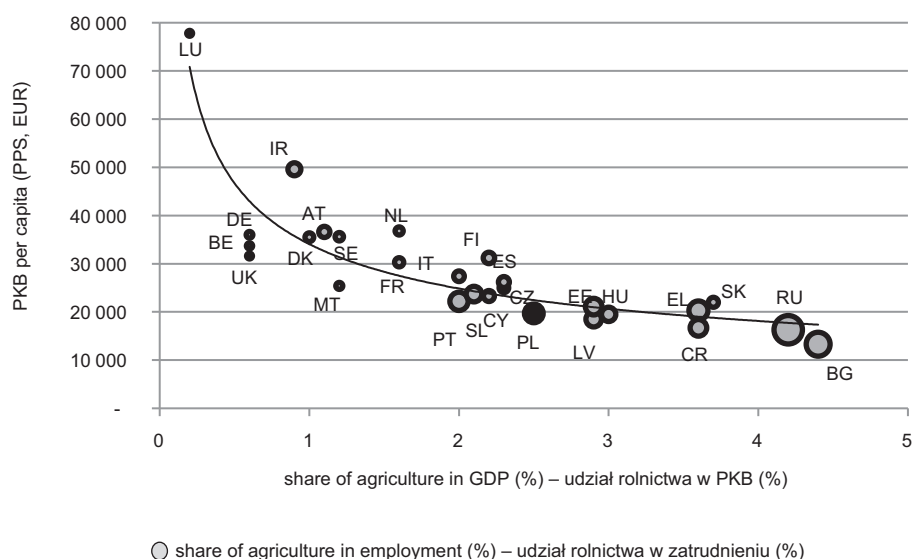


Fig. 1. GDP per capita (PPS) and the share of agriculture in GDP and employment (%) in EU countries

Source: Calculations and the author's study based on Eurostat (2016).

Rys. 1. PKB per capita (PPS) oraz udział rolnictwa w PKB i zatrudnieniu (%) w krajach Unii Europejskiej

Źródło: obliczenia i opracowanie własne na podstawie danych Eurostat (2016).

same time a low share of agriculture (ranging from 0.3% to 2%) in the generation of GDP as well as total employment are mainly the UE-15 countries. In turn, the new member countries comprise a group of countries with the lowest national income per capita in the EU and as a consequence also a greater share of agriculture in GDP and employment. A positive phenomenon is connected with the fact that in the years 2000–2015 the average annual growth rate of GDP per capita in the group of these countries was the highest among all the EU countries and it ranged from 3% in Cyprus and Slovenia to approx. 7% in the Baltic states, Romania and Bulgaria³ (Table 1). Thus the diversification in EU countries in terms of GDP per capita has decreased, although the

distance in this respect is still large, not only between most new EU members and the old EU, but also in the group of the latter – particularly between countries of northern and western Europe.

In the years 2000–2015 in the group of analysed countries the share of agriculture in GDP was decreasing with an increase in economic development measured by GDP per capita.

The greatest scale of these changes was observed in Bulgaria and Romania, i.e. countries with the highest initial share of agriculture in the generation of GDP. In those countries the index in 2015 was 2.5-fold lower than in 2000. Nevertheless, it still remains the highest (over 4%) in comparison to other EU countries. Relatively marked changes in the role of agriculture in the generation of GDP (approx. 3-fold decrease) were also observed in Luxembourg and Ireland. A reduced role of agriculture in the national economy in the years 2000–2015 in most countries was a consequence of a lower increment in the real added value produced in that sector in comparison to added value in the entire national economy (Table 1). In contrast, added value generated by agriculture in Bulgaria, Ireland and countries of southern

³ Based on Eurostat data it may be concluded that the dynamic increase in GDP per capita in EU countries was taking place until 2008. The economic crisis had a negative effect on the investigated values in most countries (except Poland). In some countries it was manifested to a greater extent in the next year, i.e. 2009. This was observed particularly in Lithuania, Latvia and Estonia, where a decrease in GDP per capita reached 13–17%. In turn, in Greece the crisis of 2008 was reflected in a greater decline in the later years rather than immediately after the crisis itself.

