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FARM INCOME SITUATION ACCORDING TO THE ECONOMIC SIZE

Maria Jolanta Orłowska
Bydgoszcz University of Technology and Life Sciences

Abstract. The economic situation of farms has been analyzed according to the economic size. On the basis of data from FADN Farm Accountancy Data Network there has been made an analysis of the income situation of an average Polish and European Union farm. For the need of the analysis, the farms have been divided into 6 classes of economic size (ES6): to 4, 4–8, 8–16, 16–40, 40–100, 100 – and more ESU (European Size Unit). Due to the fact that FADN Standard Results include mean values for identified groups with definite minimal number of agricultural farms, simple methods of analysis of statistical series as well as vertical and horizontal analysis method have been applied. In the work, information from all the farms which used FADN accountancy in the years 2004–2008 has been provided, and for the Polish farms, additionally from the years 2005–2007. The quantity of the earned income was closely correlated with the farm economic size. Along with its rise, the level of earned income increased, as well. However, Farm Net Income exceeding the average net wage[1] in the national economy, in 2004, was reached by Polish farms only of medium small (8–16 ESU) economic size, whereas, in 2008 by a medium large one (16–40 ESU). In large farms (40–100 ESU) and very large (100 ESU and more) in 2008, and additionally, medium large (16–40 ESU), in 2004, the earned income of unpaid labor per head was many times higher than the average net wage. The contribution of subsidies to the size of earned income is constantly growing.

Key words: Economic size, income situation, Farm Net Value Added, Farm Net Income

INTRODUCTION

The years 2004–2009 were characterized by a significant rise of expenses for agricultural policy both from the EU sources and domestic ones, considerable growth of

Corresponding author – Adres do korespondencji: Maria Jolanta Orłowska, Bydgoszcz University of Technology and Life Sciences, Faculty of Agriculture and Biotechnology, Department of Economics and Advising in Agribusiness, ul. Al. Prof. Kaliskiego 7, 85-796 Bydgoszcz, e-mail: orjol@utp.edu.pl

[1] Annual average net wage in the national economy was 23,300 PLN – 6634 EUR in 2008, with an average currency exchange rate for euro (SYS004) in 2008 – 3.5121, whereas in 2004 18,348 PLN (4053 EUR) with an average exchange rate 4.5268.

rural population's income and improvement in the income parity [Wilkin 2010]. Still, the income of Polish farms has been lower than the income of the European Union farms for many years [Zegar 2003, Czyżewski, Henisz, Matuszczak 2004].

Income disparity is a constant characteristic of agriculture. The reasons of this situation can be found in the specificity of agricultural activities. Circulation of capital is slower in agriculture as it is limited by the biological factor, the growth cycle of plants and animals, lower labor efficiency resulting from the dependence of production on changing seasons. The more the consumers' needs are satisfied the bigger barrier is to be faced by the agricultural products. With the increase in the society wealth, the percentage of income spent on food is lower. It involves occurrence of unfavorable price conditions for agriculture. Farmers' labor efficiency depends not only on the number of commodities they have produced but also how many of them have been sold [Moskal 2003]. Factors which largely affect the earned income quantity include: management skills and the ability of adaptation to specific conditions [Poppe and van Mejil 2006].

The economic situation of farms has been studied by many economists who have focused their interest on such issues as the influence of production scale on the earned income [Sznajder 2000; Józwiak, Mirkowska 2006; Cieślik, Żmija 2007]. An improvement in the agrarian structure, increase in the production scale, modernization of technology do not guarantee an improvement of the farm income situation. Agriculture as a sector connected with natural resources is depreciated by the market mechanism which results in an outflow of the Farm Net Value Added to other sectors. This leads straight to income gaps [Woś 1999]. Without intervention, the surplus does not come back to the producer in a natural way. The surplus is retransferred in the form of current subsidies not connected with the production and through payments for agricultural-environmental activities connected with the development of rural areas [Czyżewski 2010].

Agriculture in Poland and in the other countries of the European Union depends more and more on current subsidies and other subventions [Goraj 2009; Sobczyński 2009]. For the first time, the Polish farmers took advantage of current subsidies in 2004. In Poland, in 2004, the farmers' incomes rose by about 2/3, as compared to 2003. It was, approximately in 70%, the result of a beneficial for agriculture relation of the products prices to production means and good weather conditions for plant cultivation. The remaining part of the income increase was due to current subsidies [Józwiak 2005]. The current subsidies for agriculture generate a noticeable income effect. However, there still occurs disparity of incomes to the disadvantage of farmers in the field of payment for labor and the individual income. An advantageous income situation after the accession to the European Union is supposed to get worse due to a decrease in the rise of subsidies. The stream of public financial means directed to agriculture and rural areas after the accession should not be considered as a factor generating income. The earned income should depend on the volume of production, production costs and relations of agricultural products prices. Also transfers to and from farmers are connected with it. However, it is the production potential of a farm and its management efficiency that determine the income level over a longer period of time. These are factors of crucial importance for the whole agriculture [Zegar 2011].

