

# THE INFLUENCE OF DIRECT SUPPORT UNDER COMMON AGRICULTURAL POLICY ON FARM INCOMES IN POLAND

**Agnieszka Judzińska**

*The Institute of Agricultural and Food Economics – National Research Institute, Poland  
e-mail:judzinska@ierigz.waw.pl*

**Abstract:** The main objective of the paper is the analysis of changes on the level of income of agricultural producers, which took place in Poland in the early years of the accession to the EU, as well as a determination of the scale of the impact of financial support under the Common Agricultural Policy on the farm income situation.

Poland's membership in the EU gives rural farms opportunities to improve their economic situation. Financial aid, mainly in the form of a direct payment, has been the main factor determining the economical status of rural farms, whilst the other income making factors, such as improved productivity and increased agricultural production have played a much smaller role.

The increase in revenue has enabled farmers not only to increase current expenditures, but also to carry out modernization efforts, which will determine the future economic and structural situation of the Polish agricultural sector and its competitiveness. However, a strong differentiation in terms of the economic situation of rural farms according to their size and specialization in production was also noticed. As a result, there is a still large number of farms in which the revenues received by farmers are insufficient to assure them adequate life standard. Therefore such farms are not able to both develop and invest. Only economically strong rural farms with high production potential have such opportunities, meaning that EU support will never be able to fully minimize the effects of small-scale production or to offset the insufficient efficiency and productivity of production factors.

**Key words:** farm income, direct payments, CAP, financial support

## Introduction

Polish accession to the European Union changed economic conditions in the Polish agricultural sector significantly. Economic transformations taking place in the first years of integration helped to improve the economic situation of farms and contributed to a marked increase in the income of agricultural producers.

Agricultural income is one of the main economic categories expressing the essential purpose of the production activities of a farm (Zegar, 2001). The standard of living of a farming family depends on the amount of income earned by the farmer, as well as the possibility of the development of a farm (its expanded reproduction), including investment and modernisation activities (Musiał and Mikołajczyk, 2004).

The amount of agricultural income, as opposed to the income of employed persons, varies greatly between different groups of farms. This phenomenon results not only from the differences in the resources of human capital and material production capacity of a farm, but also from the effectiveness of management and environmental conditions (Zegar, 2001). The buffer that mitigates the varied profitability of agricultural production is composed of the mechanisms of the Common

Agricultural Policy (CAP), one of the main goals of which is to ensure an adequate standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture. The main instruments of this policy include direct payments to farmers, which significantly improve the income improvement of the entities in the agricultural sector. The level of income generated by agricultural producers is also dependent on the value of manufactured products, the level of expenditure incurred for the production, as well as the relationship between the prices of agricultural products, and the prices of means of production (the so-called "price scissors"). In the long run the income situation of farmers is determined by the production potential of a farm as well as the efficiency of management of available resources (Józwiak, 2011).

Farms, as market participants, have different scales of efficiency of the conducted activity. This factor is a major source of competitive advantage, providing a farm with a greater share in the income generated in the agricultural sector, better conditions for development, as well as facilitating operation and keeping its position on the market. This diversity is also a key factor in the structural changes in agriculture (Nieżgoda, 2009).

## Materials and methods

The main objective of this study was to analyse changes in the level of income of agricultural producers that took place in Poland in the early years of the accession to the EU, as well as to determine the scale of the impact of non-market support under CAP on the income situation of farms.

The analysis used the relevant literature, secondary data from a sample of farms covered by the FADN (Farm Accountancy Data Network) and primary data obtained from surveys carried out directly on farms. The scope of the analysis is the period 2004–2010<sup>1</sup>. The secondary data was developed using the descriptive method and time series analysis. The analysis of primary data used the method of descriptive statistics. The results are presented in tabular and graphical form.