Table 1. Agriculture in the national economy in EU countries in the years 2000–2015
Tabela 1. Rolnictwo w gospodarce narodowej w krajach Unii Europejskiej w latach 2000–2015

| List Wyszczególnienie | Average annual rate of changes in GDP per capita (according to PPS) Średnioroczne tempo zmian PKB per capita (wg PPS) | | Share of agriculture in GDP Udział rolnictwa w PKB (%) | | Average annual rate of changes in gross added value (based on fixed prices of 2010) Średnioroczne tempo zmian wartości dodanej brutto (wg cen stałych z 2010 roku) | | Share of agriculture in employment (%) Udział rolnictwa w zatrudnieniu (%) | | Share of agriculture in value of gross fixed assets (%) Udział rolnictwa w wartości środków trwałych brutto (%) | | Average annual rate of changes in capital outlays ¹ in agriculture (based on fixed prices of 2010) Średnioroczne tempo zmian nakładów kapitałowych ¹ w rolnictwie na 1 ha UR (euro) 2000–2015 | | Values of capital outlays ¹ in agriculture per 1 ha UAA (EUR) 2000–2015 Wartość nakładów kapitałowych ¹ w rolnictwie na 1 ha UR (euro) 2000–2015 | |
|--------------------------|--|------|---|------------|---|------|---|------|--|------|--|-----------|---|-----------------------|
| | 2000–2015 | 2000 | 2015 | 2000 = 100 | in entire economy w całej gospodarce | 6 | 7 | 8 | 2000 | 2015 | 2000 | 2000–2015 | EUR euro | UE = 100 ³ |
| | 2 | 3 | 4 | 5 | | | | | 10 | 11 | 12 | | 13 | 14 |
| 1 | | | | | | | | | | | | | | |
| EU-28 | 2.5 | 1.9 | 1.4 | 73.7 | 1.4 | 0.3 | 7.7 | 4.8 | 62.3 | . | . | . | 1 798.1 ² | 100.0 |
| UE-28 | | | | | | | | | | | | | | |
| Belgium | 1.9 | 1.2 | 0.6 | 50.0 | 1.4 | 0.5 | 2.0 | 1.3 | 65.0 | 1.2 | –0.5 | | 5 213.3 | 382 |
| Belgia | | | | | | | | | | | | | | |
| Bulgaria | 7.0 | 11.0 | 4.4 | 40.0 | 4.0 | –1.4 | 24.1 | 18.8 | 78.0 | 7.4 | –1.9 | | 605.8 | 44 |
| Bulgaria | | | | | | | | | | | | | | |
| Czech Republic | 3.9 | 3.1 | 2.3 | 74.2 | 2.9 | 0.1 | 4.6 | 3.1 | 67.4 | 3.3 | –0.3 | | 1 163.4 | 85 |
| Czechy | | | | | | | | | | | | | | |
| Denmark | 2.0 | 2.2 | 1.0 | 45.5 | 0.6 | –0.4 | 3.4 | 2.5 | 73.5 | 2.3 | 0.7 | | 3 555.8 | 261 |
| Dania | | | | | | | | | | | | | | |
| Germany | 2.6 | 1.0 | 0.6 | 60.0 | 1.0 | 0.2 | 1.9 | 1.5 | 78.9 | 1.5 | 1.4 | | 2 959.5 | 217 |
| Niemcy | | | | | | | | | | | | | | |
| Estonia | 7.2 | 4.3 | 2.9 | 67.4 | 4.0 | 1.4 | 6.6 | 3.9 | 59.1 | 5.3 | 1.7 | | 698.6 | 51 |
| Irlandia | 3.3 | 2.5 | 0.9 | 36.0 | 3.4 | –0.8 | 7.5 | 5.5 | 73.3 | 2.0 | 1.0 | | 1 182.2 | 87 |
| Irlandia | | | | | | | | | | | | | | |
| Greece | 2.5 | 5.4 | 3.6 | 66.7 | 1.4 | –1.0 | 16.0 | 11.9 | 74.4 | 5.6 | 0.6 | | 1 381.9 | 101 |
| Grecja | | | | | | | | | | | | | | |
| Spain | 2.6 | 3.7 | 2.3 | 62.2 | 1.9 | –0.3 | 5.9 | 4.0 | 67.8 | 2.1 | 0.7 | | 1 130.9 | 83 |
| Hiszpania | | | | | | | | | | | | | | |
| France | 1.9 | 2.1 | 1.6 | 76.2 | 1.2 | 0.2 | 3.7 | 2.8 | 75.7 | 2.4 | 0.5 | | 2 071.5 | 152 |
| Francja | | | | | | | | | | | | | | |
| Croatia | 4.5 | 5.3 | 3.6 | 67.9 | 2.4 | 0.4 | . | 9.1 | . | . | . | | 997.8 | 73 |
| Chorwacja | | | | | | | | | | | | | | |

