



**INSTITUTE OF AGRICULTURAL
AND FOOD ECONOMICS
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CAP implementation in Poland – state and perspectives

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**COMPETITIVENESS OF THE POLISH FOOD
ECONOMY UNDER THE CONDITIONS OF
GLOBALIZATION AND EUROPEAN INTEGRATION**

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Collective work ed. by dr Marek Wigier

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This publication was prepared within the IAFE-NRI Multi-Annual Program 2011-2014 “Competitiveness of the Polish food economy in the conditions of globalization and European integration”, as a contribution to the research on the following subject **Analysis of the effects of selected instruments of Common Agricultural Policy and Rural Development Policy** within the framework of the research task *Variant analysis of the impact of CAP instruments on the changes in agriculture and rural areas*.

The purpose of doing business in agriculture is to achieve the best possible economic effect with the available factors of production. Production factors, which are determined by their quantity and quality, create a definite production potential. Socio-economic transformations that took place in Poland in the period of EU membership caused a number of structural changes in the resources and distribution of production factors in agriculture. As compared to other sectors of the economy the changes in the agricultural sector seem relatively the most significant ones. The main objective of the study is an analysis of some effects of the common agricultural policy implementation in Poland. The presented material includes presentation of the importance of the direct payments in agriculture in the regional perspective, the effectiveness of regional and structural policy instruments affecting the development of entrepreneurship and the potential changes in the distribution of public funds in the field of pillar I of the CAP after 2013. In the conclusion the authors present the long-term objectives of the Polish agricultural policy, the state and perspectives concerning the EU funds distribution between selected objectives, territorial dimension of intervention and challenges related to the competitiveness and innovations.

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1. Introduction

The best mechanism for increasing the effectiveness of management is the market mechanism. It is responsible for the pro-effective selection of economic entities by awarding strong producers who lower the costs and are flexible in adapting to new market conditions. In its essence, the market has, however, certain weaknesses. Governments try to apply an intervention policy that prevents the development of crises. However, such a policy is usually implemented with some delay in relation to the market effects that have already arisen, which sometimes augments unfavourable macroeconomic phenomena. It also disturbs the logic of market functioning, as it gives rise to inevitable contradictions in regulatory mechanisms, weakens the motivation of market actors to engage in effective action, most often only generating adaptability effects manifested in the pressure on further interventions, more and more favourable to those actors, or finally, generates high costs of intervention, borne by the consumer and the tax-payer.

The contemporary global economy often rejects the thesis on the perfect market¹ thereby justifying the role of state intervention. When explaining the main reasons for intervention in the modern global agriculture J.E. Stiglitz² and J. Wilkin³ point to the high level of risk linked to agricultural activity and lack of efficiency as regards prevention of this risk. This risk results from e.g. changing climate conditions, lack of sufficient information and underdevelopment of agribusiness structures, including also consultancy. The need for interventions in the agribusiness sector is justified also by: the phenomena of external costs and effects, low price elasticity of supply, lower level of labour productivity than in other sectors of the national economy, low mobility of the workforce employed in agriculture, the need to provide public goods, implementation of the sustainable development concept.

The global experiences prove that the market and the state have to co-exist and the state intervention should be always limited to support market

¹ A. Czyżewski, *Makroekonomiczne uwarunkowania rozwoju sektora rolnego*, [in:] A. Czyżewski (ed.), *Uniwersalia polityki rolnej w gospodarce rynkowej – ujęcie makro i mikroekonomiczne*, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań 2007, p. 24 and the following pages.

² J.E. Stiglitz, *Some theoretical Aspects of Agricultural Policies*, The World Bank Research Observer 1987, Vol 2, No. 1, January, p. 52.

³ J. Wilkin, *Interwencjonizm państwowy w rolnictwie: dlaczego był, jest i będzie*, [in:] *Materials from the conference „Dostosowania polskiego rynku rolnego do wymogów Unii Europejskiej”*, ARR, Warszawa 2003, p. 27 and the following pages.

mechanism and not replacement thereof. The state should interfere only when it has a clear advantage over the market mechanism; hence only when the market fails to protect the general interests of the society⁴. In the agricultural sector the intervention is manifested by state's involvement in the shaping of agricultural prices, awarding different types of investment grants or through the establishment of norms and standards.

The CAP constitutes an example of state intervention in the agricultural sector, which among its instruments has market-based instruments (referring to supply and demand regulation) and non-market instruments (direct and indirect grants). The market-based instruments, related to price support, favour the biggest producers, in particular the most productive ones and producers of goods. Thus they fail to meet the criterion of fairness and providing support to the weaker as the reason for intervention⁵. The rural development programmes are an example of non-market instruments. As an instrument of state intervention policy they provide an opportunity to stabilise the policy in several production cycles. They stimulate changes as regards the production structures, competitiveness improvement, environmental protection and multi-functional development of rural areas. Thus they constitute the basic instrument supporting the process of food economy and rural areas modernisation.

The integration with the EU created new conditions in Poland for the development of agriculture and food industry. Since 2002 the agro-food economy has been supported with the resources of programmes co-financed from the EU budget that penetrate and complement each other. These financial resources intended for agriculture development and paid from the EU budget may be divided into four groups according to their impact on growth and structural changes in agriculture:

- entirely direct impact: modernisation of farms, early retirements and diversification of agricultural activity, setting up of young farmers;
- entirely indirect impact: infrastructure, land drainage, land re-parcelling, afforestation, agri-environmental schemes, advisory services;
- partly direct impact: direct payments, support for agricultural activity in less-favoured areas (LFA), market intervention expenditure, establishment of agricultural producer groups, establishment of micro-enterprises;
- partly indirect impact: quality of life on rural areas, support to processing industry, PHARE programmes, LEADER programme, village renewal, training, technical assistance.

⁴ A. Woś, *Transformacja polskiego sektora żywnościowego*, IERiGŻ, Warszawa 1995.

⁵ W. Rembisz, *Krytyczna analiza podstaw i ewolucji interwencji w rolnictwie*, Współczesna Ekonomia 2010, No 4(16), p. 10.

The total value of financial aid programmes (together with direct payments) for the agri-food sector and rural areas from the beginning of 2002 until the end of 2013 exceeded PLN 190 billion⁶. This comprises of SAPARD⁷ payments – ca. PLN 4.5 billion⁸, SOP “Agriculture”⁹ – ca. PLN 6.6 billion, RDP¹⁰ 2004-2006 – ca. PLN 10.9 billion¹¹, SOP 2004-2006 “Fish” – ca. PLN 1.1 billion, RDP 2007-2013 – PLN 52.7 billion¹², SOP 2007-2013 “Fish” – ca. PLN 2.4 billion, almost PLN 93 billion from direct payments and about PLN 19.5 billion from national aid. The SAPARD programme aimed at preparing the Polish agri-food sector to the accession, especially as regards the adjustments to the sanitary, hygienic and environmental protection requirements of the EU. After 2004 the strategic objectives of the agricultural policy cover: competitiveness improvement of the agri-food sector, sustainable development of rural areas, improvement of the state of the natural environment, improvement of the quality of life and diversification of the economy on rural areas.

As a result in the last decade the structural changes taking place in the Polish agriculture, food industry and rural areas became more dynamic. The most important among them cover: a drop in the number of farms with simultaneous growth in the share of the largest farms, which directly influences the increase in the average area of farms, drop in employment in agriculture and progressing production concentration and specialisation. The structural changes are, however, slow and cannot be efficiently accelerated due to non-agricultural circumstances. The Polish agriculture is still characterised by a strong polarization of the agrarian structure. A group of market holdings emerged, which are strong economically and able to compete within the EU. Market orientation of agricultural producers increased. The progressive decapitalization of fixed assets of agricultural holdings is a major problem.

Despite structural changes, sometimes very deep, the Polish agriculture remains an important sector of our Polish economy. This is, primarily, confirmed by the structure of employment and structure of land use. The sector plays an especially important role as it comes to social and economic development of rural

⁶ All financial information concerning the implementation of programs financed by the EU are derived from monitoring data of the Agency for Restructuring and Modernisation of Agriculture, www.armir.gov.pl, 1 Euro = 4 PLN.

⁷ Special Accession Programme for Agriculture and Rural Development – SAPARD.

⁸ The amount covers PLN 468 million of payments financed from the RDP 2004-2006.

⁹ Sectorial Operational Program “Restructuring and Modernisation of the Food Sector and Rural Development 2004-2006”.

¹⁰ Rural Development Plan.

¹¹ The amount does not cover payments from the SAPARD commitments and the payments of commitments moved to be financed from RDP 2007-2013.

¹² Together with the commitments of the RDP 2004-2006 – ca. PLN 9.2 billion.

areas. Since agriculture uses over half of the total area of the country for economic purposes, it sets the main functions and directions of land use and shapes the natural environment and landscape. The agricultural sector remains the place of work for almost 15% of the total number of working people. However, the number of people working in agriculture points to negative relations between the labour resources and land and capital resources thereby causing low efficiency of labour. On the other hand, from the perspective of Gross Domestic Product (GDP) generation the significance of the agricultural sector in Poland is decreasing. The share of agriculture (including hunting and forestry) in GDP has dropped from ca. 9% in 1990 to 4% in 2003 and 3.2% in 2012. The share of agriculture in replacement and increasing of the assets remains significantly smaller. Investment inputs for this purpose are shaped below 2%, which inevitably leads to further decrease in the role of agriculture as owner of fixed assets in the national economy.

The current structural transformations in the Polish agriculture are an effect of multiple factors, both the ones associated with economic cycles, geopolitical ones and the current generation-related changes. Both macroeconomic conditions that arise from the presence within EU structures and the presence within the Single Market and State aid programmes addressed to the agri-food sector under the CAP contribute to it. The process of concentration of production and concentration of land takes place first of all by the market transactions of agricultural land. To a much lesser degree, the transformations result from the transfer of agricultural holdings within a family because in such a case the land is perceived not as a form of production, but as assets that is transferred a generation by generation. The inflow of EU funds from the EU was an important incentive that triggered structural changes and hence the improvement of the effectiveness of farming and the competitiveness of agriculture. However, the public policy instruments currently in use, which were supposed to promote convergence of the regions, are not able to prevent their polarisation. Even an increasing economic and spatial polarisation can be seen. Economic disparities between commercial farms with strong links to the market increase and the farms that produce mainly for self-supply and are social in their nature. The development distance between rich regions or the ones becoming richer and the poor regions clearly gets larger. Rich areas develop due to the use of their potential and economic situation whereas the poor areas are stuck in stagnation.

The impact of individual CAP instruments is different. It ranges from the greatest impact – that of direct payments – to the slight significance of programmes supporting semi-subsistence farms or structural pension having only a minimal coverage. The direct payments introduced in the 2004 are the main

instrument of support to the agricultural sector. In the 2007-2012 period, an average of ca. 45% of agricultural income came from direct payments. Combination of direct payments and cross compliance requirements causes that this form of support plays the key role in providing basic public goods through sustainable agricultural land management (maintaining environmental quality of the landscape, biodiversity, access to water, climate stability and air quality) or public goods not related to the environment (activity in rural areas).

A serious question to reflect upon is the distribution of payments between large and small holdings. Now, we have to deal with a small group of large holdings, which receive very large support. In 2012, 0.1% of the beneficiaries received more than EUR 100,000, and payments for them represented 16% of all direct payments paid. At the same time, 80% of the beneficiaries received below EUR 5,000 (20% of all direct support). Granted support increases farmers' income, and it is impossible to convince them to change their decisions taken in relation to their holdings. Level of support for large holdings seems to be too high to be treated only as income support. This is even justified in the theory of economics. Namely, large producers benefit more from the economy of scale than small producers and, therefore, the level of support must be proportional to the size of a farm. Meanwhile, small producers who may have great influence on the activity of rural areas (especially with its fragmented agrarian structure) and on other public goods may need greater support. In addition, there appears to be a serious disparity between the large administrative burden of support availability in relation to money received.

The debate ongoing on the EU forum and concerning the future of the CAP after 2013 indicates that this policy will play a key role in ensuring food safety, sustainable development of agriculture and rural areas, as well as natural resources management. It will be oriented at new Community challenges, for instance, related to: resources protection, climate change, water resources management, biodiversity, renewable energy or risk and crisis management. Still, food safety will remain the key challenge for the food sector not only in the EU, but all over the world. By 2050 global population figures will grow up to 9 billion making it necessary to increase food production by 70%, while the availability of scarce resources, particularly water, energy and land will be limited. This implies a growing pressure of the global markets on increasing the food production, risk of price fluctuations on agri-food markets, greater pressure on the natural resources. Food, just like in the past centuries will be of strategic significance. The future agriculture in Poland should take into account the aforementioned challenges.