The basic economic category used for research was the income from a family farm, which is the economic surplus obtained in the course of farm's operations. It is a reward for a farmer for engaging in own production factors in the manufacturing process, i.e. labour, land and capital. The second variable was total subsidies on current operations linked to production (not investments) covering most categories of transfers of aid to farms under the CAP, with the exception of aid for investment and payments for the cessation of farming. This paper presents the results of research for all farms (average of the FADN sample), as well as farms grouped by economic size classes<sup>2</sup> and types of farming.<sup>3</sup>

## Results and discussion

Studies have shown that the amount of cash inflows for total subsidies received by farmers depended mainly on the size of the farm, while its surface area was relatively less important. In 2004–2009, in the FADN sample, the annual aid amounted on average to PLN 12.3 thousand per farm. For the smallest farms (up to 8 ESU), the benefits were much lower than the average. In larger farms (over 16 ESU), subsidies were significantly higher than the average, even 25- times higher on the largest farms (figure 1). The payment rate per 1 ha of agricultural land was inversely correlated with the size of the farm, i.e. the rate per 1 ha decreased with the increase in its size. In 2004–2009, nearly three-quarters of subsidies were for small farms (representing ca. 90% of the study population), economically weak, but in dynamic terms their share decreased by nearly 9 percentage points to the benefit of the largest farms, while the share of the remaining entities in the structure of the EU support distribution has declined.

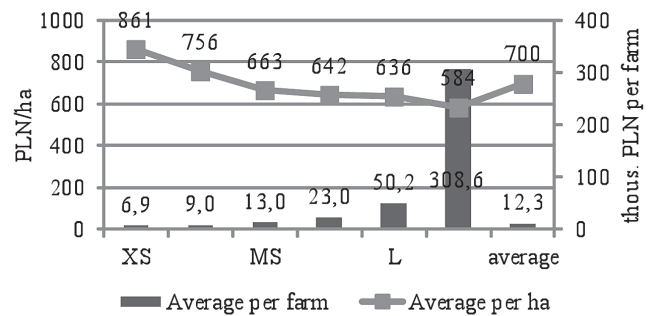


Figure 1. Average annual payment per farm and per 1 ha in 2004–2009 by economic size.

Source: Own calculations based on FADN data.

Although the level of aid to farms was not a direct result of the type of farming, in the breakdown by type of production there were also significant differences in the amount of benefits received (figure 2). In the period analysed, the highest amount of subsidies was given to entities specialising in field crops and the rearing of grazing animals, which resulted primarily from a much larger area of agricultural land in these farms. The lowest benefits per farm were given to beneficiaries specialising in horticultural and permanent crops (orchards). Payments to farms with a predominance of mixed production, prevailing in more than half of the study subjects, were slightly below the average for the whole FADN population.

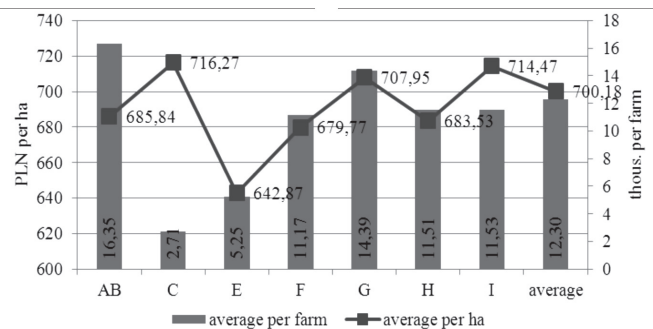


Figure 2. Average annual payment per farm and per 1 ha in 2004–2009 by types of farming

Source: Own calculations based on FADN data.

In the early years of the integration, there was a dynamic growth in the income of Polish agricultural producers (figure 3). In 2007–2009, the average income per farm was PLN 26 thousand, thus 10% higher than in the period immediately after EU accession in 2004. Among all the mechanisms of the CAP, the major determinant of farm income growth was the possibility of obtaining financial support in the form of subsidies to current operations linked to production (not

<sup>1</sup> Due to the change in methodology, the data from FADN for 2010 is not comparable with data for earlier years. Therefore, the analysis was completed using data only up to 2009.

<sup>2</sup> The FADN system distinguishes six classes of economic size of farms: very small (<4ESU), small (4–8ESU), medium small (8–16ESU), medium large (16–40ESU), large (40–100ESU), very large (ESU ≥100). One ESU corresponds to equivalence of 1200 EUR.