Table 1 cont. – Tabela 1 cd.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|----------------------------------|-----|------|-----|------|-----|------|------|------|------|-----|------|----------|-----|
| Italy Włochy | 1.2 | 2.6 | 2.0 | 76.9 | 0.3 | -0.6 | 4.6 | 3.7 | 80.4 | 3.3 | 0.4 | 2 958.3 | 217 |
| Cyprus Cypr | 2.9 | 3.3 | 2.2 | 66.7 | 2.3 | -1.6 | 6.0 | 4.0 | 66.7 | 0.8 | 0.0 | 3 523.3 | 258 |
| Latvia Łotwa | 7.3 | 4.6 | 2.9 | 63.0 | 4.7 | 2.9 | 14.6 | 8.0 | 54.8 | 5.6 | 5.2 | 593.5 | 44 |
| Lithuania Litwa | 7.6 | 5.6 | 2.9 | 51.8 | 4.7 | 0.6 | 18.6 | 9.1 | 48.9 | 7.1 | 2.4 | 723.6 | 53 |
| Luxembourg Luksemburg | 2.7 | 0.6 | 0.2 | 33.3 | 2.6 | . | 1.8 | 1.1 | 61.1 | 2.5 | 3.1 | 3 271.4 | 240 |
| Hungary Węgry | 4.5 | 4.9 | 3.0 | 61.2 | 2.2 | 2.2 | 12.5 | 6.8 | 54.4 | 3.6 | -0.9 | 1 210.8 | 89 |
| Malta | 2.3 | 2.0 | 1.2 | 60.0 | . | . | 2.1 | 1.6 | 76.2 | 0.8 | -0.8 | 7 217.8 | 529 |
| Holland Holandia | 2.1 | 2.2 | 1.6 | 72.7 | 1.2 | 0.7 | 2.9 | 2.2 | 75.9 | 3.9 | 1.1 | 11 251.4 | 825 |
| Austria | 2.2 | 1.6 | 1.1 | 68.8 | 1.5 | 0.6 | 6.2 | 4.1 | 66.1 | 2.6 | 0.1 | 2 234.6 | 164 |
| Poland Polska | 4.9 | 3.1 | 2.5 | 80.6 | 3.3 | 1.9 | 20.2 | 11.5 | 56.9 | 4.8 | 1.6 | 1 125.8 | 83 |
| Portugal Portugalia | 2.4 | 3.1 | 2.0 | 64.5 | 0.6 | 0.1 | 12.6 | 11.0 | 87.3 | 3.2 | -0.8 | 1 347.3 | 99 |
| Romania Rumunia | 7.5 | 10.8 | 4.2 | 38.9 | 3.6 | 2.4 | 44.9 | 26.6 | 59.2 | . | -0.4 | 956.2 | 70 |
| Slovenia Słowenia | 3.2 | 2.9 | 2.1 | 72.4 | 2.5 | 0.4 | 11.7 | 8.0 | 68.4 | 3.8 | 0.0 | 2 078.3 | 152 |
| Slovakia Słowacja | 6.1 | 3.9 | 3.7 | 94.9 | 4.3 | 6.2 | 6.2 | 3.3 | 53.2 | 2.1 | -2.0 | 1 094.8 | 80 |
| Finland Finlandia | 2.3 | 3.0 | 2.2 | 73.3 | 1.4 | 0.9 | 6.0 | 4.3 | 71.7 | 3.5 | 1.7 | 2 114.2 | 155 |
| Sweden Szwecja | 2.1 | 1.7 | 1.2 | 70.6 | 1.9 | 1.9 | 2.8 | 2.3 | 82.1 | 1.7 | 0.8 | 1 846.5 | 135 |
| Great Britain Wielka Brytania | 1.6 | 0.8 | 0.6 | 75.0 | 1.6 | 0.3 | 1.3 | 1.2 | 92.3 | . | 1.2 | 1 344.3 | 99 |