Rural development policy should continue to take into account issues related to the development of basic services for the rural economy and population and the creation of new jobs in non-agricultural sectors of the economy. In Poland, about 25% of rural gminas still have poorly developed technical infrastructure and a low level of development of non-agricultural economic activities. This, in turn, will create a barrier to absorption of labour released from agriculture as a result of measures to improve the competitiveness of agricultural holdings, which should lead to an increase in labour productivity. The lack of a well developed technical infrastructure can also contribute to the deterioration of environmental quality and can offset the positive effects in the form of its improvement, which will be achieved from the use of pro-environmental policy instruments for rural development. Consequently, the use of the environment's assets for the development of non-agricultural economic activities will also be limited e.g. different forms of tourism.

Achieving sustainable development of rural areas requires a harmonious development of all types of enterprises. In addition, job creation for the rural population does not have to be limited to the territory of a gmina meeting certain criteria. Jobs for rural population are very often offered by enterprises established in powiat or voivodeship towns/cities. It must therefore be possible to use resources intended for creating jobs for the rural population to support enterprises carrying out or taking up economic activity in major cities. The efficiency of the use of resources in this way may be much greater, especially if one takes into account the greater competitiveness of enterprises operating in urban centres, which stems from their location. However, this kind of approach to creating jobs for the rural population should be the result of local and regional development strategies. The rural development policy should, nonetheless, encourage the use of this kind of solutions.

However, in the future state aid should play a less significant role in the shaping of the pace and direction of investments. The state taking over the role of the regulator will force specific patterns of behaviour on economic entities. The beneficiaries using public funds will, by definition, be in a more favourable position as compared to those who do not obtain such grants. But the resulting substitution and income effects can cause a drop in efficiency and thereby competitiveness in the long-term perspective.

The study aims at familiarising the reader with the issues of Common Agricultural Policy through the viewpoint of effects of its implementation with reference to the economic situation of farms and development of entrepreneurship on rural areas. This monograph constitutes a part of research conducted by the Institute of Agricultural and Food Economics – National Research Institute

(IAFE-NRI) as of 2011 under the Multi-Annual Programme “Competitiveness of the Polish food economy in the conditions of globalization and European integration” in the topic regarding analysis of selected instruments of Common Agricultural Policy and Rural Development Policy. It presents e.g. deliberations on the significance of direct payments for farms. Regional research was conducted on the basis of the FADN system data. Moreover, it covers analysis of the effects of regional and structural policy implementation with reference to the problems of entrepreneurship development on rural areas. Referring to the future of agricultural policy the study presents the scenarios of potential CAP changes after 2013, demonstrates the impact on economic situation of farms and dynamics of their revenue depending on the type and size of a farm. Finally, the paper presents strategic objectives of the CAP in Poland with a view to 2020. The authors of the study are aware of the fact that these are only selected issues which by all means do not exhaust the subject. At the same time, we want to encourage all readers to familiarise with the study and contact us giving us your comments and an incentive for further creative work.

2. The importance of direct payments in Polish agriculture in the regional perspective

2.1. Introduction

Reducing the interference of agricultural policy regulation with market mechanisms has become one of the priorities of the European Union, particularly in the last decade, when a new system of support was implemented (2005), which was the most radical change in the regulation of the CAP in its history. In the new system the level of support depended rather on the historical level of yields and crop area than on the current level of production, prices, or consumption of the means of production. Such a radical change in the system of sector support, as expected, was supposed to exert and in fact did exert an enormous impact on European markets and agriculture.

In the wake of this, literature more frequently featured voices talking about the system's influence on farmers' decisions and thus on production. Initially, scientists, mainly from the U.S., questioned the lack of effect of "decoupled payments" on production. In numerous works, they provided evidence on the links (direct and indirect) between such type of support and the farmers' decisions concerning what to produce and how¹³. Similar voices could also be heard much earlier though¹⁴.

The term "decoupled payments" is based on two main sources – the arrangements of the Uruguay Round (RU) (Annex 2.6) and the work of the OECD¹⁵. According to RU, such payments should meet numerous criteria:

- provision should be based on defined criteria for accessibility: status of the producer or landowner, the consumption of means production or production itself, income in a particular baseline period;
- payments in a given year should not result from the pursuit of specific activity and the size after the baseline period,

¹³ B. Goodwin, A. Mishra, *Are "decoupled" farm program payments really decoupled?, An empirical evaluation*, American Journal of Agricultural Economics 2006, vol. 88(1), pp. 73-89; J. Peckham, J. Kropp, *Decoupled Direct Payments Under Base and Yield Updating Uncertainty: An Investigation of Agro Chemical Use*, paper presented at the annual meeting of Agricultural and Applied Economics Association, Denver, Colorado, 2010.

¹⁴ J.M. Alston, B.H. Hurd, *Some Neglected Social Costs of Government Spending in Farm Programs*, Amer. J. Agr. Econ. 1990, no. 70, pp. 149-156.

¹⁵ P. Cahill, *Calculating the rate of decoupling for crops under cap/oilseeds reform*, Journal of Agricultural Economics, vol. 48(3), pp. 349-378.

- payments in a given year should not result from the level of prices of agricultural products on the domestic or international markets after the baseline period,
- payments in a given year should not result from the level of use of means of production consumed after the baseline period,
- conducting agricultural production is not necessary to receive payments.

In contrast, the OECD defines decoupling in terms of the effects of regulation of agricultural policy which are fully decoupled, if they do not have an impact on production decisions relating to direct payments for farmers – beneficiaries. The latter approach is much less restrictive – both the level of production and foreign trade remain unchanged (undisturbed). However, this does not preclude changes in the shape of the supply and demand curves¹⁶.

Many forms of direct support remain within a narrow range in accordance with the criteria established in the RU, but at the same time they generate allocation effects, i.e. just the opposite to decoupling. The literature usually refers to five main channels through which decoupled payments have impact on production:

- risk of running agricultural activity;
- loans market;
- allocation of labour force;
- agricultural land value;
- expectations as to the future shape of payments.

Decoupled (direct) payments translate into the risk related to running agricultural activity in two ways – firstly by reducing the risk aversion of farmers, and secondly by reducing its level¹⁷. This type of payments is independent of the level of production and consumption of means of production and, in principle, is not subject to yearly changes. Therefore, it is a factor stabilising income, and thus nothing but a reduction of the risk level. This way it also leads to declining the risk aversion. Henessy¹⁸ suggests that in order to limit the impact on the risk, the amount of direct payments must be constant regardless of risk sources.

Direct payments may affect the investment decisions of farmers because they are a source of additional funds, allowing for the generation of more funds and hence for increasing investments. Farmers whose capability is limited by the lack of capital, when receiving direct payments increase their credit score. Cre-

¹⁶ A. Bhaskar, J.C. Beghin, *How coupled are decoupled farm payments? A review of the evidence*, Iowa State University, Department of Economics Working Paper Series, working paper no 07021, Ames, Iowa 2009.

¹⁷ D. Henessy, *The production effects of agricultural income policies under uncertainty*, American Journal of Agricultural Economics, vol. 80(1), pp. 46-57.

¹⁸ Ibidem.

ditworthiness can also be increased by an increase in the value of household assets, including land, which can be used as a collateral for loan transactions¹⁹.

Direct payments can have quite a strong impact on the labour market through farmers' decisions regarding labour supply, namely whether it should be addressed outside of the farm or not. From the point of view of farmers working in agriculture and in other sectors have different characteristics. Farmers can benefit from working on a farm in other ways than just the financial income, and revenues from direct payments cause an increase in the supply of labour directed to the farm²⁰. Proceeds from the direct support increase the liquidity of those farms where managers decide to reduce the supply of their labour outside the farm. The scale of the impact will vary depending on the production technology and other forms of support.

Decoupled support is capitalized on agricultural land, both through higher land prices and the cost of lease, even in the long term. This, in turn, in addition to the impact on the credit market, creates much higher barriers to entry and exit, through a negative impact on the market of agricultural land – inhibiting the trade in agricultural land. Due to higher prices and revenues from lease, owners are even less prone to sell land (their readiness to sell is already low). On the other hand, the possibilities to purchase land are also decreasing. In countries with fragmented agriculture this leads to slowing down the effects of adverse changes in the agrarian structure.

Decoupled payments also influence farmers' decisions through certain expectations of the latter in relation to the future shape of the support. While waiting for concrete changes, farmers make certain decisions in order to adapt the portfolio of their activities to maximize the proceeds from payments.

These considerations shed a different light on decoupling than the one presented at the time of planning. It was believed then that the interference of this form of support at the market and thus the decision-making processes of farmers was minimal, which to some extent was true. In comparison with the previous system of income support payments, decoupled payments created the least incentives to increase production and had a much smaller impact on international trade²¹.

¹⁹ B. Goodwin, A. Mishra, *Are "decoupled" farm program...*, op. cit., pp. 73-89; J. Peckham, J. Kropp, *Decoupled Direct Payments...*, op. cit.

²⁰ N. Key, R. Roberts, *Nonpecuniary benefits to farming: Implications for supply response to decoupled payments*, *American Journal of Agricultural Economics*, vol. 91(1), pp. 1-18.

²¹ J. Rude, *Production Effects of the EU's Single Farm Payment*, CATPRN, Edmonton, September 2007.

The approach to the essence of decoupled payments was quite different however. They were seen as a transitional mechanism on the route towards the competitiveness of the agri-food sector, or as another support program characterised by a lesser degree of protectionism and distortion of international trade. They were also seen as a way to transfer income to agricultural producers, but over time were also given a wider context – payments for the maintenance of public goods, such as the environment.

Direct payments were faced with diverse conditions (economic situation, the structure of markets, etc.), both in individual countries throughout the EU and in Poland²². In addition, the methods of their implementation were quite different. Payment systems differed among the old and new Member States, where the simplified system was applied. For that reason there can be no uniform CAP. In fact, EU-15 and new Member States started off from a different point. Large differences were in fact in the historical level and methods of support to agriculture between the old Member States, and countries just joining the EU. Poland was also among them, with its polarised agrarian structure with a high degree of fragmentation.

During the 10 years of Polish membership in the EU, very big changes took place in Polish agriculture. In part, they were a continuation of the changes started in the transition period, as well as part of global changes and adjustments in world agriculture. The importance of CAP in the transformations of the Polish agricultural sector was and is undeniable. It transpired e.g. from the increase in the level of financial support given to the sector, which first caused an increase in agricultural income. This is confirmed by both the analysis of CSO data and government agencies, and Polish FADN as well as the opinions of farmers. Therefore, this paper focuses to a large extent on the issue of direct support.

2.2. Subsidies for operational activity according to the Polish FADN data

Agriculture is one of the sectors of the economy in which income derived by the manufacturers is significantly lower than in other sectors. This is the effect of depreciating the agricultural economy by market mechanisms, resulting in the relatively low prices of basic agricultural products²³. To ensure the appropriate level of life among the rural population, it is therefore necessary to in-

²² M. Brady, P. Ekman, E. Rabinowicz, *Impact of decoupling and Modulation in the European Union: A Sectoral and Farm Level Assessment*, Synthesis of research conducted under IDEMA (SSPE-CT-2003-5021171) presented during the OECD workshop, Paris, March 2010.

²³ J.St. Zegar, *Przesłanki i uwarunkowania polityki kształtowania dochodów w rolnictwie*, IERiGŻ, Warszawa 2001, pp. 108-109.

crease the income of people working in agriculture, using, among others, mechanisms for their support. It is important, however, to use forms of intervention that minimise the additional costs²⁴.

Direct payments are now without a doubt, the main form of support to agriculture under the CAP. This instrument next to the stabilisation and increasing the income of agricultural producers also serves other functions which may include, e.g., compensating for the increase in costs of production, stimulating the development of agricultural production, accelerating changes taking place on farms, as well as providing information on decisions taken by farmers and directions of production²⁵.

Direct subsidies have a significant impact on the economic situation of Polish agriculture, as well as increase the possibility of its development. Farm support through direct payments not only contributes to the increase in the value of agricultural production, but above all to continuous improvement of the income of the agricultural entrepreneurs. Complementary payments are also important for the value of agricultural production and profitability of farms. They allow for an increase in agricultural income, not only on farms focused on plant production, but also in companies specialising in animal breeding.