<sup>3</sup> Seven types of farming appearing in Poland: field crops (AB), horticulture (C), permanent crops (E), milk production (F), grazing animals (G), granivores (H), mixed production (I).

investments). In 2004–2007, the average rate of their growth was over 426%. Indicators relating to production, its efficiency and costs had a relatively weaker impact on the income situation of farms. The value of revenues increased in this time somewhat faster than the cost of manufacturing, which had been linked to technological progress, increased efficiency, replacement of more expensive means of production with cheaper ones, as well as improvement of the agrarian structure of farms. The increase in revenue was also due to favourable shaping of the price scissors index, as well as the favourable exchange rate of the euro, since this determines the actual amount of subsidies.

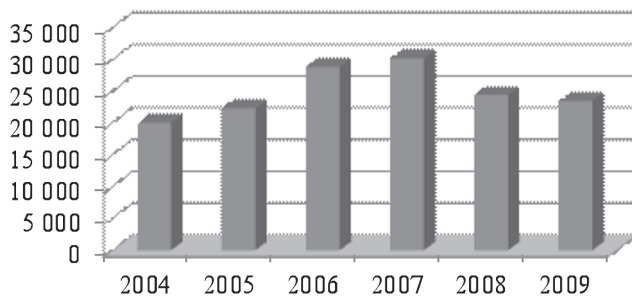


Figure 3. The average income of a family farm (in PLN)

Source: Own calculations based on FADN data.

The constant upward trend in the income of agricultural producers, observed in the first years of integration, was halted after 2007. In 2008–2009, the average family farm income fell by an average of about 12% per year. This was a result of a visible market downturn, reflected in a slowdown in both production and trade turnover, caused for example by significant growth in production factors. Unfavourable economic phenomena have been accompanied by a constant increase in the level of EU support, which increased in this period by a further 113%. As a result of dynamic growth in the level of EU subsidies, their role in income generation in the agricultural sector has gradually increased. In the first year of accession, subsidies to current operations constituted on average 13% of farm income, while in 2005–2008, this share amounted to 52%, and in 2009 it exceeded 80%.

The study showed strong differences in income levels between the examined groups of farms. There was a strong relationship between family farmers' income and the economic size of a farm, as well as the direction of production (type of farming). The value of family farm income increased alongside the economic size which resulted mainly from the properties of the support system (subsidies paid to UAA), as well as from the diverse manufacturing capabilities (available resources, infrastructure, etc.) between different groups of farms. Throughout the analysed period, the average income on very large farms (over 100 ESU) was nearly 25 times higher than on very small farms and small farms (representing two thirds of the surveyed population). This means that the very large farms, as compared to other groups of farms, experienced significantly greater development opportunities and chances of gaining a lasting competitive advantage.

Nevertheless, in 2007–2009 in relation to the early years of integration, the largest farms were the only ones that reported losses from economic activities. A decline in income (by nearly 28%) was the result of a high rate of growth of production costs, which was almost twice as high as the increase in the value of production. Positive growth occurred in other groups, with the highest (65%) observed in the group of very small farms.

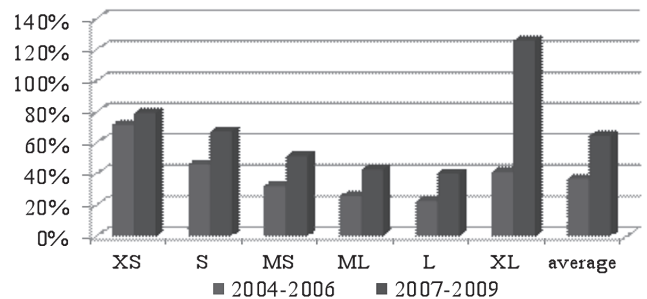


Figure 4. The ratio of subsidies to the family farm according to economic size classes

Source: Own calculations based on FADN data.

In the period analysed, all farms grouped by economic size noted a growth in the share of subsidies to current operations in creating income from the farm (figure 4). This process has proceeded fastest in the largest entities with a large area of agricultural land. The smallest increase was noted in the share of support for family farm income on the smallest farms. In both groups, compared with the other classes of farms, the average ratio of payments to the farm income were the highest. It can therefore be concluded that, in the case of the smallest entities, subsidies were necessary for the maintenance of the farm and farmer's family, and in the case of large entities they were used as a means to cover the cost of production. In other groups of entities, the importance and the share of subsidies in the income of agricultural producers decreased with an increase in economic size. For this group of subjects, external support was only a supplement of income in relation to the production (market) activity.