¹ Sum of intermediate consumption and depreciation calculated based on the Economic Accounts for Agriculture (EAA – RER). ² Mean value. ³ Calculations based on the EU median of 1364 EUR.

Source: own calculations and elaboration based on Eurostat (2016).

¹ Suma zużycia pośredniego i amortyzacji obliczonych według rachunku sektorowego (RER). ² Wartość średnia. ³ Obliczenia na podstawie mediany dla UE wynoszącej 1364 euro.

Źródło: obliczenia i opracowanie własne na podstawie danych Eurostat (2016).

Europe was decreasing. As it was stated by Woś (2001) and Czyżewski (2007), a slower increment in the added value newly generated by agriculture is a common phenomenon and a general regularity in economic development. Apart from natural barriers for the development of agricultural production resulting from the fact that it involves living organisms, this phenomenon is justified in two theories. One of them, demand-oriented, refers to the low income and price flexibility of demand for agricultural produce. In turn, the other theory, production and supply-oriented, tries to find causes for the disproportions between labour productivity in agriculture and in the other sectors of the economy. In the EU mean labour productivity in agriculture in 2015 was approx. 3-fold lower than in the economy as a whole, while in comparison to such manufacturing sectors as industry

or processing, this difference was even greater (Fig. 2). Differences in labour productivity in agriculture and in non-agricultural sectors are observed in all EU countries at a varying scale (Table 2). Disregarding the extreme values in Luxembourg and Ireland, where labour productivity in the entire economy is the highest, considerable disproportions in this respect are found in Romania, Portugal, Bulgaria, Poland and Slovenia. In those countries labour productivity in agriculture is the lowest and at the same time efficiency in the entire economy is lower than in many other countries. A low labour productivity in the agricultural sector in those countries is determined by an adverse agrarian structure with the predominance of farms of small area, which are a workplace for an excessively high number of persons employed in that sector. In turn, in Slovakia, the Czech Republic and Estonia