It is believed that linking payments with the surface of a farm to a lesser extent distorts the operation of market mechanisms than it did in the case of subsidies linked to production²⁶. Direct support on the one hand guarantees a high and stable farm income, while on the other weakens the tendency of farmers to save and reduces their interest in improving management efficiency and rationalising costs²⁷.

According to FADN methodology used in 2004-2009, the variable “subsidies for operational activity” consists of most categories of transfers of assistance to farms under the CAP, excluding investment subsidies and payments for cessation of agricultural activity. This variable contains the following types of payments:

- Subsidies for crop production – compensatory payments, area payments, set-aside premiums and other subsidies for crop production;

²⁴ R. Kisiel, K. Babuchowska, R. Marks-Bielska, *Gospodarstwa rolne Polski Wschodniej i skłonność ich właścicieli do inwestowania z wykorzystaniem instrumentów wspólnej polityki rolnej*, PTE, Toruń 2012, pp. 115-116.

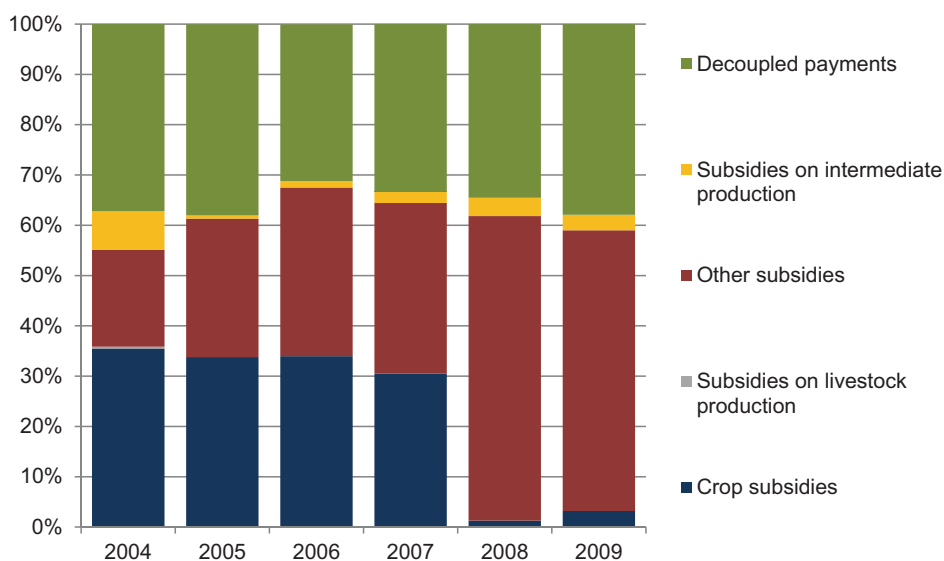
²⁵ Ibidem, pp. 135-136.

²⁶ Z.W. Puślecki, *Uwarunkowania finansowania WPR po 2013 roku*, [in:] *Polityka rolna Unii Europejskiej po 2013 roku*, UKiE, Departament Polityki Integracyjnej, Warszawa 2008, p. 74.

²⁷ A. Zawojska, *Spoleczno-ekonomiczne aspekty dopłat bezpośrednich w UE*, *Roczniki Naukowe SERiA* 2006, vol. VII, no. 4, Poznań, p. 401.

- Subsidies for livestock production – payments for animals and products of animal origin (including milk) and other payments for livestock production;
- Other subsidies/payments – agri-environmental subsidies, payments for less favoured areas (LFA), as well as other payments intended for the rural development;
- Subsidies on intermediate consumption;
- Subsidies on external factors’ costs;
- Decoupled payments – single area payment (SAP), additional support following from the modulation of direct payments.

Figure 2.1. The structure of payments to operational activity of agricultural holdings covered by FADN



Source: own calculations based on FADN data.

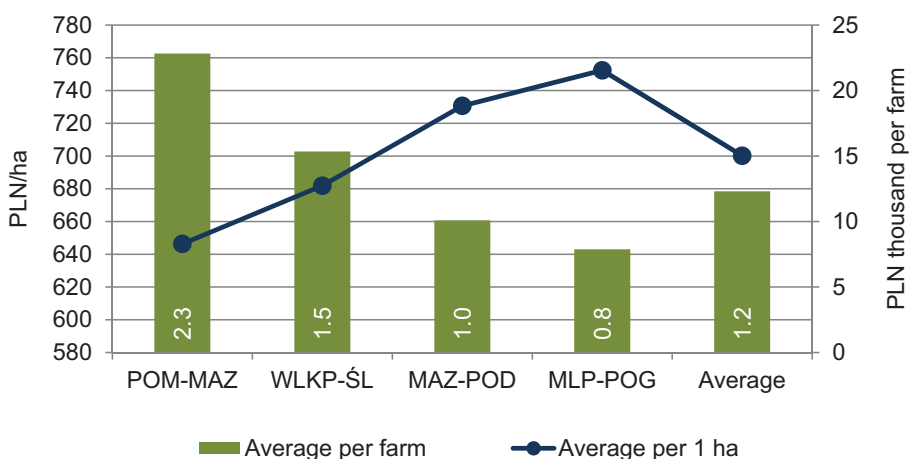
This variable, covering a large part of allocation for farms, is therefore not synonymous with commonly used phrases such as direct subsidies, direct payments, or direct support, which in fact represent only a component thereof. For the purposes of this study for the variable “subsidies for operational activity” abbreviated terms such as “subsidies”, “payments” or “benefits” were used. In the analyzed period three types of support prevailed in the structure of payments: payments not linked to production (decoupled), payments for crop production, and especially in the years 2008-2009 the remaining payments, which in the above-mentioned period “absorbed” a large part of subsidies for crop production (Figure 2.1).

2.3. Subsidies by FADN regions

In 2004-2009 the average amount of benefits attributable to one farm in particular regions of the FADN²⁸ was highly diverse. The highest support was directed to beneficiaries from regions of Pomorze and Mazury and Wielkopolska and Śląsk, while the lowest of the regions of Mazowsze and Podlasie and Małopolska and Pogórze. At the same time, the spread between the amount of benefits in the region of Pomorze and Mazury (22.8 thousand PLN/farm per year), and the region of Małopolska and Pogórze (7.9 thousand PLN/farm per year) was nearly threefold (Figure 2.2).

The amount of support per holding was inversely correlated with its level per 1 ha of agricultural land. In this respect, the highest rates were recorded in the region of Małopolska and Pogórze, where beneficiaries received for an average of 1 ha the amount of PLN 747, i.e. nearly 100 PLN/ha more than in the region of Pomorze and Mazury, where rates were lowest. Differences in the rates per 1 ha resulted from the fact that the share of payments other than the SAPS and CNDP in the east and south of the country is much larger. Beneficiaries in these areas often receive LFA payments, or environmental payments.

Figure 2.2. Average annual level of payments per farm and per 1 ha of UAA in 2004-2009, by FADN regions



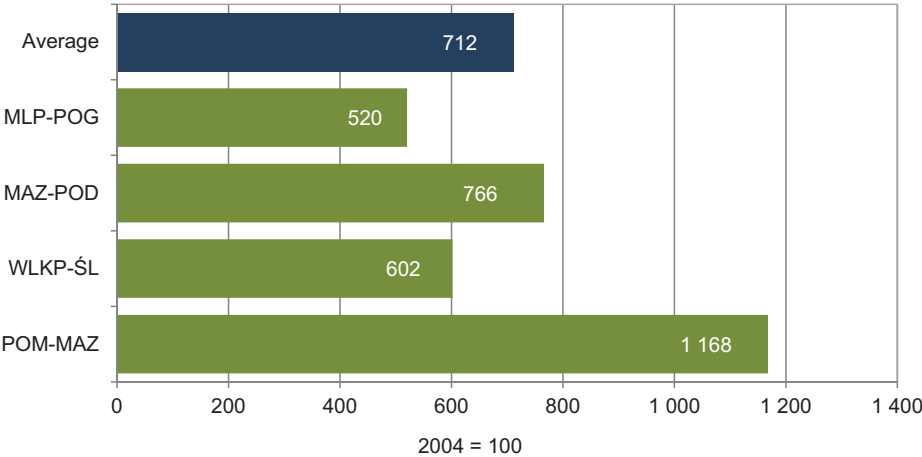
Source: own calculations based on FADN data.

²⁸ Pomorze and Mazury (POM-MAZ) – warmińsko-mazurskie, pomorskie, zachodniopomorskie, lubuskie; Wielkopolska and Śląsk (WLKP-ŚL) – kujawsko-pomorskie, wielkopolskie, dolnośląskie, opolskie; Mazowsze and Podlasie (MAZ-POD) – łódzkie, mazowieckie, podlaskie, lubelskie; Małopolska and Pogórze (MLP-POG) – śląskie, małopolskie, świętokrzyskie, podkarpackie.

Thus, these differences are related to the characteristics of a more economic, natural and social conditions of the region. For this reason, the scale of the impact of payments to agriculture in different regions is different, and the changes are taking place in different directions. Regions, where there is a higher level of agriculture and the agrarian structure is better, undergo more considerable changes in agriculture. In regions where market agriculture prevails, the average support for the farms is larger than in the less developed regions in this respect. Stronger economic farms have more leeway when it comes to changes in production or implementation of new technologies, etc.

The analysis of the changes in the relative amount of subsidies in the dynamic perspective shows that the gaps between regions with lower than the national average level of subsidies, and the regions that are more developed in this regard deepen considerably, especially in the case of Pomorze and Mazury (Figure 2.3).

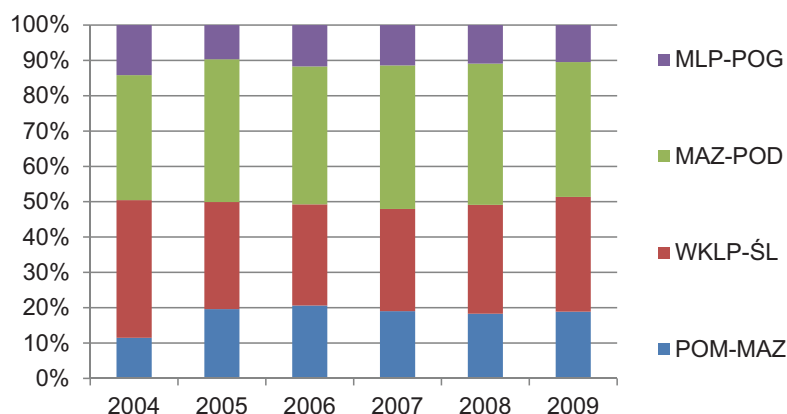
Figure 2.3. Increase in the level of payments per farm, by FADN regions in 2004-2009 (nominal)



Source: own calculations based on FADN data.

In 2004-2009 the subsidies in the region of Pomorze and Mazury grew the fastest. Their growth rate was about twice higher than in regions where there was the smallest increase in support (Wielkopolska and Śląsk and Małopolska and Pogórze), as well as significantly higher than the average. The growth of benefits per 1 ha of UAA developed quite similarly.

Figure 2.4. Distribution of payments for operational activity, by FADN regions



Source: own calculations based on FADN data.

The conducted analysis revealed significant disproportion in the distribution of payments among different FADN regions. Approximately 70% of subsidies was directed to regions of Mazowsze and Podlasie, and Wielkopolska and Śląsk. The remaining part of the support went mostly to the beneficiaries of Pomorze and Mazury region (about 20%) and to a lesser extent (about 10%) to the farmers in the region of Małopolska and Pogórze (Figure 2.4). These differences arise from the uneven distribution of the number of farms and their acreage.

2.4. Changes in the level of payments for operational activity in regional perspective by economic size

The conducted analysis showed considerable differences in terms of the level of payments for operational activity among farms of a given economic size. The amount of money received by beneficiaries depended primarily on the average size of all holdings in the given FADN region. The average area of arable land, which was the basis for the calculation of eligibility for the different types of payments, played a less significant role.

A clear division of the country emerged, reflecting the size and agrarian structure of farms. Maximum annual benefits per farm were allocated to farmers from the north-western Poland (regions of Pomorze and Mazury and Wielkopolska and Śląsk), while in the centre and east of the country (regions of Mazowsze and Podlasie and Małopolska and Pogórze) the benefits were the lowest.