The research carried out shows that the size of the income of agricultural producers to a large extent was determined by profitability and scale of production, its intensification and the degree of processing, as well as market orientation of the farm. For this reason, in 2004–2009 the highest income was achieved by farmers specialising in granivores breeding and horticulture. Slightly lower revenue was achieved by dairy farms and farms specialising in other grazing livestock. The worst economic situation was registered in farms with mixed production profile which constitute more than half of the surveyed population. Low profitability of this type of production (including a low ratio of price to the unit cost, e.g. of cereals) and low levels of processing meant that it was the only group of entities obtaining income below the average of the FADN field of observation.

In the dynamic approach, in the comparable periods the revenue growth was observed in the majority of farm groups

divided according to types of farming, with the highest rate of growth (20–30%) characteristic of farms specialising in field crops and milk production. The main driver for the significant improvement in the income situation in the two groups of subjects was the large increase in production growth determined by increase in demand and prices of commodities produced. In mixed farms and grazing animals-oriented farms the value of family farm income increased on average by 7–12% per year. In turn, the income situation of farmers with permanent crops has deteriorated (by ca. 10%).

payments determined the level of income from horticultural farms, as well as those focused on livestock production, mainly breeding granivores. These entities were able to obtain a much higher income, for example due to more efficient and intensive production and the higher market competitiveness of An unequal apportionment of direct support between farms and the different scale of its impacts on the economic situation of the family farm were also confirmed by the results of the surveys. Among the surveyed farms, nearly 95% received direct support. In the studied population, the average value of direct payments (which constitute the most important form of support) per farm was PLN 8,843. A quarter of farms obtained payments not exceeding PLN 2.5 thousand (lower quartile), and a quarter received payments of more than PLN 10.4 thousand (upper quartile), whereas for half of the respondents support was less than PLN 5 thousand. The asymmetry factor was positive, which indicates a positive skewness of the distribution, i.e. the advantage of values smaller than average, and its value indicated a very large variation in this direction. The kurtosis indicator signalled a clear peakness of the distribution. Almost 94% of the surveyed farms that responded belonged to the typical area of characteristic variation, i.e. received payment not exceeding PLN 24.5 thousand (figure 6).

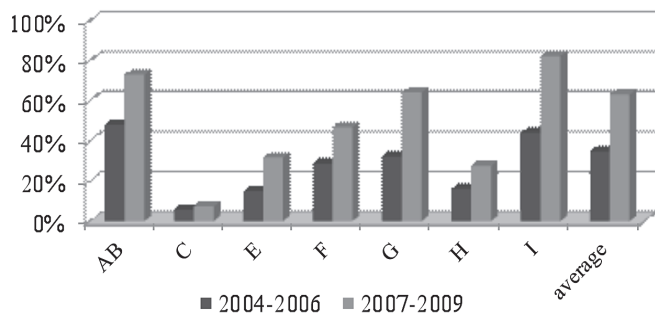


Figure 5. The ratio of subsidies to the family farm according to types of farming

Source: Own calculations based on FADN data.

The analysis reveals that the non-market support was the most important for farms with production based mainly on land resources for which complementary payments were given (figure 5). This phenomenon was most evident on farms with mixed production, where in the period of 2007–2009 total subsidies accounted for 82% of income, compared to 44% immediately after the accession. High rates of subsidies compared to production-generated income were also reported on farms specialising in field crops and other grazing livestock. These farms, despite the large area of agricultural land, were characterised by low profitability and weak links with the market. However, to a much lesser extent, the

The average area under direct payments was 11.5 ha, giving an average of PLN 714 per ha. As in the case of the amount of these benefits, the distribution of this variable is positively skewed and pointed. Three-quarters of farms received payments for an area not exceeding 13.5 ha, and half of farms for an area up to 7.0 ha. In a typical area of variation (up to 29.4 ha) there were over 91% of the surveyed farms.