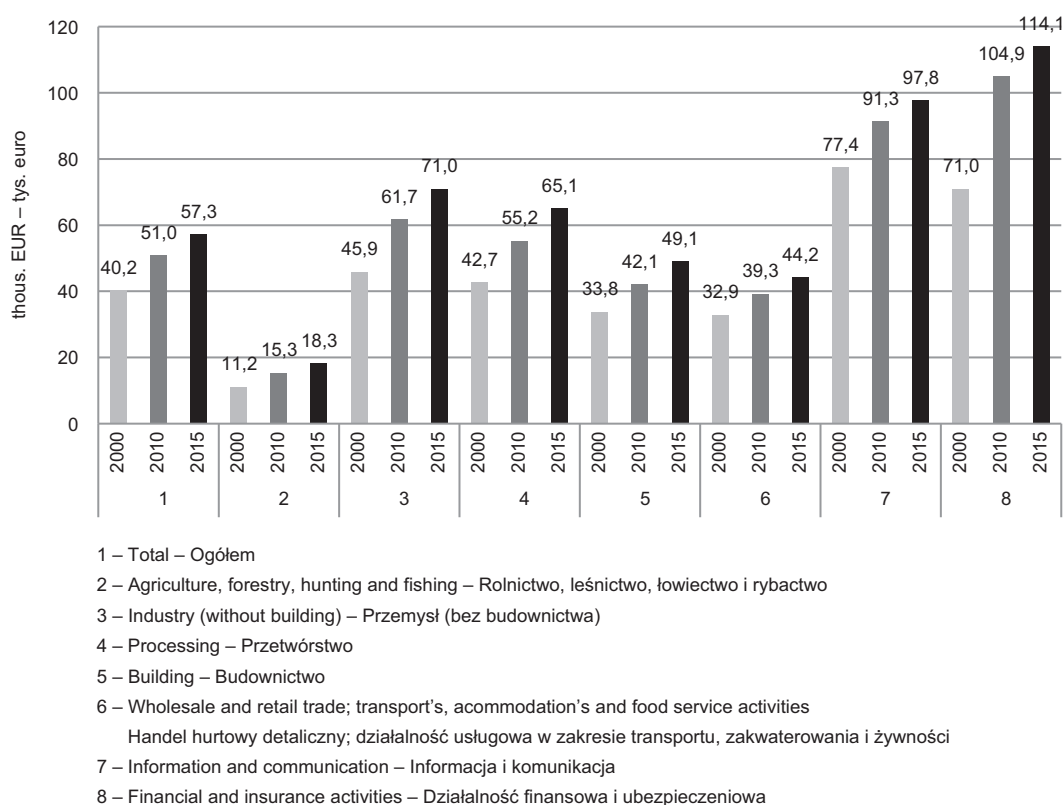


Fig. 2. Changes in labour productivity in selected sectors of the economy in EU-28 in the years 2000–2015 (thous. EUR/1 employed)

Source: Calculations and the author's study based on Eurostat (2016).

Rys. 2. Zmiany w poziomie wydajności pracy w wybranych sektorach gospodarki w krajach UE-28 w latach 2000–2015 (tys. euro/1 zatrudnionego)

Źródło: Obliczenia i opracowanie własne na podstawie danych Eurostat (2016).

Table 2. Labour productivity in the entire economy and in agriculture in EU countries in the years 2000–2015
Tabela 2. Wydajność pracy w gospodarce ogółem i rolnictwie w krajach Unii Europejskiej w latach 2000–2015