For the needs of this research, there has been accepted a hypothesis assuming that the outflow of the surplus from agriculture grows faster than it is compensated by the subsi-

dies, whereas, the rise of the production scale and management efficiency improvement is too slow which causes that the income parity is not being improved. Therefore, the aim of this study is to make an assessment of earning capability of an average Polish farm, running the Union accountancy, according to the economic size classes, in the first years after the accession. Changes of the potential, the farm efficiency management and importance of subsidies have been analyzed in terms of the obtained income. The economic situation of an average Polish farm according to particular classes of economic size has been presented in comparison with the analogical one in the European Union.

RESEARCH MATERIAL AND METHOD

The main source of information used for the research was FADN[2] data published in the form of Standard Results on the EU website[3]. The data makes it possible to analyze the economic situation of farms within a region or a country and compare farms from different countries regardless of their production and regional diversification [Goraj, Mańko 2009]. In the field of FADN observations there are market farms whose contribution to generation of Farm Value Added in agriculture is of key importance. Variables characterizing farmers in the FADN base are precisely described and defined by appropriate symbols. Also their calculation algorithms are specified. FADN is a system of representative tests based on a precisely elaborated method of selection of a group of farms which have implemented the defined notions, and transparent, multi-step control procedures. These procedures provide the possibility of obtainment of data representative for the defined groups of farms functioning on the territory of the European Union. The data is highly reliable thanks to using the procedures of control and verification. "Standard results FADN = level 1" contain mean values for the identified groups of farms with defined minimal numbers [Goraj, Mańko 2009]. Because of this, it was enough to apply simple methods of statistical series analysis and vertical and horizontal analysis.

For the needs of the analysis, the farms have been grouped into 6 classes of economic size: to 4, 4–8, 8–16, 16–40, 40–100, 100 and more ESU. Economic size is defined as a sum of Standard Gross Margin (SGM[4]) of all farm activities. It is expressed in European Size Units (ESU[5]). After its establishment, the farm is classified into one of the classes of economic size. Classification ES6 (Table 1) has been used in this research.

In this work information from all the farms running FADN accountancy in the years 2004 and 2008, and in case of Polish farms, additionally, from the years 2005–2007 has been used. Total Utilized Agricultural Area, economic size, total number of full time employed persons, and full time employed persons from family have been used for presenta-

[2] Farm Accountancy Data Network – a system of agricultural accountancy introduced after the integration with the European Union.
[3] http://www.ec.europa.eu/agriculture/rica
[4] SGM (Standard Gross Margin) – standard value obtained from one ha of cultivated land or one animal reduced by standard direct costs necessary to create this production in production conditions typical for a given region. The mean values from the last three years are accepted for calculations.
[5] ESU –. European Size Unit.

Table 1. Grouping of farms by economic size (ESU), the ES6 classification
Tabela 1. Grupowanie gospodarstw rolnych według wielkości ekonomicznej (ESU), klasyfikacja ES6

ES6	size in ESU
very small (XS)	< 4
small (S)	4 < 8
medium small (MS)	8 < 16
medium large (ML)	16 < 40
large (L)	40 < 100
very large (XL)	100 i więcej

Source: Goraj et al 2008, p. 13.
Źródło: Goraj i in. 2008, s. 13.

tion of the analyzed farms potential. The income situation of the studied farms has been measured by Farm Net Income calculated per one full time employed person. The assessment of farm management efficiency has been made by means of the Farm Net Value Added per one full time employed person. Also the relation of subsidies with the average Polish farm running FADN accountancy, as compared to the EU one, has been presented. The economic situation of farms has been analyzed in terms of their economic size.