Nearly 60% of farmers indicated the great importance of direct support to the farm income, and only 12% a lack thereof. The impact of other instruments such as market intervention, agri-environmental and trade regulations was little or none. The vast majority of respondents (80%) expressed negative opinions about the role of the CAP mechanisms, including direct support, as a factor stabilising income from agricultural activities. However, the proportion of positive ratings on income stabilisation (20%) was more than twice as high as the ratings on markets stabilisation.

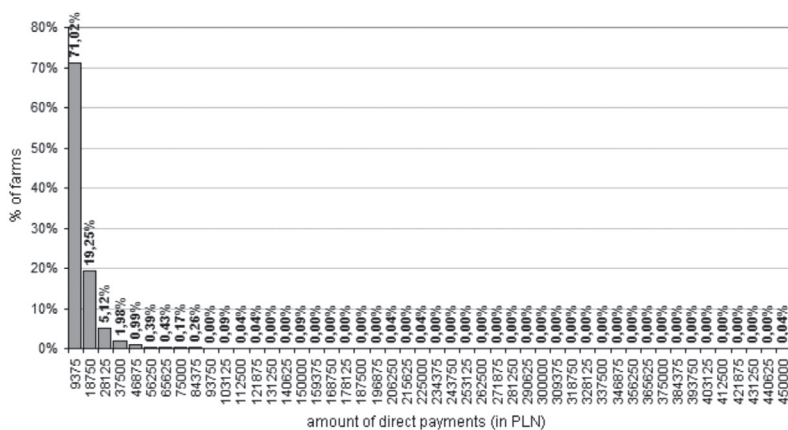


Figure 6. The amount of direct payments in 2010 – interval series histogram\*

\*Figures shown on the horizontal axis represent the upper limits of the interval series ranges for characteristic (variable).

### Conclusions

In the early years of integration with the European Union, there was a significant change in the economic situation of Polish agriculture, manifested, for example in the dynamic growth of the income of agricultural producers. The role of the CAP mechanisms in these transformations, in particular the subsidies to current operations, has been undisputed. This was confirmed by both the results of the Polish FADN data analysis and the opinions of farmers themselves. The influence of direct payments is diverse and, to an extent,

Source: Own calculation based on Annex 2 of the survey “Family and Farm” IAFE-NRI.

contradictory. On the one hand, direct payments boost the farmers' income, stabilise their situation and encourage them to enlarge their farms. On the other hand, they cause agricultural producers to lose interest in improving management efficiency and cost rationalisation. The above factors explain why, despite major changes, the agrarian structure of Polish farms is still fragmented and widely polarised.

Looking at the distribution of support in the agricultural, one should note that it is a very good reflection of the conditions characteristic of Polish agriculture. On the one hand, the majority (almost half) of support goes to a large number of small farms, i.e. the units that are not able to develop in the long-term, regardless of whether they use the support or not. On farms with little economic power and a small area of agricultural land the limited scale of production does not allow for realisation of consumption on the parity level, nor for investment activity. Therefore, this group of farms shows no major change in production. Such farms not adjust production to changing market conditions, or do so to a much lesser degree. Moreover, the increased access to subsidies does not change their weak position in the food chain. This implies that the EU support will never be able to fully offset the effects of small-scale production, or limit efficiency and productivity of production factors (Czubak et al., 2008). This situation raises, at least, some questions about the definition of the objectives of agricultural policy, and the usefulness and effectiveness of support.

At the other extreme, a relatively small number of larger units is receiving very high benefits, but their share in the total sum of support to the sector is relatively small. It is this group of economically strong farms with high production potential, that increasingly determines the market supply of agricultural products and food in the country and in will the future determine the competitiveness of Polish agriculture in international markets.

It can therefore be argued that as a such, due to high agrarian fragmentation of the majority of Polish farms, the CAP only impacts on a small part of our agriculture, at least in terms of improving the income condition of farms, efficiency of agricultural activity and competitiveness of the agricultural sector. Its impact, for the most part, is a distinctly social one. (Judzińska and Łopaciuk, 2012).

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