| List Wyszczególnienie | Labour productivity (current prices, thousand EUR/1 employee) (2015) Wydajność pracy (ceny bieżące, tys. euro/1 zatrudnionego) (2015) | | Labour productivity in the entire economy/labour productivity (multiplicity) Wydajność pracy w gospodarce ogółem/wydajność pracy w rolnictwie (krotność) | Average annual rate of changes in labour productivity in the years 2000–2015 Średnioroczne tempo zmian wydajności pracy w latach 2000–2015 | |
|---------------------------------|--|--------------------------------|---|--|--------------------------------|
| | in entire economy w gospodarce ogółem | in agriculture w rolnictwie | | in entire economy w gospodarce ogółem | in agriculture w rolnictwie |
| EU-28 – UE-28 | 57.3 | 18.3 | 3.1 | 0.9 | 3.4 |
| Belgium – Belgia | 79.8 | 38.5 | 2.1 | 0.7 | 2.5 |
| Bulgaria – Bułgaria | 11.0 | 3.0 | 3.7 | 3.1 | –0.4 |
| Czech Republic – Czechy | 29.0 | 23.8 | 1.2 | 2.5 | 2.9 |
| Denmark – Dania | 82.4 | 36.3 | 2.3 | 0.4 | 1.5 |
| Germany – Niemcy | 63.4 | 27.2 | 2.3 | 0.8 | 1.5 |
| Estonia | 28.1 | 24.4 | 1.2 | 3.6 | 5.3 |
| Ireland – Irlandia | 119.0 | 21.8 | 5.5 | 2.0 | 1.2 |
| Greece – Grecja | 38.4 | 13.0 | 3.0 | 1.0 | 1.7 |
| Spain – Hiszpania | 52.8 | 34.2 | 1.5 | 0.5 | 1.5 |
| France – Francja | 70.8 | 44.2 | 1.6 | 0.7 | 1.9 |
| Croatia – Chorwacja | 23.0 | 10.8 | 2.1 | 1.0 | |
| Italy – Włochy | 60.0 | 36.3 | 1.7 | –0.4 | 0.5 |
| Cyprus – Cypr | 43.9 | 26.3 | 1.7 | 0.5 | –0.7 |
| Latvia – Łotwa | 24.3 | 10.0 | 2.4 | 4.6 | 8.7 |
| Lithuania – Litwa | 25.0 | 9.0 | 2.8 | 5.2 | 7.6 |
| Luxemburg – Luksemburg | 116.3 | 18.6 | 6.2 | –0.2 | 1.2 |
| Hungary – Węgry | 20.9 | 11.0 | 1.9 | 2.4 | 7.9 |
| Malta | 39.3 | 33.7 | 1.2 | | |
| Holland – Holandia | 69.1 | 57.1 | 1.2 | 0.7 | 1.9 |
| Austria | 70.5 | 22.1 | 3.2 | 0.7 | 2.1 |
| Poland – Polska | 23.8 | 5.8 | 4.1 | 2.9 | 5.4 |
| Portugal – Portugalia | 34.1 | 7.3 | 4.7 | 0.9 | 1.3 |
| Romania – Rumunia | 16.5 | 2.9 | 5.6 | 5.5 | 8.4 |
| Slovenia – Słowenia | 35.4 | 10.5 | 3.4 | 2.1 | 2.9 |
| Slovakia – Słowacja | 31.1 | 38.4 | 0.8 | 3.6 | 9.7 |
| Finland – Finlandia | 72.2 | 42.5 | 1.7 | 0.7 | 2.4 |
| Sweden – Szwecja | 82.2 | 46.4 | 1.8 | 1.4 | 4.0 |
| Great Britain – Wielka Brytania | 73.4 | 41.4 | 1.8 | 1.0 | 0.5 |

Source: own calculations and elaboration based on Eurostat (2016).

Źródło: obliczenia i opracowanie własne na podstawie danych Eurostat (2016).

labour productivity in agriculture is comparable to that calculated for the entire economy. A similar situation, although at a 2-fold greater level of analysed indexes, is also observed in Holland. This obviously is connected with the fact that a vast majority of production entities in Czech and Slovakian agriculture are large farms based on hired workforce, operating as efficient enterprises (Baer-Nawrocka, 2006). In turn, Dutch agriculture is distinguished among EU countries by high capital intensity, which was reflected in high productivity of both labour and land.

Analysis of data applying the dynamic approach showed that in the years 2000–2015 on average in the UE-28 the rate of increase in labour productivity in agriculture over 3-fold exceeded average annual rate of growth in total labour productivity. It resulted mainly from the reduction in the number of people employed in EU agriculture, occurring on a large scale particularly in agriculture of new EU member countries. When analysing the effect of changes in added value and employment on changes in labour productivity in agriculture we may indicate four arbitrarily designated groups of countries (Fig. 3). In such countries as Slovakia, Romania, Hungary, Lithuania, Latvia, Estonia and Poland changes in labour productivity were positively influenced on the one hand by the high growth rate of added value, while on the other hand by

a decrease in employment. Relatively low average annual rates of changes, both in employment and added value generated by agriculture, were recorded in the Benelux, Finland, Austria, Germany, Sweden, Portugal as well as the Czech Republic and Slovakia. A negative effect on changes in the presently relatively low labour productivity in Greek and Spanish agriculture in comparison to the other EU-15 countries was connected with the low decrease rate in the number of employed at a simultaneous decrease in the added value generated in that sector. Similar trends, but at the currently relatively lowest level of productivity of people employed in agriculture were observed in Denmark and Ireland. In turn, a reduction of added value at the relatively lowest rate of decrease in labour resources involved in agricultural production contributed both to a decrease in labour productivity in agriculture in Bulgaria and Cyprus and its limited improvement in Italian agriculture.