DISCUSSION AND RESULTS

During the studied years the area size of an average Polish farm, being under FADN observations, was systematically increasing. The area of cultivated land, in the years 2004–2008 was, respectively: 15.14 ha, 16.33 ha, 17.01 ha, 17.28 ha and 18.29 ha. It was smaller than the area of analogical EU farms (in 2004 by almost 55%, whereas in 2008 by slightly more than 47%). The area sizes of the studied farms, both the Polish and the EU ones, were diversified, depending on their economic size, in 2004 and 2008. It increased along with the rise of the farm economic size and for the analyzed Polish farms[6]: very small, small, medium small, large, medium large, and very large in 2004, respectively: 6.7 ha, 10.37 ha, 17.18 ha, 32.27 ha, 74.16 ha, 384.84 ha, whereas, in 2008: 7.99 ha, 11.97 ha, 19.65 ha, 36.5 ha, 75.83 ha, 543.89 ha (Table 2).

In 2008, as compared to the accession year, the Total Utilized Agricultural Area increased for all classes of economic size. A farm very large, in terms of economic size, extended most the area of cultivation (by 41.33%) as well as a very small one (by 19.25%). In result of this an average farm in both classes of economic size was larger than analogical ones from the European Union (respectively: very large by 189.36% and very small by 15.46%). In the remaining farms, being under observation of FADN, an increase in the farm area size was reported as well. However, it was inversely proportional to the farm economic size and was, for: small, medium small, medium large and large, respectively: 15.43%, 14.38%, 13.11% and 2.25% (Table 2).

[6] According to ES6 classification.

Table 2. Total Agricultural Area utilized (SE025) (presented in acres) of average farm in Poland and in the EU in the classes of economic size and its changes between 2004 and 2008
Tabela 2. Powierzchnia użytków rolnych (SE025) w ha przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej i jej zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	15.14	6.7	10.37	17.18	32.27	74.16	384.84
	European Union	33.38	7.98	8.75	16.37	35.08	68.93	162.59
2008	Poland	18.29	7.99	11.97	19.65	36.5	75.83	543.89
	European Union	34.61	6.92	12.18	19.88	42.4	78.52	187.96
2008/2004 [2004 r. = 100%]	Poland	120.81	119.25	115.43	114.38	113.11	102.25	141.33
2004 European Union = 100%	Poland/ European Union	45.36	83.96	118.51	104.95	91.99	107.59	236.69
2008 European Union = 100%		52.85	115.46	98.28	98.84	86.08	96.57	289.36

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

Along with the rise of the farm area size, in the years 2004–2008, the economic size of an average Polish farm running FADN accountancy, increased (and for the studied years amounted, respectively: 9.5 ESU, 9.7 ESU, 10 ESU, 9.9 ESU and 10.2 ESU). However, it was significantly lower than for analogical EU farms, in 2004 as well as in 2008 (for which, in the analyzed years, it was respectively: 33.2 and 29.4 ESU). In 2004 also the EU farms were stronger in all classes of economic size, except for very small ones (Table 3).

In 2008, as compared to the accession year, the economic size of a very large Polish farm increased considerably (33.2%). In the remaining farms it either decreased or maintained at the level of 2004. Four years after the accession, only farms very small and very large in terms of economic size, were larger than analogical ones in the European Union (respectively by 24 and almost 28%) (Table 3).

Diversity of the production capacity is caused by the employment rate [Goraj, Mańko 2009]. In an average Polish farm, being under FADN observation, the employment rate was 1.76 AWU[7] and it was slightly higher than in an analogical farm of the European Union (1.64 AWU in 2004 and 1.66 AWU in 2008). In the studied farms, both Polish and those from the EU, in the years 2004 and 2008, the employment rate increased along with a rise in the farm economic size, while in Polish farms, being

[7] AWU – calculation unit for total work (Annual Work Unit).

Table 3. The economic size (SE005) at ESU of average farm in Poland and the EU in the classes of economic size and the changes between 2004 and 2008
Tabela 3. Wielkość ekonomiczna (SE005) w ESU przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej i jej zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	9.5	3.2	5.8	11.3	24.6	57.5	220.8
	European Union	33.2	3.1	6.2	11.8	26.8	64.3	227.6
2008	Poland	10.2	3.1	5.7	11.3	24.8	57.0	294.2
	European Union	29.4	2.5	5.9	11.8	27.2	65.3	230.1
2008/2004 [2004 r. = 100%]	Poland	107.4	96.9	98.3	100.0	100.8	99.1	133.2
2004 European Union = 100%	Poland/ European Union	28.6	103.2	93.5	95.8	91.8	89.4	97.0
2008 European Union = 100%		34.7	124.0	96.6	95.8	91.2	87.3	127.9

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

under FADN observation, it was definitely higher for all economic size classes than those from the European Union (Table 4).

In 2008, as compared to the accession year, the reduction of employment was observed in the Polish very small, small, medium, medium large, and large farm (in terms of economic size), by, respectively: 1.43%, 5.26%, 2.06%, 0.87%, 5.83%. Its considerable rise was noticed only for a very large farm (by almost 77%) (Table 4).