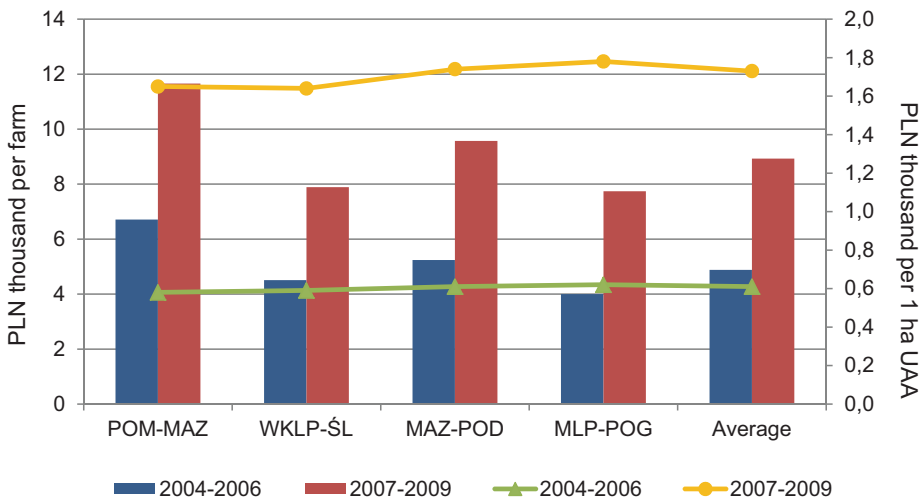
Very small farms

In 2004-2009 the amount of subsidies for operational activity in very small farms averaged 6.9 thousand PLN per holding per year. In the region of Pomorze and Mazury the amount of support was much higher (about 30%) than the national average, and comparable to that in Mazowsze and Podlasie. In the rest of the country the subsidies received by the beneficiaries were significantly lower than the average, mostly the Małopolska and Pogórze.

In the analysed period farmers with very small farms up to 1 ha of UAA received an average of PLN 861. Regional variation in this category of support was not large, however noticeable. The amount of the payments per 1 ha was inversely correlated with the level of support per farm. In this respect, the beneficiaries received the highest benefits in region Małopolska and Podkarpacie, the lowest in the area of Pomorze and Mazury (Figure 2.5.).

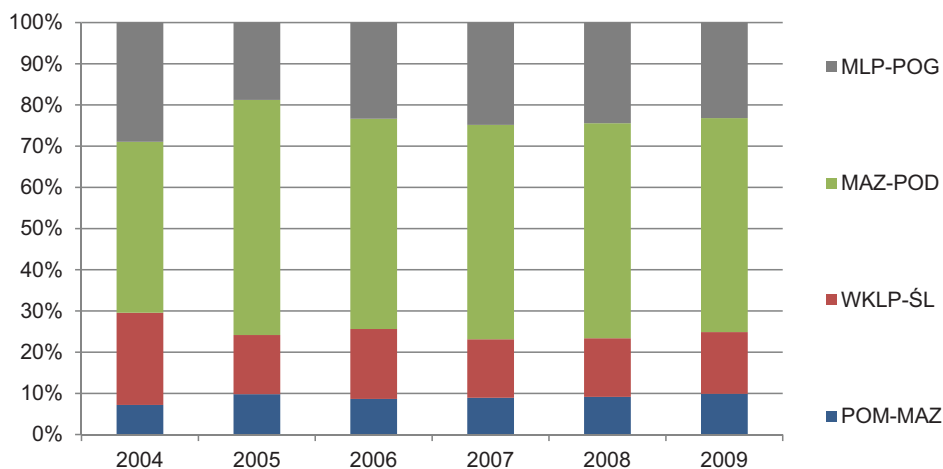
According to the analysis of changes in the level of subsidies from a dynamic perspective, the greatest (almost 2-fold) increase was observed in very small farms from Małopolska and Pogórze. At the same time, growth rate was higher in terms of both the dynamics recorded in other parts of the country, and the average for the whole population. In the region of Mazowsze and Podlasie subsidies grew at a rate similar to the average. In contrast, their value increased slowly in the north-western parts of the country.

Figure 2.5. Average level of payments in very small farms, by FADN regions



Source: own calculations based on FADN data.

Figure 2.6. Distribution of subsidies for operational activity in very small farms, by FADN regions



Source: own calculations based on FADN data.

The amount of benefits per 1 ha increased at a similar rate as the value of subsidies per farm. In this respect, the level of payments increased the fastest (by 87%) in Małopolska and Pogórze, while the slowest (about 77%) in the region of Wielkopolska and Śląsk.

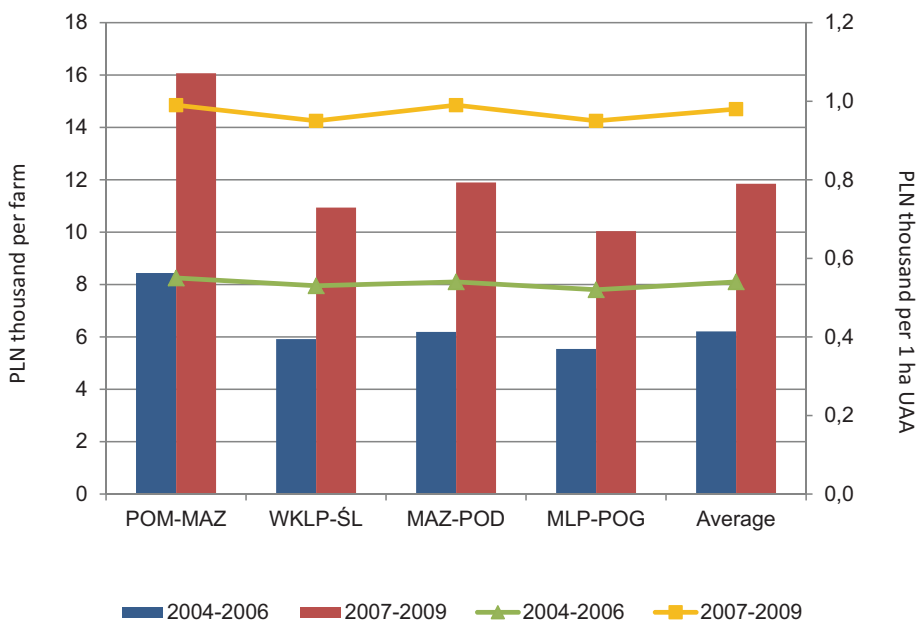
Distribution of payments between very small farms showed that more than half of the total amount of support was received by farmers from Mazowsze and Podlasie region, i.e. region with the highest number of farms of this size. In the southern and western Poland farms received 24% and 16% of the total payments. The smallest amount of benefits was directed to agricultural holdings from Pomorze and Mazury (Figure 2.6).

Small farms

In 2004-2009, the highest payments in this group of farms were received by farmers from Pomorze and Mazury – they amounted to an average of 12.3 thousand PLN per holding per year and were more than three thousand PLN higher than the average for the entire tested population. Such high revenues resulted primarily from a large area of arable land and grassland which were available to farms in this region of Poland. The lowest level of benefits was recorded on farms from Małopolska and Pogórze (7.8 thousand PLN) characterised by the smallest area of UAA of all groups of analysed farms. In the rest of the country the average amount of payments remained at the level of 8-9 thousand

PLN. Average amount of support per 1 ha was correlated similarly as the amount of subsidies per 1 farm, where its level was less varied regionally (Figure 2.7.).

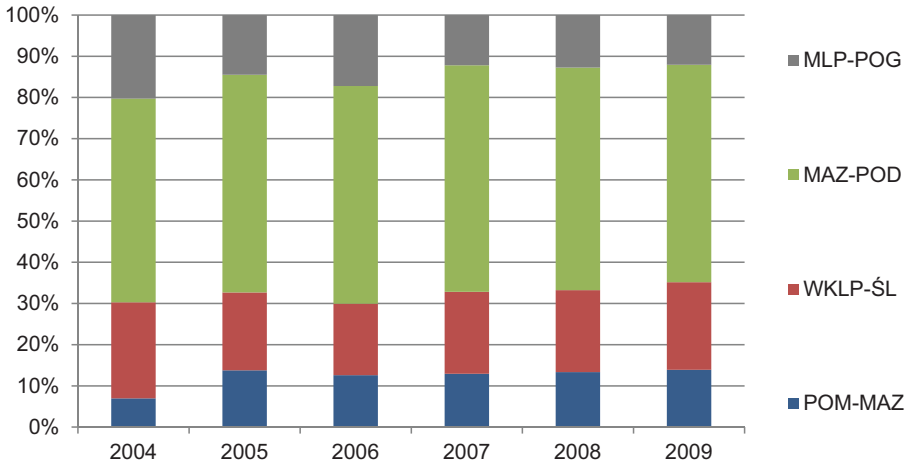
Figure 2.7. Average level of payments in small farms, by FADN regions



Source: own calculations based on FADN data.

Analysis of changes in the relative level of support in terms of dynamics showed that in 2007-2009, as compared to the first years after integration, the average level of subsidies in this group of farms increased by 91% on average. The dynamics of their growth slightly exceeded the average for the area of Mazowsze and Podlasie, while in Pomorze and Mazury it was close to that average. In the other two regions, the growth scale was lower than the average, mostly in Małopolska and Pogórze. In comparable periods, the growth rate of benefits per 1 ha was virtually identical all over the country and amounted to 81% on average.

Figure 2.8. Distribution of subsidies for operational activity in small farms, by FADN regions



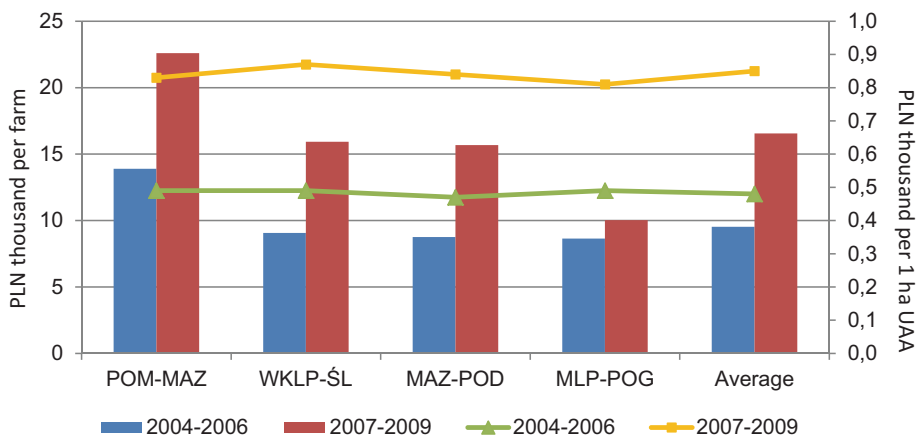
Source: own calculations based on FADN data.

The analysis of the distribution of payments among small farms shows that nearly 53% of all subsidies was allocated to beneficiaries from Mazowsze and Podlasie, and 20% to farms from Wielkopolska and Śląsk, where ca. 75% of all farms in this size group are located. In contrast, the smallest part of the support (ca. 12%) was allocated to farmers from Pomorze and Mazury (Figure 2.8).

Medium-small farms

In the first years after the integration, in the group of medium-small farms the highest payments were allocated to farms in Pomorze and Mazury. They amounted to an average of 18.2 thousand PLN per holding per year, and thus were more than 40% higher than the average from the FADN field of observation. In other FADN regions, support allocated to beneficiaries was clearly lower. The levels of payment that were closest to the average were allocated to farms in the western part of the country. In eastern Poland, the average value of benefits to one holding was approximately 12.5 thousand PLN, while in Małopolska and Podkarpackie its level did not exceed 11.5 thousand PLN. In dynamic terms, in the same period, the level of subsidies increased the most in Mazowsze and Podlasie (by 80%), while in the north and south of the country dynamics of its growth was considerably lower (increase by only 18%) (Figure 2.9).

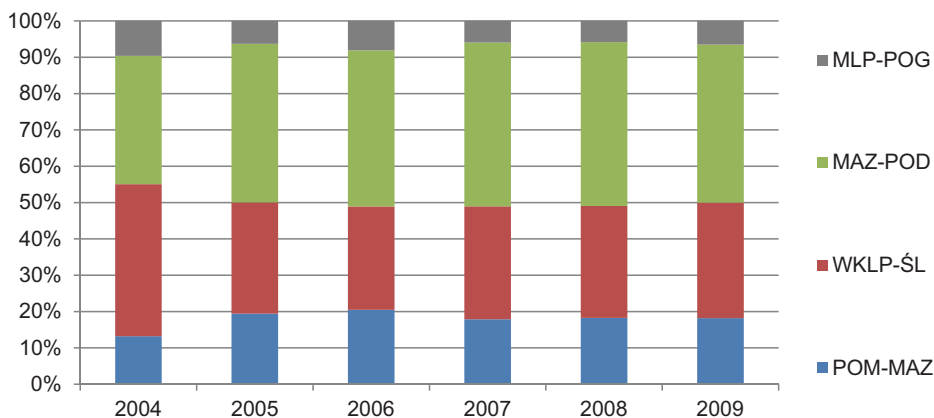
Figure 2.9. Average level of payments in medium-small farms, by FADN regions



Source: own calculations based on FADN data.