At the present stage of economic development in European countries capital is the primary form for the manifestation of relationships of agriculture with non-agricultural sectors of the economy. As it results from data given in Table 1, the highest share of the agricultural sector in the owned productive fixed assets is observed in Bulgaria and in Lithuania (over 7%), in Greece, Estonia, Latvia (over 5%) and in Poland (almost 5%). At the

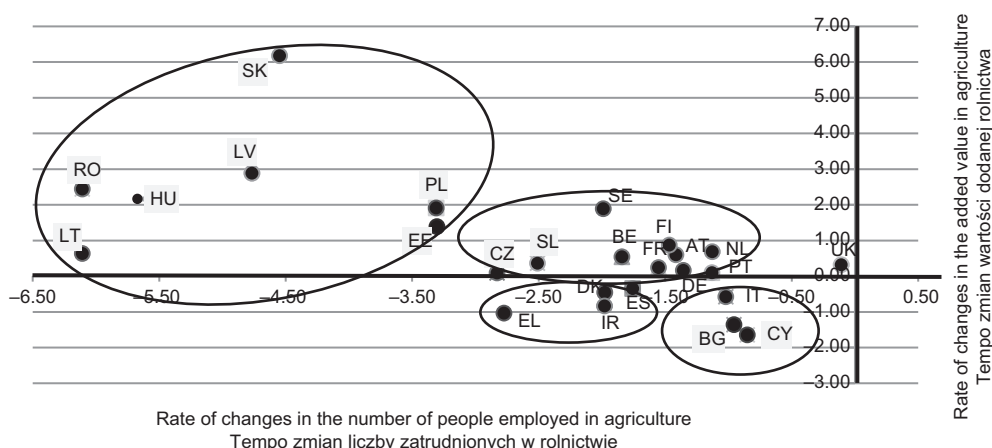


Fig. 3. Average annual rate of changes in the added value and employment in agriculture in the years 2000–2015 (based on fixed prices from 2010)

Source: own calculations and elaboration based on Eurostat (2016).

Rys. 3. Średnioroczne tempo zmian wartości dodanej i zatrudnienia w rolnictwie w latach 2000–2015 (na podstawie cen stałych z 2010 roku)

Źródło: obliczenia i opracowanie własne na podstawie danych Eurostat (2016).

same time, in countries of Western Europe this share falls within the range of 1.5–2.5%. This is confirmed in the regularity indicating a greater share of agriculture in fixed assets in less economically developed countries. This process of modernisation of the agricultural sector is irreversibly connected with the process of capital substitution of land and first of all labour. Chances for the acceleration of the rate of this process were provided by the implementation of CAP instruments in countries of Central and Eastern Europe. A study by Czubak et al. (2012) showed that the inflow of EU funds resulted in an increase in the value of fixed assets in Polish agriculture. The greatest changes were observed in the case of machinery, technical facilities and tools, which value in the years 2004–2011 increased by approx. 5% annually. These investments were mainly financed from the funds of CAP Pillar II, as well as a portion of direct payments, particularly in the largest farms. However, the share of agriculture in the increase in property in the economy through investment outlays, despite their increase in the absolute values, is still low and for more than a decade has remained at approx. 2% (Baer-Nawrocka and Poczta, 2016). This is obviously the effect of a faster growth in investment outlays in non-agricultural sectors. In view of the total value of capital outlays (fixed and operating capital), expressed in real prices of total intermediate consumption and depreciation, it may be stated that in Polish agriculture in figures per unit UAA they account for slightly over 80% median⁴ for the entire EU. In comparison to countries with a similar production structure and production conditions (Germany, France) this difference is approx. 2.5-fold. At the same time it needs to be stressed that among countries which became EU members in the last three accession rounds this value is the highest and in the years 2000–2015 it was characterised by a relatively high growth rate. A higher average annual increase in capital outlays per 1 ha was recorded in the Baltic countries, while in the case of the other countries these values decreased in real terms. As it results from data available with the Economic Accounts for Agriculture, the decrease in the values of capital outlays recorded in recent years in agriculture of Bulgaria, Romania, Slovakia or Hungary was caused by a decrease in production value, and the resulting reduction of current outlays within intermediate consumption (Eurostat-RER, 2016).