In the years 2004–2008, employment of unpaid labor force in a Polish average farm (family members) was respectively: 1.53 FWU[8], 1.53 FWU, 1.50 FWU, 1.50 FWU and 1.51 FWU. According to Mańko this is a level similar to an average employment rate for family farms which provide job places for about 1.5 person [Goraj, Mańko 2009]. In an average farm of the European Union, employment of the farmer running the farm and their family members was lower and amounted: 1.25 FWU in 2004 and 1.23 FWU in 2008 (Table 5).

Among the Polish farms, analyzed in terms of economic size, it was a very large farm which was characterized by the lowest unpaid labor input (1.31 FWU). Four years after the accession also very large farms were reported to have the lowest unpaid labor input (1.09 FWU). It results from the fact that a significant number of farms in this class is based on hired labor. An average Polish farm, based on FADN accountancy, used hired labor and provided full time employment, in the years 2004–2008, respectively: 0.23, 0.23,

[8] FWU – Family Work Unit.

Table 4. Total labor input (SE010) in the AWU of average farm in Poland and the EU in the classes of economic size and its changes in the years 2004 and 2008
Tabela 4. Nakłady pracy ogółem (SE010) w AWU w przeciętnym gospodarstwie w Polsce i w UE w klasach wielkości ekonomicznej i ich zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	1.76	1.40	1.71	1.94	2.29	3.60	9.35
	European Union	1.64	1.23	1.20	1.32	1.55	1.99	4.86
2008	Poland	1.76	1.38	1.62	1.90	2.27	3.39	16.54
	European Union	1.66	1.27	1.38	1.38	1.57	1.99	4.91
2008/2004 [2004 = = 100%]	Poland	100.00	98.57	94.74	97.94	99.13	94.17	176.90
2004 European Union = 100%	Poland/ European Union	107.32	113.82	142.50	146.97	147.74	180.90	192.39
2008 European Union = 100%		106.02	108.66	117.39	137.68	144.59	170.35	336.86

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

025, 0.24, 0.25. It was lower than in an analogical EU farm which in 2004 employed 0.4 AWU and 0.42 AWU in 2008). A very large, in terms of economic size, Polish farm was characterized by a very high employment of hired labor (7.84 AWU in 2004 and 15.45 AWU in 2008).

In both studied years the highest Unpaid Labor Input was reported for the Polish farm of medium large and large economic size, whereas, in the EU for a large and very large one. In 2008, as compared to the accession year, unpaid labor employment[9] increased for an average Polish farm of each economic size class. However, a medium large farm was an exception. There the situation was just the reverse (rose insignificantly-by 1.08%). In both analyzed years, the number of full time employed persons FWU in an average Polish farm of each economic size class, being under observation of FADN, was higher than for analogical EU farms (except for very large farms in 2008) (Table 5).

In this work, Farm Net Value Added calculated per one full time employed person has been used to make an assessment of the farm management efficiency. Farm Net Value Added represents the effect of people's work. It shows an effected payment of all production factors: land, capital, full labor and management input. It is a measurement of the income earned by all the owners of production factors involved in the activity of an agricultural farm. This measurement, as one of very rare, can be used for an analysis of effects

[9] Unpaid person – concept accepted in FADN, used by IERiGŻ to describe the work of farmer and family members.

Table 5. Unpaid labor input (SE015) in the FWU of an average farm in Poland and the EU in economic size classes and its changes in the years 2004 and 2008
Tabela 5. Nakłady pracy własnej (SE015) w FWU w przeciętnym gospodarstwie w Polsce i w UE w klasach wielkości ekonomicznej i ich zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	1.53	1.31	1.55	1.73	1.86	1.98	1.50
	European Union	1.25	1.16	1.09	1.18	1.29	1.47	1.68
2008	Poland	1.51	1.30	1.50	1.72	1.88	1.97	1.09
	European Union	1.23	1.12	1.23	1.19	1.28	1.41	1.62
2008/2004 [2004 = = 100%]	Poland	98.69	99.24	96.77	99.42	101.08	99.49	72.67
2004 European Union = 100%	Poland/ European Union	122.40	112.93	142.20	146.61	144.19	134.69	89.29
2008 European Union = 100%		122.76	116.07	121.95	144.54	146.88	139.72	67.28

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

of agricultural activity of farms with different structures of production factors ownership [Goraj, Mańko 2009; Goraj et al. 2001]. In the years 2004–2007, in an average Polish farm, being under observation of FADN, a systematic rise in Farm Net Value Added per a full time employed person was reported. In 2008 this value dropped a little, but it was higher than in 2006 (Figure 1).