The level of subsidies per 1 ha in the entire country was practically uniform and amounted on average to 663 PLN. Beneficiaries from Wielkopolska and Śląsk received slightly higher subsidies than the average, while farmers from Małopolska and Pogórze – slightly lower payments than the average. The growth rate of the amount of support per 1 ha was similar to growth rate of payments per farm. Their level increased the most in the region of Mazowsze and Podlasie and Wielkopolska and Śląsk (about 81%). While the rest of the country increase the amount of this category of payments amounted to an average of 63-66%.

Figure 2.10. Distribution of subsidies for operational activity in medium-small farms, by FADN regions



Source: own calculations based on FADN data.

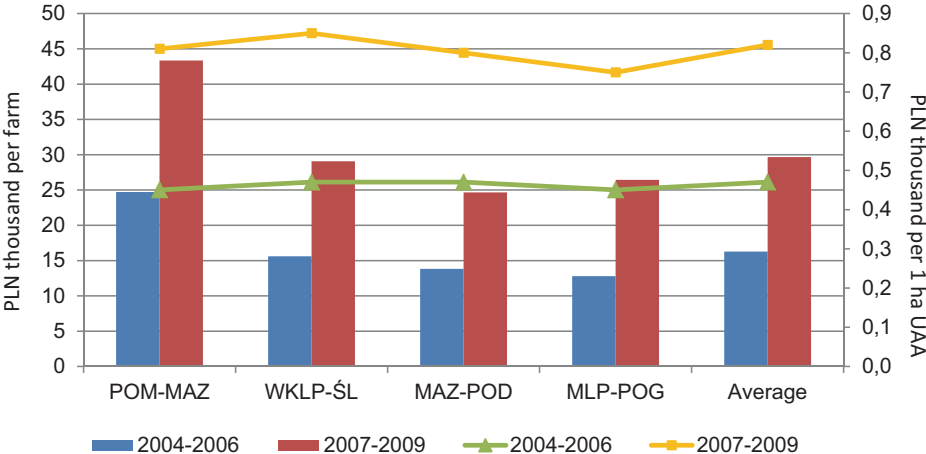
Considerable differences in the distribution of the total amount of payments among farms from different regions of the FADN were observed also in this group of agricultural holdings. The analysis shows that almost $\frac{3}{4}$ of the total support received by farmers from Mazowsze and Podlasie and Wielkopolska and Śląsk. In southern Poland, beneficiaries received only 7% of the total amount of subsidies (Figure 2.10).

Medium-large farms

In 2004-2009 the average annual level of subsidies for operational activity in medium-large farms amounted to 23 thousand PLN per holding. In the region of Pomorze and Mazury the amount of support was much higher than the average (by almost half), and comparable to the area of Wielkopolska and Śląsk. In the south-eastern part of the country the farms received on average a much lower level of subsidies (about 19.5 thousand PLN).

Analysis of changes in the relative level of subsidies (dynamically) showed that in terms of direction and intensity, those levels were quite similarly shaped as those for very small farms. In the comparable periods the average amount of benefits on one farm in the FADN regions, increased on average by 82%. In Małopolska and Pogórze dynamics of its growth exceeded the average (about one quarter), while in Wielkopolska and Śląsk they remained close to it. In the rest of the country the scale of the support increase was lower than average, particularly in the region of Pomorze and Mazury, where it amounted to 75%.

Figure 2.11. Average level of payments in medium-large farms, by FADN regions

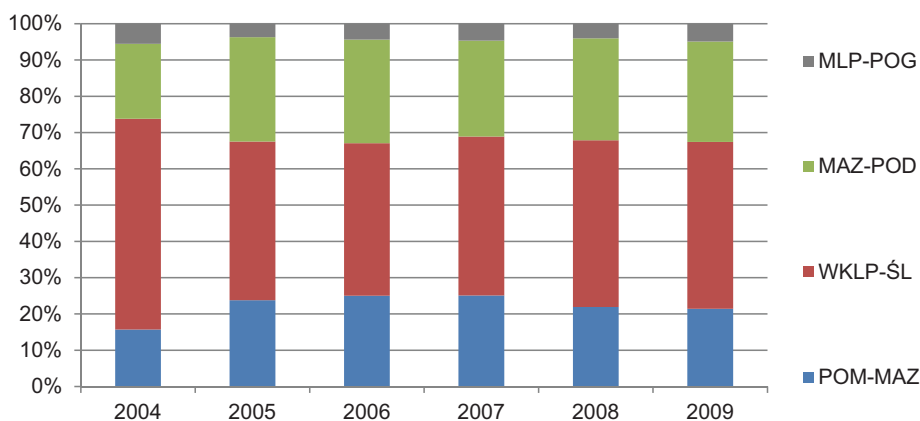


Source: own calculations based on FADN data.

In the analysed period, medium-large farms obtained support per 1 ha of UAA at the level of 642 PLN on average. In this respect, the highest payments were allocated to farmers from the region of Wielkopolska and Śląsk, where they amounted to an average of 660 PLN/ha, i.e. almost 60 PLN/ha more than in Małopolska and Pogórze, where the level of support was the lowest (Figure 2.11).

Comparison of the level of subsidies per 1 ha in a dynamic perspective showed that the fastest growth (by 80%) took place in the case of holdings in Wielkopolska and Śląsk. In northern Poland, the level of payments grew at a rate similar to the average (by 77%), while in the rest of the country their growth did not exceed 70%.

Figure 2.12. Distribution of subsidies for operational activity in medium-large farms, by FADN regions



Source: own calculations based on FADN data.

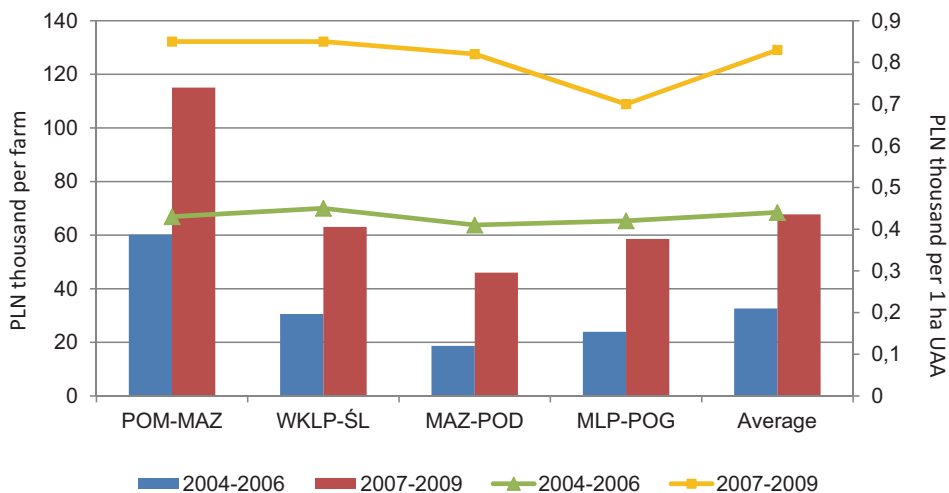
An analysis of the distribution of the total amount of payments between medium-large farms from different regions of the FADN shows that nearly half of the support was received by farmers from Mazowsze and Podlasie. In north-eastern Poland the farms obtained 22-27% of the total support. The smallest amount of benefits was passed to the beneficiaries from Małopolska and Pogórze (Figure 2.12).

Large farms

Among large farms the highest payments in 2004-2009 were directed to farmers from Pomorze and Mazury, they amounted to an average of about 88 thousand PLN per holding per year, thus they are about $\frac{3}{4}$ higher than the average of the FADN field of observation. The lowest level of support was rec-

ordered in the agricultural holdings of Mazowsze and Podlasie (32 thousand PLN). Farms in these regions have relatively the smallest surface of UAA in this group of farms (Figure 2.13). In the rest of the country the level of subsidies allocated to farmers ranged between 41-47 thousand PLN per year.

Figure 2.13. Average level of payments in large farms, by FADN regions

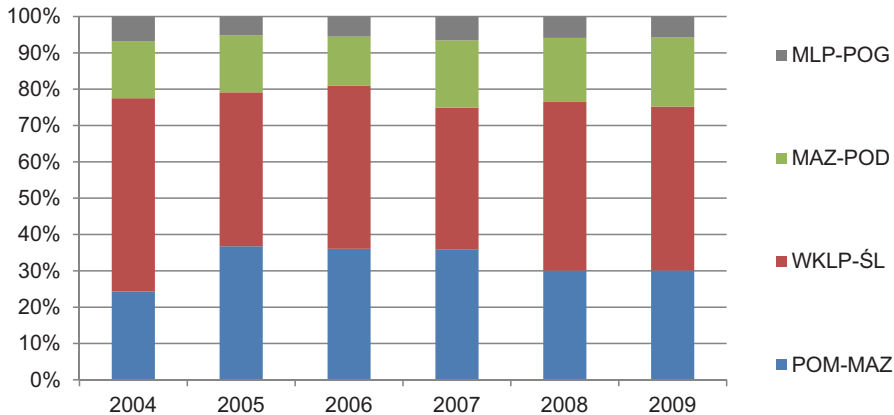


Source: own calculations based on FADN data.

Considering the change in the amount of support received by farmers in the dynamic perspective, it has been observed that in comparable periods the average amount of support to large farms has increased by 108%. In the region of Mazowsze and Podlasie and Małopolska and Pogórze growth of benefits was significantly higher than the average (by 45-46%), while for the holdings of Wielkopolska and Śląsk it remained quite close to it. Growth rate of payments which was significantly lower (by 9%) than the average, was recorded in the northern part of the country.

There was clearly a greater differentiation of support granted per 1 ha than in the entities of a lower economic size. In this respect, the highest amount of support was provided to beneficiaries of Wielkopolska and Śląsk, the lowest to farmers from Małopolska and Pogórze. In the analysed periods of time, growth in this category of benefits amounted to an average of 91%. The farms of Podlasie and Mazowsze and Wielkopolska and Śląsk recorded much higher growth of income from 1 ha of land than the average, while in Małopolska and Pogórze it was significantly lower.

Figure 2.14. Distribution of subsidies for operational activity in large farms, by FADN regions



Source: own calculations based on FADN data.

Analysing the distribution of subsidies between large farms in different regions of the FADN, showed a significant disparity in their distribution between the north-western Poland and the rest of the country. Nearly 80% of the total amount of benefits was allocated to beneficiaries from Wielkopolska and Śląsk and Pomorze and Mazury. In contrast, the smallest proportion thereof was given to holdings from southern Poland (Figure 2.14).

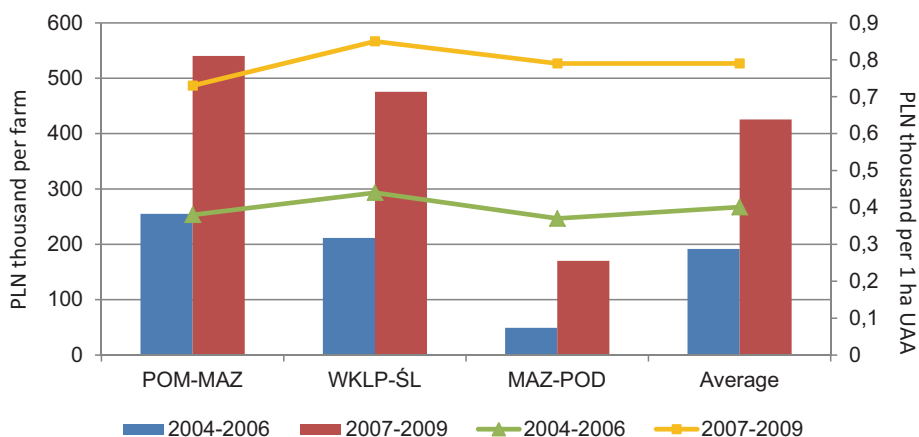
Very large farms

In 2004-2009 the average annual level of payment for operational activity of very large farms averaged about 309 thousand PLN per holding. Benefits that were considerably higher than the average level of support was allocated to beneficiaries from north-western Poland. In contrast, in the east of the country the average amount of support per farm was lower than the average for the entire population by nearly 65%. Such low allocations were primarily a result of a relatively smaller area of arable land and grassland recorded for large farms in the region. The average amount of support per 1 ha was significantly less than the amount of regionally differentiated payments converted into one holding. In this respect, the highest rates were obtained by farmers from Wielkopolska and Śląsk, while the lowest was recorded in the agricultural holdings of Pomorze and Mazury (Figure 2.15).