⁴ Considering the mean value – only 62.6%.

CONCLUDING REMARKS

The aim of this paper was to identify the directions and the dynamics of changes in the role of agriculture in the national economy in EU countries. Conducted comparative analyses showed that in the years 2000–2015 in terms of quantitative characteristics this sector was losing in importance. This is particularly evident in the group of countries, which joined the EU in 2004 and in the later years. With an increase in the development level of these countries the share of agriculture in the generation of GDP and employment was decreasing. These changes may be perceived as a proper direction of transformation in the economic structure of these countries. It is a confirmed regularity that the economic development leads to changes in relationships between agriculture and the entire national economy. Over a longer period its share in production, employment and fixed assets decreases in relation to the respective values for the entire national economy. Nevertheless, the share of the above-mentioned characteristics is higher than in the EU-15. This results from a higher level of development in non-agricultural sectors, but also differences in the agrarian and technical and economic structure of agriculture particularly in countries of Western Europe.

A positive phenomenon is connected with an increase in labour efficiency in agriculture of most EU countries, particularly almost all countries of Central and Eastern Europe. What is more, the growth rate of labour efficiency in agriculture in many of those countries is faster than in the other sectors of the economies. This is determined both by the systematic decrease in the number of people employed in the agricultural sector and an increase in the added value generated by that sector. These processes are particularly important, as labour efficiency is commonly considered to be a major indicator of development in economies, directly manifested in the purchasing power of their nations. Changes in efficiency of people employed in agriculture to a considerable extent lead to a reduction of the difference in the development of that sector between EU countries, especially between the old and new EU members. A particular role in this process is played by capital functioning in agriculture in the form of modern means of production. Implementation of CAP instruments in Poland, but most likely also in other countries of Central and Eastern Europe, contributed to an increased investment activity of farms, especially those largest, concerning fixed assets.

It may be assumed that as a sign of increased capital intensity it will contribute in the next years to a gradual decrease the share of these assets in the national economy.

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ZNACZENIE ROLNICTWA W GOSPODARCE NARODOWEJ KRAJÓW UNII EUROPEJSKIEJ

Streszczenie. Celem artykułu jest rozpoznanie kierunków i dynamiki zmian roli rolnictwa w gospodarce narodowej w krajach Unii Europejskiej. Zakres czasowy analizy opartej na danych Eurostatu obejmuje lata 2000–2015. Jak wynika z przeprowadzonych badań, następują zmiany w proporcjach między rolnictwem a pozostałymi sektorami gospodarki. Wzrostowi poziomu rozwoju gospodarczego towarzyszył spadek udziału sektora rolnego w tworzeniu PKB i zatrudnieniu ogółem. Jednocześnie, głównie na skutek redukcji liczby pracujących, następował wzrost wydajności pracy w rolnictwie. Jest to widoczne zwłaszcza w wielu państwach, które w 2004 roku i później wstąpiły do UE. Mimo pozytywnych zmian rolnictwo w tych krajach odgrywa wciąż istotną rolę w gospodarce, widoczną zwłaszcza w udziale w zatrudnieniu i posiadaniu produkcyjnego majątku trwałego.

Słowa kluczowe: rolnictwo, gospodarka narodowa, wartość dodana, zatrudnienie, kapitał, Unia Europejska

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