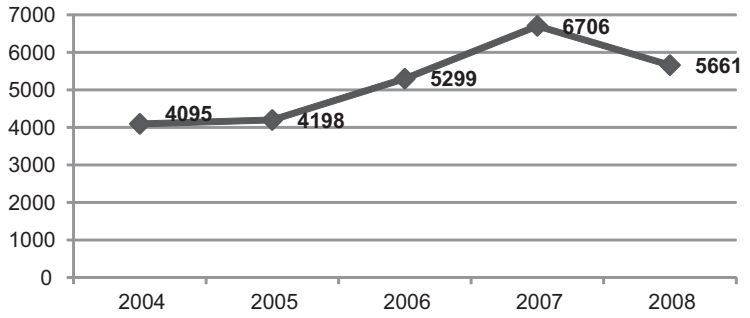

Fig. 1. Farm Net Value Added per fully employed person (SE425) in EUR · AWU^{-1} from an average farm in Poland in 2004–2008
Rys. 1. Wartość dodana netto na osobę pełnozatrudnioną (SE425) w EUR · AWU^{-1} z przeciętnego gospodarstwa w Polsce w latach 2004–2008

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

Farm Net Value Added per full time employed person obtained for an average analyzed farm was significantly lower than for an analogical EU farm (by 75.4% in 2004 and 65% in 2005) (Figure 2, Table 6). It increased along with an increase in the farm economic size. A large Polish farm was an exception in 2008 as it generated higher Farm Net Value Added per one full time employed person than a very large one.

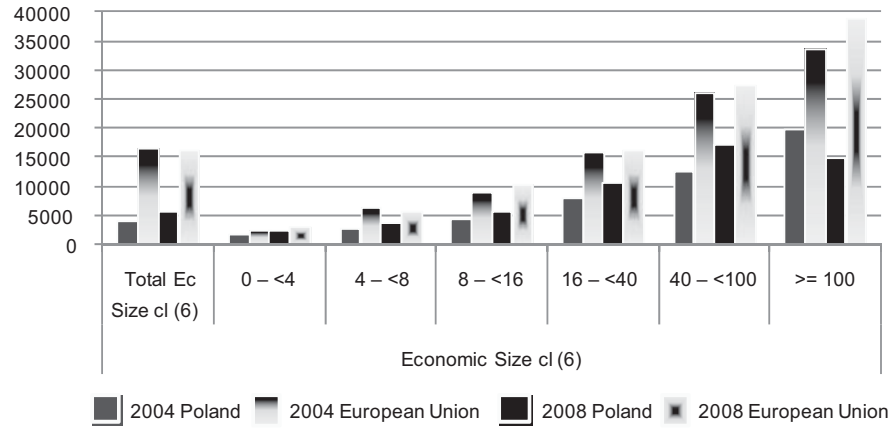

Fig. 2. Farm Net Value Added per fully employed person (SE425) in EUR·AWU^{-1} from an average farm in Poland and the EU for economic size classes between 2004 and 2008

Rys. 2. Wartość dodana netto na osobę pełnozatrudnioną (SE425) w EUR·AWU^{-1} z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej w latach 2004 i 2008

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica

Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

In 2008, as compared to 2004, the farm management efficiency improved in farms with economic size to 100 ESU. Farm Net Value Added per a full time employed person was higher in those farms than in the accession year (in a very small, small, medium small, medium large, large and very large by respectively: 40.7%, 43.6%, 36.1%, 31.3%, 36%). A reverse situation occurred for a very large farm in which a significant deterioration of the farm management efficiency was reported where Farm Net Value Added per a full time employed person decreased by almost 25% (Table 6). It indicates lower labor efficiency in these farms. Low labor efficiency is the biggest problem of the Polish farming as compared to the European Union [Poczta 2010].

In both analyzed years, an average EU farm of each class of economic size operated more efficiently. Farm Net Value Added per full time employed person generated by an average Polish farm, being under observation of FADN, was significantly lower than for an analogical EU farm, in each class of economic size (Table 6).

According to FADN, the farm financial result is Farm Net Income which is the economic surplus for paying the farmer's labor and their own investment in production factors (own capital) (Goraj, Mańko 2009; Goraj et al 2001). Thus, Farm Net Income is supposed to pay for the farmer's labor, provide means for installments, and provide surpluses from own capital invested in the farm and risk connected with its running [Goraj, Mańko 2009].