Comparison of changes in the relative amount of support in terms of dynamics showed that in 2007-2009, in relation to the first years of Polish membership in the EU, the average amount of support to the largest farms increased

on average by 122%. The amount of benefits received by beneficiaries from Mazowsze and Podlasie grew twice as fast. In Wielkopolska and Śląsk growth rate of subsidies amounted to 25%, and in northern Poland it was close to the average. The growth rate of the support per 1 ha was more unified and less intensive. In the whole country amounted to an average of 95%. In this category of support, agricultural holdings of Mazowsze and Podlasie recorded growth rate higher than the average, while in the north-western part of Poland it was slightly lower.

Figure 2.15. Average level of payments in very large farms, by FADN regions



Source: own calculations based on FADN data.

When analysing regional differences in the distribution of subsidies among the largest farms, it was observed that the dominant part of the total amount of support (nearly 60%) went to the farmers in Wielkopolska and Śląsk, i.e. the region with the vast majority of farms in this group. The smallest amount of total payments was passed to the farms from Małopolska and Pogórze (less than 6%).

2.5. Changes in the level of payments for operational activity, in regional perspective, by type of farming

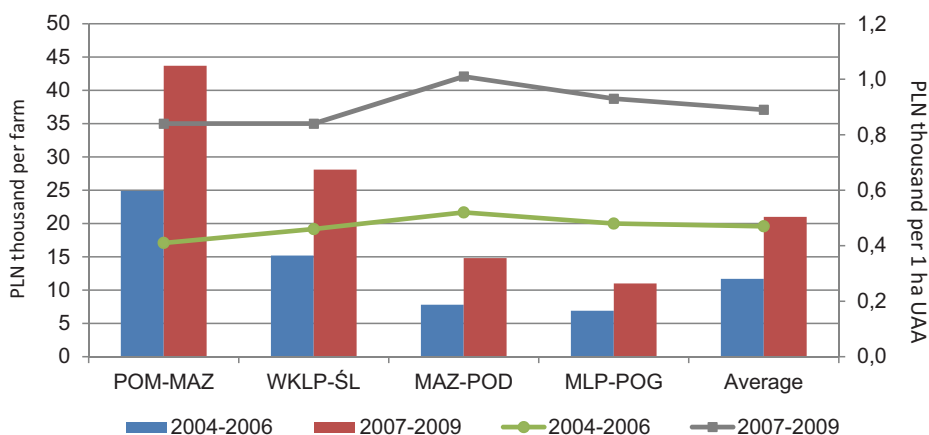
Despite the fact that a large part of the assistance to farms is not related to the type of farming, also when analysing types of production among different regions of the FADN, quite large differences in the amount of benefits are visible, both per farm and per 1 ha of UAA. However, the differences are much smaller than in the case of the classification by economic size.

Farms where field crops prevail

In 2004-2009 the average amount of payments to operational activity of farms with a predominance of field crops amounted to about PLN 16.3 thousand per farm per year. Benefits exceeding the average level of support (more than 2-fold) were received by farmers from the region of Pomorze and Mazury. In western Poland average amount of subsidies was also higher than the average for the reference population (by 32%). Such high revenues resulted mainly from a large area of arable land and grassland which were available to entities in these two regions. In the rest of the country the average size of farms was significantly smaller, and thus it was also lower than the average amount of subsidies received by farmers. It reached a level of PLN 9-11 thousand.

The average amount of support per 1 ha of UAA was significantly lower than the level of sectoral payments per one farm. In this respect, the highest benefits were allocated to beneficiaries from Mazowsze and Podlasie. Payments higher than the average level were directed also to the farmers from southern Poland. In the rest of the country the amount of subsidies per 1 ha was significantly lower than the average, mostly in the region of Pomorze and Mazury (Figure 2.16).

Figure 2.16. Average annual level of payments in agricultural farms where field crops prevail, by FADN regions

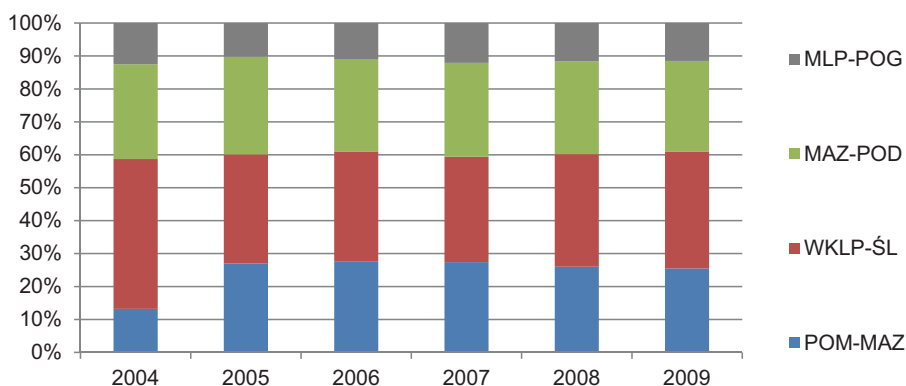


Source: own calculations based on FADN data.

Comparison of changes in the relative amount of support in terms of dynamics showed that in 2007-2009, in relation to the first years of integration, the average amount of support increased on average by 80%. The benefits received

by beneficiaries increased faster (by 5-10 percentage points) in case of farmers from Mazowsze and Podlasie and Wielkopolska and Śląsk. In northern Poland, the growth rate of payments was lower than the average by 4 percentage points, while in the south of the country, the amount of support has increased by nearly 60%. The growth rate subsidies per 1 ha was more uniform, but was characterised by greater intensity. In the whole country, it was an average of 91%. The growth rate of subsidies per 1 ha for farms with a predominance of field crops from Pomorze and Mazury was significantly higher (by 15 percentage points) than the average and lower (by 11 percentage points) in the case of farms from the western part of Poland.

Figure 2.17. Distribution of subsidies for operational activity in agricultural farms where field crops prevail, by FADN regions



Source: own calculations based on FADN data.

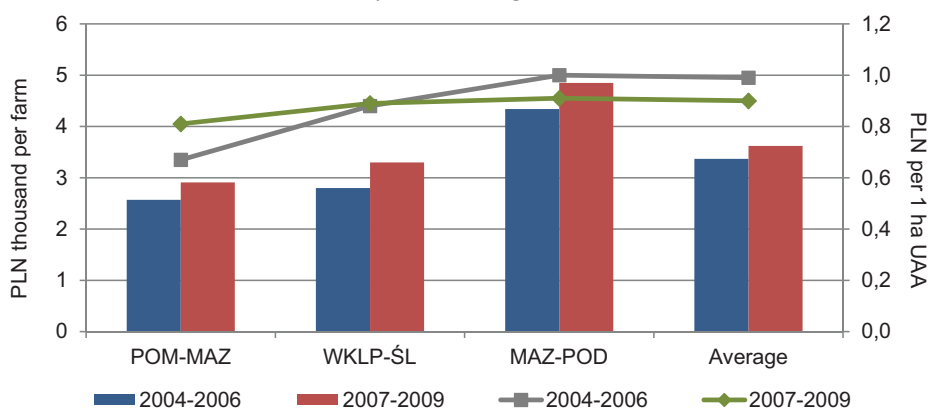
Considerable differences in the distribution of the total amount of payments among the analysed farms were observed. More than 60% of the total support was directed to the beneficiaries from Wielkopolska and Śląsk and Mazowsze and Podlasie, and the least to the farmers in Małopolska and Pogórze (Figure 2.17). This structure reflects the number of farms and their size characteristics of the various parts of the country.

Horticultural farms

In the first years of integration, in the case of horticultural holdings the highest subsidies were directed to farmers from Mazowsze and Podlasie. They amounted to an average of PLN 4.6 thousand per farm, thus were more than 30% higher than the average of the FADN field of observation. In other regions the amount of support received by the beneficiaries was much lower. In Wielko-

polska and Śląsk support amounted to an average of PLN 3 thousand, while in Pomorze and Mazury their level did not exceed PLN 2.8 thousand. In the analysed period, the average relation of the level of subsidies to the average of the FADN area of observation improved in all regions, however the most in western Poland. The amount of support per 1 ha of UAA in the entire country was moderately differentiated and amounted to an average of about PLN 950. Support exceeding the average (by 30%) was directed to beneficiaries from Mazowsze and Podlasie. However, in other parts of the country the amount of this category of payments was below average (Figure 2.18).

Figure 2.18. Average annual level of payments in horticultural farms, by FADN regions



Source: own calculations based on FADN data.

Support for operational activity has increased in the analysed periods in all horticultural farms. Fastest growth (18%) took place in Wielkopolska and Śląsk. In the north-eastern Poland growth rate was lower by about 5-6%, while in the south of the country by over 11%. Growth rate of support per 1 ha of UAA was quite different than the growth rate of payments per farm. The increase in the value of this support category was recorded only in the region of Pomorze and Mazury (about 20%). In the west of the country the average amount of support per 1 ha of UAA did not change, while in Mazowsze and Podlasie it declined by 8%.

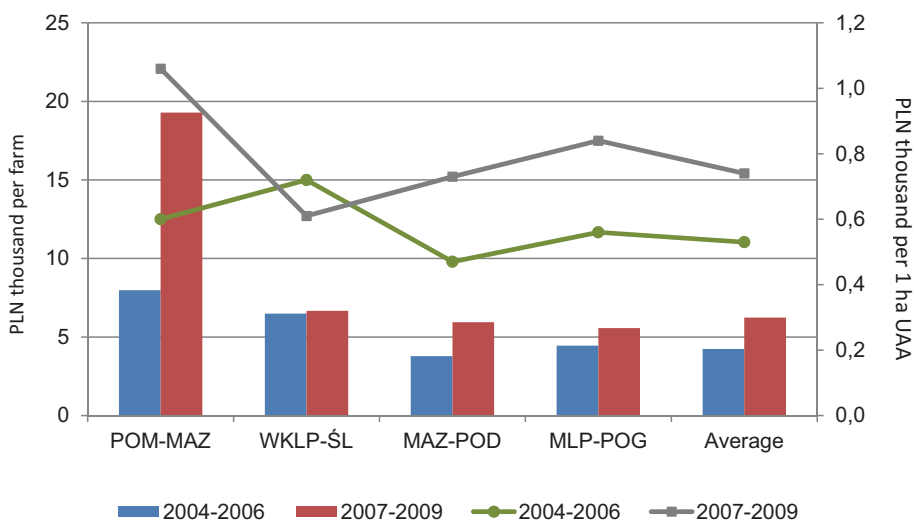
The analysis of the distribution of the total amount of payments between horticultural holdings showed that more than 60% of the support was directed to farmers from Mazowsze and Podlasie. In western Poland the farms received ca. 31% of all payments. The smallest part of the benefits was directed to the holdings of Pomorze and Mazury (less than 9%).

Farms where permanent crops prevail

In 2004-2009 in the FADN sample, the amount of subsidies for operational activity on farms where permanent crops prevail amounted to an average of PLN 5.2 thousand per year. In the region of Pomorze and Mazury the amount of benefits was more than 2.5 times higher than the average, while in Wielkopolska and Śląsk by more than ¼. In the south-eastern parts of the country the amount of subsidies was much lower than the average and stood at PLN 4.8-5 thousand per farm. The amount of support per 1 ha of UAA was relatively less diversified. The highest, in this respect, were the rates of payments recorded in the region of Pomorze and Mazury, where beneficiaries received an average of 841 PLN/ha, i.e. nearly 30% more than in the region of Mazowsze and Podlasie, where support was lowest.

In dynamic terms, in the analysed period, the strongest (nearly 2.5-fold) was an increase in the amount of subsidies per farm in the region of Pomorze and Mazury. This rate was significantly higher than both the growth rate recorded in other parts of the country, and the average for the entire population. The rate of support increased faster than average (10%) in the region of Mazowsze and Podlasie. In southern Poland, the increase of the amount of subsidies was significantly lower (25%), while in the west of the country, it has not changed much (Figure 2.19).

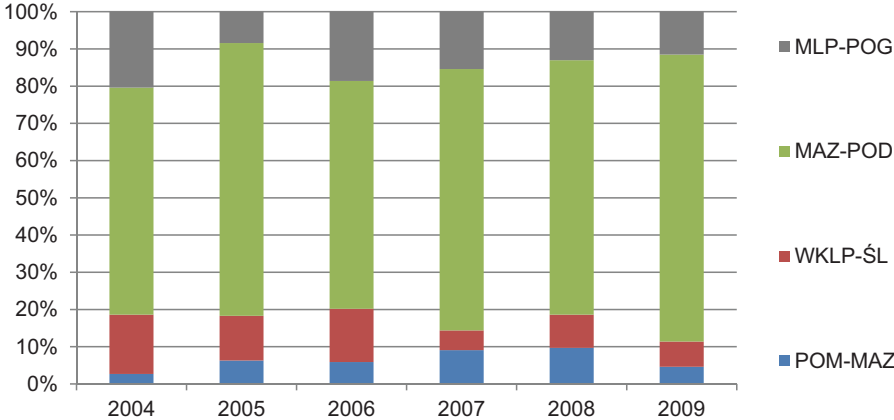
Figure 2.19. Average level of payments in agricultural farms where permanent crops prevail, by FADN regions



Source: own calculations based on FADN data.

The direction of changes in subsidies paid per 1 ha of UAA was quite similar. But the intensity was less regionally varied. The payments increased the fastest in the region of Pomorze and Mazury. In 2007-2009, the average value, in relation to the first years of accession, increased by 74%. In south-eastern Poland, the growth dynamics in this category was much lower. The decrease in the level of benefits per 1 ha of UAA was recorded for farms from Wielkopolska and Śląsk.

Figure 2.20. Distribution of subsidies for operational activity in agricultural farms where permanent crops prevail, by FADN regions



Source: own calculations based on FADN data.

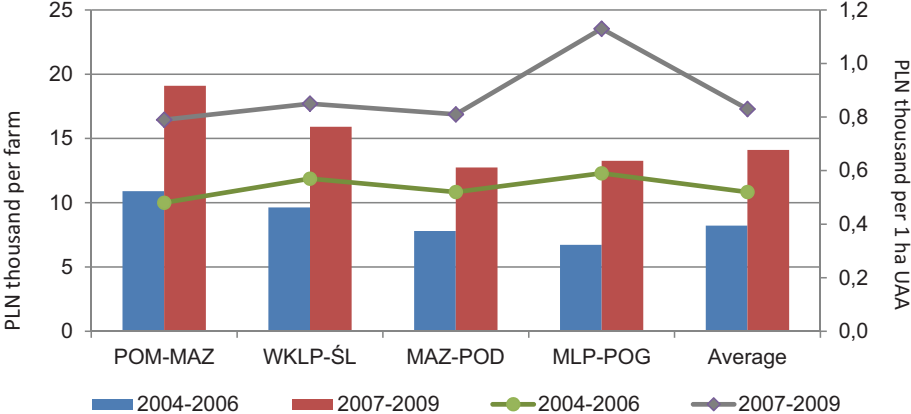
Distribution of support to holdings with a predominance of permanent crops was similar as in the case of horticultural farms. Nearly 70% of the total amount of support was directed to the beneficiaries of Mazowsze and Podlasie where 75% of all farms in this group is located. In contrast, the smallest part of the total amount of support was directed to holdings from Pomorze and Mazury, representing less than 3% of the whole study population (Figure 2.20).

Dairy farms

Among dairy farms, the highest payments in 2004-2009 were allocated to the beneficiaries of Pomorze and Mazury, they amounted to an average of PLN 15 thousand per farm per year, thus were nearly 35% higher than the average of the FADN field of observation. Significantly lower (PLN 10 thousand) support was addressed to the farms of south-eastern Poland with relatively smallest average area of arable land in this group of subjects. In the western part of the country the amount of subsidies developed at the average level of not more than PLN 13 thousand.

Considering the change in the level of support received by farmers in the dynamic perspective, it has been observed that in 2007-2009, as compared to 2004-2006, the average amount of support to dairy farms increased by 72%. In the region of Małopolska and Pogórze growth of subsidies was significantly higher than the average, while for the holdings of Pomorze and Mazury it remained quite close to that average. Growth rate of payments significantly lower (by 9%) than the average was recorded in the eastern part of the country (Figure 2.21).

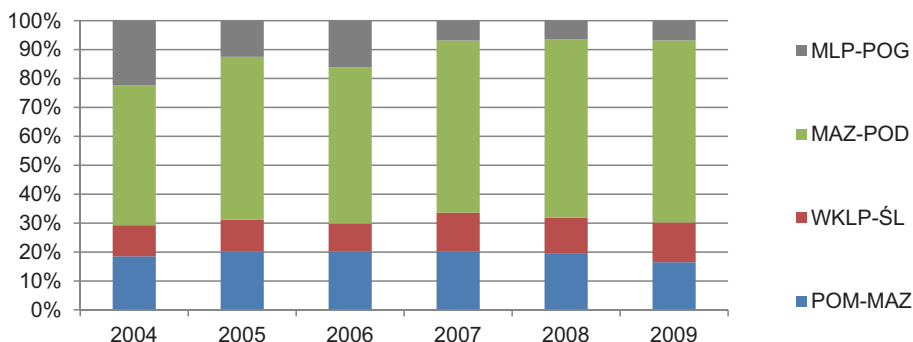
Figure 2.21. Average level of payments in dairy farms, by FADN regions



Source: own calculations based on FADN data.

The amount of benefits per 1 ha of UAA was inversely correlated than the amount of payments per one farm. At the same time relatively greater regional variation was observed in this category of support than among entities from other production groups. In this perspective, the highest rates of subsidies for agricultural activity was directed to farms from Małopolska and Pogórze (864 PLN/ha), while the lowest to farms from the northern Poland (638 PLN/ha). In the analysed periods the growth dynamics of subsidies per 1 ha varied significantly across the country. On average it amounted to 60%. Growth rate of support per 1 ha of UAA higher than the average was reported in dairy farms from Małopolska and Pogórze region and Pomorze and Mazury. In the eastern part of the country subsidy growth rate was significantly lower than the average.

Figure 2.22. Distribution of subsidies for operational activity in dairy farms, by FADN regions



Source: own calculations based on FADN data.

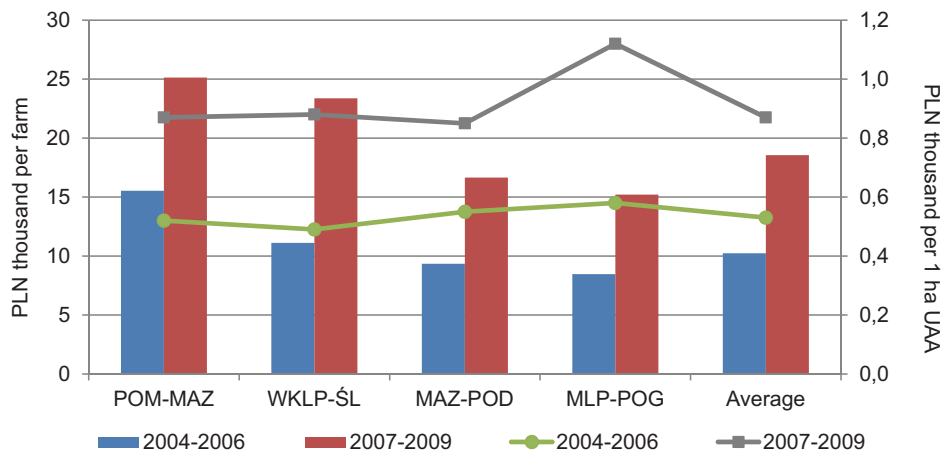
Regional distribution of payments between farms keeping dairy cows showed that the overwhelming part of the support (nearly 60%) was directed to the farmers in Mazowsze and Podlasie region, i.e. the region where the vast majority of farms of this group was recorded. The smallest part of support was allocated to farms from Wielkopolska and Śląsk and Małopolska and Pogórze (Figure 2.22).

Farms keeping grazing livestock

In 2004-2009, the subsidies for the operational activity of agricultural holdings keeping herbivorous animals averaged PLN 14.4 thousand per year. In the region of Pomorze and Mazury, as well as Wielkopolska and Śląsk the level of support was higher than average by 40% and 20% respectively. However, in the farms of the south-eastern part of the country the amount of benefits was much lower. It remained at the level of PLN 12-13 thousand per farm per year. In the comparable periods, the relation between the average level of support to the average of the field of observation of FADN improved only in Wielkopolska and Śląsk (17 percentage points). In south-eastern Poland its value has not changed, and in Pomorze and Mazury it significantly decreased (by 16 percentage points).

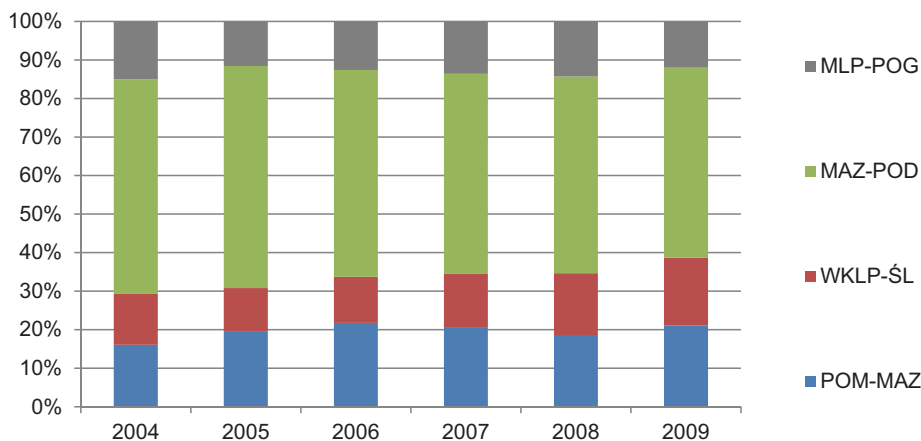
Analysis of the relative changes of the support in a dynamic perspective showed that the changes were more intense than in other groups of production. In 2007-2009, in relation to the years 2004-2006, the average amount of support in farms keeping livestock under the grazing system increased on average by 81%. Significantly more dynamic growth of payments than the average was recorded in Wielkopolska and Śląsk, while in south-eastern Poland it remained close to the average, whereas in the region of Pomorze and Mazury the increase of the level of payments did not exceed 63% (Figure 2.23).

Figure 2.23. Average level of payments in farms keeping grazing livestock, by FADN regions



Source: own calculations based on FADN data.

Figure 2.24. Distribution of subsidies for operational activity in farms keeping grazing livestock, by FADN regions



Source: own calculations based on FADN data.

In agricultural holdings producing herbivorous animals with the area of up to 1 ha, farmers received an average of PLN 707. In this category of support the highest rates were recorded in the region of Małopolska and Pogórze, where beneficiaries received an average of PLN 849, i.e. over 160 PLN/ha more than in the region of Wielkopolska and Śląsk, where the subsidies were the lowest. Comparison of the level of subsidies per 1 ha showed that they increased the

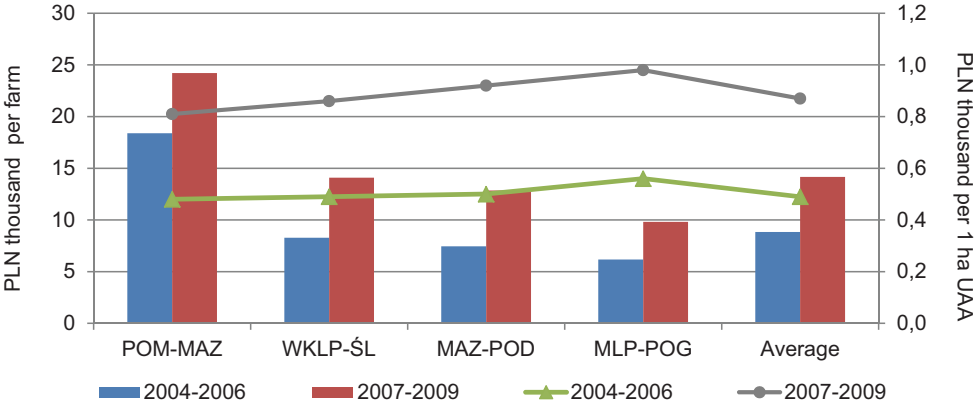
fastest (by 91%) in Małopolska and Pogórze. This rate was higher than both the growth rate recorded in other parts of the country, as well as the average for the whole population. Higher than average growth rate of subsidies per 1 ha was also recorded in Wielkopolska and Śląsk. In contrast, by far the slowest increase (about 55%) of the level of support in this category was recorded in the eastern part of the country.