Table 6. Farm Net Value Added per fully employed person (SE425) in EUR·AWU^{-1} with an average farm in Poland and the EU in the classes of economic size and its changes between 2004 and 2008

Tabela 6. Wartość dodana netto na osobę pełnozatrudnioną (SE425) w EUR·AWU^{-1} z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej i jej zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	4095	1687	2567	4192	8109	12561	19646
	European Union	16647	2344	6291	8900	15914	26178	33842
2008	Poland	5661	2374	3686	5704	10647	17079	14767
	European Union	16167	3158	5607	10201	16314	27539	38831
2008/2004 [2004 = = 100%]	Poland	138.2	140.7	143.6	136.1	131.3	136.0	75.2
2004 European Union = 100%	Poland/ European Union	24.6	72.0	40.8	47.1	51.0	48.0	58.1
2008 European Union = 100%		35.0	75.2	65.7	55.9	65.3	62.0	38.0

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

In an average Polish farm, being under FADN observation, Farm Net Income per full time employed person in 2004–2008 increased (with a slight decrease in 2005) (Figure 3). It was, however, significantly lower than in an analogical EU farm (by 72.1% in 2004 and 57.6% in 2008) (Figure 4, Table 7).

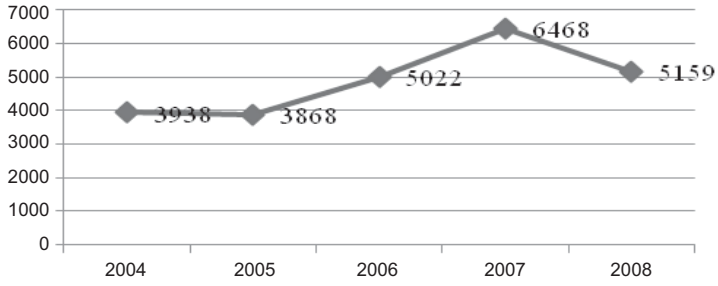

Fig. 3. Farm Net Income per fully employed person (SE430) in EUR·FWU^{-1} with the average farm in Poland in 2004–2008

Rys. 3. Dochód z rodzinnego gospodarstwa rolnego na osobę pełnozatrudnioną rodziny (SE430) w EUR·FWU^{-1} z przeciętnego gospodarstwa w Polsce w latach 2004–2008

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

The amount of Farm Net Income per full time employed person increased along with an increase in the farm economic size. The highest income per full time employed person was obtained by farms whose economic size was very large, whereas the lowest, by very small ones. The relation applies both to Polish and EU farms (Figure 4).

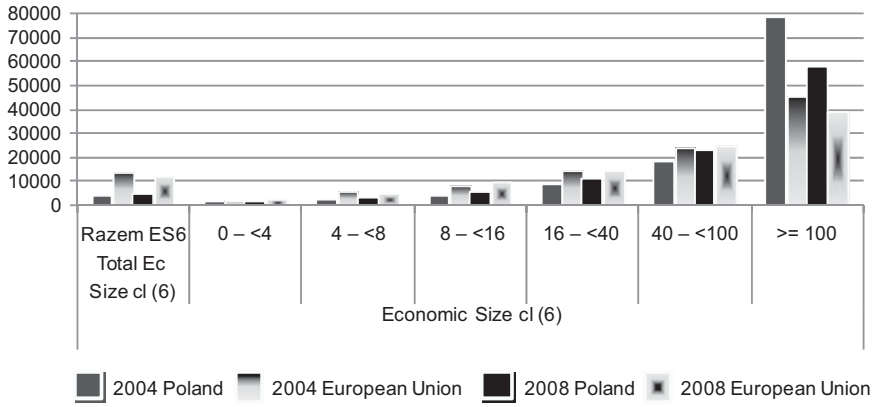

Fig. 4. Farm Net Income per fully employed person (SE430) in EUR·FWU^{-1} with the average farm in Poland and the EU's economic size classes between 2004 and 2008

Rys. 4. Dochód z rodzinnego gospodarstwa rolnego na osobę pełnozatrudnioną rodziny (SE430) w EUR·FWU^{-1} z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej w latach 2004 i 2008

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

Farm Net Income per full time employed person in 2008, as compared to 2004, increased for analyzed Polish farms of most of the economic size classes (very small, small, medium small, medium large, and large, respectively by: 39.3%, 41.8%, 32.5%, 27.6%, 24.4%). One of the factors which contributed to the situation was extension of the area size of farms of each economic class size (very small, small, medium small medium large and large by, respectively: 19.25%, 15.43%, 14.38%, 13.11%, 2.25%). These farms also limited labor input. In spite of an increase in the area size of farms: very small, small and large, their economic size decreased respectively by: 3.1%, 1.7% and 8.9%, while it increased insignificantly by 0.8% for a medium one, and did not change for a medium small. Farm Net Income per full time employed person was reduced only in very large farms (by 26%), although their area size increased by 41.3% and economic size by 33.2%.

However, Farm Net Income exceeding the average net wage in the national economy in the year 2008[10] was reached by a Polish farm only of medium economic size (16–40 ESU) (when in 2004 it was a medium small farm (8–16 ESU). In large and very large farms in 2008, and medium large and very large in 2004, it was many times higher than

[10] Annual average net wage in the national economy was 23,300 pln – 6,634 EUR in 2008, with an average currency exchange rate for Euro (SYS004) in 2008 –3.5121, whereas in 2004 18,348 pln (4,053 eur) with an average exchange rate 4.5268.

the average net wage. In both analyzed years the income which was reached by an average Polish farm for all classes of economic size, with the exception of very large farms, was much lower than for analogical EU farms. A very large Polish farm generated Farm Net Income per a full time employed person in the accession year higher by 71.2%, and in 2008 by 47.5% than that reached by an average EU farm of the same economic size class (Table 7).

Table 7. Farm Net Income per fully employed person (SE430) in EUR·FWU^{-1} with an average farm in Poland and the EU in the classes of economic size and its changes between 2004 and 2008

Tabela 7. Dochód z rodzinnego gospodarstwa rolnego na osobę pełnozatrudnioną rodziny (SE430) w EUR·FWU^{-1} z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej i jego zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	> = 100
2004	Poland	3938	1528	2422	4149	8717	18833	78530
	European Union	14139	2168	5948	8395	14896	24128	45887
2008	Poland	5159	2128	3434	5499	11123	23420	58091
	European Union	12169	3052	5373	9853	14995	24955	39395
2008/2004 [2004 r. = = 100%]	Poland	131.0	139.3	141.8	132.5	127.6	124.4	74.0
2004 European Union = 100%	Poland/ European Union	27.9	70.5	40.7	49.4	58.5	78.1	171.1
2008 European Union = 100%		42.4	69.7	63.9	55.8	74.2	93.8	147.5

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

The relation of balance of subsidies and taxes to Farm Net Income, was significantly higher for an average EU household (where it was 56% in 2004 and in 2008 68%). In an analogical Polish farm it was respectively: 30% and 60.45% (Table 8). In 2004 the relation was higher for an average EU farm of all economic size classes. Four years after the accession the situation changed. In the year 2008, the relation was higher for an average Polish farm: very small, small and very large in terms of economic size than for analogical EU ones (it was, respectively: 89.2%, 63.3% and 188.8%) (Table 8). However, the highest relation of balance of subsidies and taxes to Farm Net Income, in 2004, was characteristic for Polish farms: very small (37.9%) and very large (33.7%) in terms of economic size. The similar situation was reported in 2008, though the order of farms was different: very large (188.8%) and very small (89.2%). If there had been no current subsidies, Farm Net Income of a very large farm would have been negative (Table 8).

Table 8. Balance of current subsidies and taxes (SE600) in Farm Net Income (SE420), of the average farm in Poland and the EU in economic size classes between 2004 and 2008
Tabela 8. Udział salda dopłat i podatków (SE600) w dochodzie z gospodarstwa rolnego (SE420) z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	30.0	37.9	33.4	29.7	24.9	24.4	33.7
	European Union	56.0	57.4	34.4	47.4	56.1	62.6	60.5
2008	Poland	60.4	89.2	63.3	52.0	44.0	43.2	188.8
	European Union	67.9	46.8	59.4	56.5	74.0	75.6	69.2

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

It shows that the binding system of area payments favors very large farms. In the future, a systemic mechanism for current subsidies reduction is to be introduced. This will cause a shift of a part of the means from the economically strongest farms to the small family ones [Czyżewski 2010].

SUMMARY AND CONCLUSION

The above presented correlations apply to commercial farms which are under FADN observation, however, no generalization in reference to the whole population of farms in Poland is recommended. The presented results indicate that subsidies do not compensate the surplus outflow from agriculture. An increase in the production scale of the Polish farms is too slow. Also farm management efficiency in Poland (measured by Farm Net Value Added per full time employed person), significantly departs from that of the European Union. Because of this the income parity has not been improved. A good income situation of very large farms results from the fact that they have developed a specific system of gaining subsidies. Economically smaller households are in a more difficult situation (to 16 ESU). Despite having improved their management efficiency, limiting the number of full time employed persons, extending the farm area size and rising the share of subsidies in the income, they did not reached income allowing to exceed the level of parity of unpaid labor payment.

On the basis of the carried out research, the following conclusions have been formulated:

1. In the analyzed years, the area size of an average farm running the EU accountancy rose for each class of economic size. However, the area size of a very large farm increased most significantly. Although the economic size of a very large farm was reported to have largely increased as well, it did not change for a medium small one,

whereas, it significantly decreased for a very small, small and large farm. Households of all economic size classes reduced the total number of full time employed persons, except for very large farms where its significant increase was reported.

2. Management efficiency measured by Farm Net Value Added per full time employed person increased in 2008, as compared to 2004, it also rose for each economic class size, except for very large farms. However, in both analyzed years it was considerably lower for Polish farms than for analogical EU ones of each economic size class, being under observation of FADN.
3. Farm Net Income per full time employed person, in both studied years, was significantly lower for an average Polish farm than for the analogical one in the EU, regardless of its economic size, except for very large ones.
4. The quantity of Farm Net Income per full time employed person was closely related to the farm economic size. Along with its rise, the level of earned income increased. However, the income exceeding the average net wage in the national economy in the year 2008 was reached by the Polish farms of medium large economic size (16–40 ESU) whereas in 2004 it was a medium small farm (8–16 ESU). In large and very large farms, in 2008, and medium large, large and very large, the income earned in 2004 was significantly (many times) higher than the net average wage.
5. Subsidies are playing a more and more important role in the farm earning capacity. The share of subsidies in Farm Net Income, in 2008, increased significantly for farms of each economic size class. A prosperous situation of a Polish very large farm, in 2008, was connected with high subsidies. If it had not been for the subsidies the farm earned income would have been negative.

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SYTUACJA DOCHODOWA GOSPODARSTW O RÓŻNEJ WIELKOŚCI EKONOMICZNEJ

Streszczenie. Przedmiotem analizy była sytuacja ekonomiczna gospodarstw w różnych klasach wielkości ekonomicznej. Na podstawie danych europejskiego systemu rachunkowości FADN dokonano oceny sytuacji dochodowej przeciętnego gospodarstwa Polski i Unii Europejskiej. Dla potrzeb analizy pogrupowano gospodarstwa według 6 klas wielkości ekonomicznej (ES6): do 4, 4–8, 8–16, 16–40, 40–100, 100 i więcej ESU. Z uwagi na to, że Wyniki Standardowe FADN zawierają wartości średnie dla wyłanianych, o określonej minimalnej liczebności grup gospodarstw rolnych, w badaniach zastosowano najprostsze metody analizy szeregów statystycznych, metody analizy pionowej i poziomej. W pracy wykorzystano informacje ze wszystkich gospodarstw prowadzących rachunkowość FADN w latach 2004 i 2008, a dla gospodarstw polskich dodatkowo z lat 2005–2007. Wysokość wypracowanego dochodu była ściśle skorelowana z wielkością ekonomiczną gospodarstwa. Wraz z jej wzrostem zwiększał się poziom uzyskiwanego dochodu. Jednak dochód na osobę pełnozatrudnioną rodziny przekraczający przeciętne wynagrodzenie netto[11] w gospodarce narodowej w 2004 r. osiągnęło dopiero badane polskie gospodarstwo średnio małe (8–16 ESU)) pod względem wielkości ekonomicznej, natomiast w 2008 r. średnio duże (16–40 ESU). W gospodarstwach dużych (40–100

[11] Roczna płaca netto w gospodarce narodowej wyniosła w 2008 roku 23 300 zł – 6634 EUR przy średnim kursie wymiany jednostki monetarnej kraju członkowskiego na euro (SYS04) w 2008 r. – 3,5121, natomiast w roku 2004 18 348 zł (4053 EUR) przy średnim kursie wymiany 4,5268.

ESU) i bardzo dużych (100 ESU i więcej) w 2008 r. i dodatkowo średnio dużych (16–40 ESU) w 2004 r. uzyskany dochód na osobę pracy nieopłaconej był wielokrotnie wyższy od przeciętnego wynagrodzenia netto. Dla wysokości uzyskiwanego dochodu coraz większego znaczenia nabierają dopłaty.

Słowa kluczowe: wielkość ekonomiczna, sytuacja dochodowa, wartość dodana netto, dochód z rodzinnego gospodarstwa rolnego

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