Large disparities in regional distribution of the total amount of payment were observed also in this group of farms. The analysis shows that more than half of the total support was directed to the beneficiaries of the Mazowsze and Podlasie region, while about 20% to farms from Pomorze and Mazury. In other parts of the country, farmers received on average about 13-14% of the total amount of payments (Figure 2.24).

Farms keeping granivores

In the first years of integration, the highest subsidies among farms keeping granivores were granted to farmers from Pomorze and Mazury. They amounted on average to PLN 21 thousand per farm per year and thus were higher by 85% than the average for the whole FADN observation area. In the remaining regions, the level of support received by beneficiaries was clearly lower (Figure 2.25). The level of support most similar to the average was observed in Wielkopolska and Śląsk (PLN 11 thousand), whereas in south-eastern Poland the average value of financial services provided to farmers did not exceed PLN 10 thousand.

Figure 2.25. The average level of payments for farms keeping granivores, by FADN regions

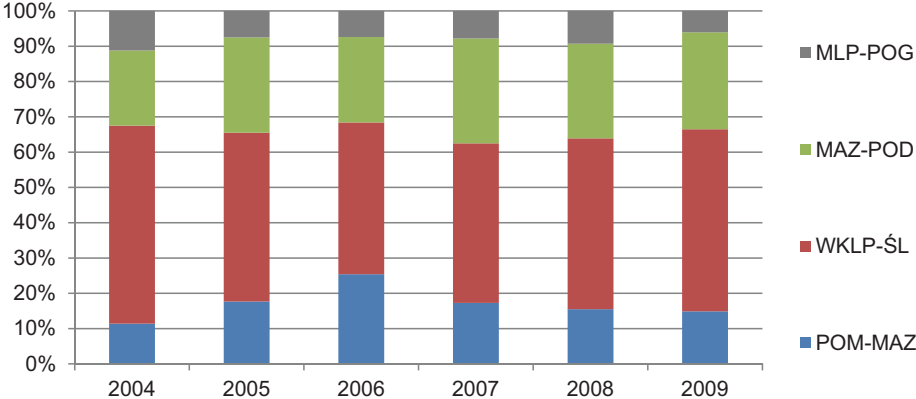


Source: own calculations based on the Polish FADN.

In the analysed periods, the increase in the amount of subsidies for operational activity in all farms keeping granivores was observed. The fastest growth was noted in Mazowsze and Podlasie and Wielkopolska and Śląsk (on average by 71%). In southern Poland the growth rate of subsidies for operational activity was lower by ca. 10 percentage points whereas in northern part of the country by ca. 40 percentage points.

The value of subsidies per 1 ha of UAA in the whole country was relatively varied and amounted on average to PLN 683. Higher support was provided to beneficiaries from Wielkopolska and Śląsk and Mazowsze and Podlasie. Within the remaining areas of the country, subsidies for operational activity remained lower and amounted to ca. PLN 660. Changes in the level of support per 1 ha of UAA were similar to the changes in the level of payments per farm. Their value increased fastest (by 85%) in Mazowsze and Podlasie. In the remaining regions the growth rate of subsidies for operational activity per 1 ha UAA remained below the average. The slowest growth (by 71%) was observed in northern Poland.

Figure 2.26. Distribution of subsidies for operational activity for farms keeping granivores, by FADN regions



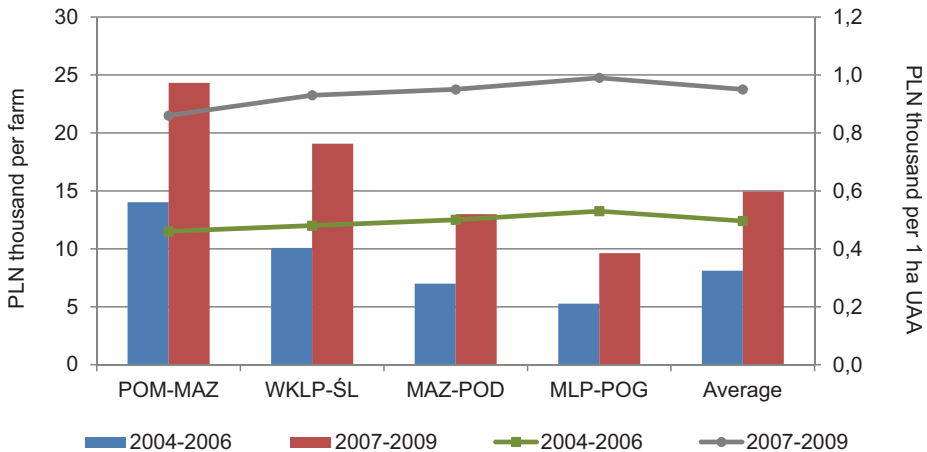
Source: own calculations based on the Polish FADN.

Distribution of subsidies for operational activity for farms keeping granivores showed that the half of all payments were granted to farmers from Wielkopolska and Śląsk, where most farms keeping granivores were located. 18% and 27% of subsidies were directed respectively to the northern and to the eastern part of the country. Farms from Małopolska and Podgórze received the lowest amount of subsidies (Figure 2.26).

Mixed farms

The annual level of subsidies for operational activity in farms with predominantly mixed production amounted on average to PLN 11.5 thousand. In the region of Pomorze and Mazury the level of financial support was approximately twice as high as the average, whereas in the region of Wielkopolska and Śląsk it was more than 25% higher than the average. In south-eastern parts of the country, the level of payments was clearly lower than the average for reference population and it ranged between PLN 7 thousand and PLN 10 thousand. The value of subsidies per 1 ha UAA varied differentiated across the country. Accordingly, the highest level of subsidies was recorded in Małopolska and Pogórze, where farmers obtained approximately PLN 759 per 1 ha UAA that is PLN 160 PLN per ha more than in the region of Wielkopolska and Śląsk, where the rates were the lowest (Figure 2.27).

Figure 2.27. The average level of payments for farms with predominantly mixed production, by FADN regions



Source: own calculations based on the Polish FADN.

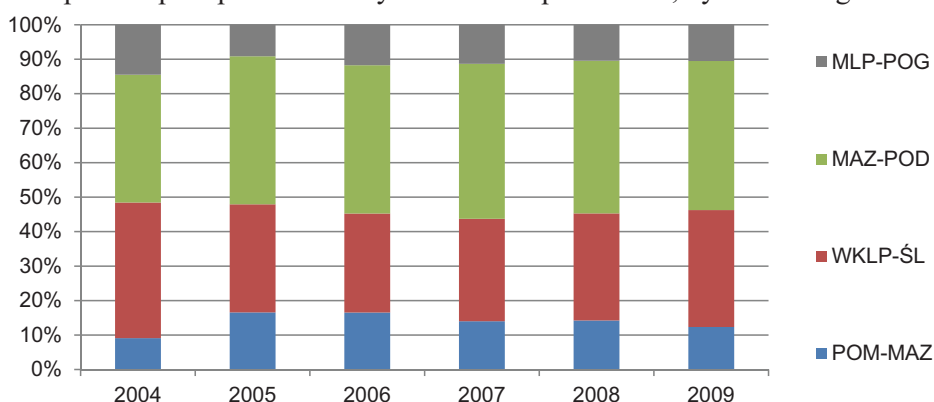
In the analysed years, the indicator of relations between a statistical level of payments to the average from the FADN observation area improved (by 3.3 percentage points) only in western Poland, whereas in south-eastern parts of the country it did not change considerably. However, in the region of Pomorze and Mazury this indicator somewhat dropped (by 10 percentage points).

In a dynamic perspective, in the analysed periods the value of subsidies increased fastest in the region of Wielkopolska and Śląsk (on average by 90% annually). This growth rate differed considerably both from the growth rate rec-

ordered in the remaining parts of the country and from the average for the whole reference population. Levels of subsidies for farms in the region of Mazowsze and Podlasie were also growing faster than average. However, the lowest growth rate was observed in northern parts of Poland.

The increase in volume of payments per 1 ha of UAA was more uniform and less intensive. The fastest increase in this category of subsidies was observed in the region of Wielkopolska and Śląsk. In 2007-2009 their average value – compared to the first years after the accession – grew by 92%. Within the remaining areas of the country, payment rates per 1 ha increased on average by 87-89%.

Figure 2.28. Distribution of operating grants for farms preoccupied predominantly with mixed production, by FADN regions



Source: own calculations based on the Polish FADN.

While analysing the distribution of subsidies for operational activity for farms with mixed production, considerable differences between western and eastern FADN regions and the remaining parts of the country were observed. More than three quarters of total volume of payments were allocated to beneficiaries from Mazowsze and Podlasie and Wielkopolska and Śląsk, where 75% of farms belonging to this group were situated. However, farms from southern and northern Poland were granted the smallest part (less than 12%) of the subsidies (Figure 2.28).

2.6. Summary

In 2004-2009 the average level of subsidies for operational activity per farm in particular regions of FADN was strongly diversified. Such diversification resulted mainly from the varying agrarian structure of the country and dif-

ferent production and economic potential of individual farms from particular regions. The average payment rates in the FADN regions with more favourable agrarian structure and economically developed farms were clearly higher than in the remaining parts of the country. For this reason, the scale of influence of subsidies on agriculture varied depending on a particular region, and changes in individual parts of the country were occurring differently.

A clear division reflecting agrarian structure of Polish agricultural holdings has occurred. In the analysed period, the highest subsidies were granted to beneficiaries from the region of Pomorze and Mazury and Wielkopolska and Śląsk, whereas the lowest ones were allocated to farmers from Mazowsze and Podlasie and Małopolska and Pogórze. Additionally, farms from the region of Pomorze and Mazury received nearly three times as much financial support as those from the region of Małopolska and Pogórze. There was a negative correlation between the amount of subsidies per farm and the value of subsidies per 1 ha of UAA. Accordingly, the highest rates of subsidies for operational activity were observed in the region of Małopolska and Pogórze, whereas in the region of Pomorze and Mazury they were the lowest. The analysis of the changes of relative level of payments in a dynamic perspective shows increasing gaps between the regions with lower level of support than the average for the whole reference population, and the ones above average, including in particular the region of Pomorze and Mazury.

Regional diversity of the level of subsidies and their growth rate was also noted while dividing the holdings by economic size or production type. In all economic size groups, the highest level of financial support was provided to the region of Pomorze and Mazury. Its average value differed considerably both from the level of payments in the remaining regions, and from the average from the FADN's observation area. Such high revenues resulted primarily from the largest area of agricultural land and relatively strong economic condition of agricultural holdings situated in this part of Poland. Despite all this, the above-mentioned farms showed the slowest growth rate of subsidies per farm in the whole analysed period. In the region of Wielkopolska and Śląsk the amount of support and its growth rate remained the closest to the average. In south-eastern regions, particularly in the region of Małopolska and Pogórze, the amount of benefits remained below the average specified for the whole population. Nevertheless, in a dynamic perspective it was the eastern part of Poland, where the dynamics of the external support growth was the highest both per farm and per 1 ha UAA.

Among all holdings grouped according to production type, the highest subsidies were allocated to beneficiaries from Pomorze and Mazury, whereas

the lowest – to farmers from Małopolska and Pogórze. It demonstrates the relatively small correlation between the amount of support and prevailing type of production. The economic size and the number of hectares of UAA acquired by farms from different FADN regions had much greater influence on the amount of payments. Horticultural holdings Mazowsze and Podlasie are an exception, i.e. region with the highest number of farms of this type – they received the highest benefits.

In terms of dynamics, the increase in the level of support was recorded in all analysed regions; the scale of this phenomenon within different production types was strongly diversified, however. In each group of holdings – except for the entities specialised in milk production – the lowest growth rate of subsidies was observed in the region of Małopolska and Pogórze. In most cases, in the remaining regions this growth rate remained above the average for the FADN field of observation.

The rates per ha of UAA were shaped quite differently than the level of payments per farm. In this respect, the highest level of support was obtained by farmers from the region of Małopolska and Pogórze, and the lowest by agricultural holdings from Pomorze and Mazury. It can be attributed to considerable differences between the average area of UAA in these two regions.

It was noted that there is a considerable regional diversity of the distribution of subsidies between holdings classified according to their economic size or production profile. In this aspect, the overwhelming majority of the total amount of subsidies was directed to the region of Mazowsze and Podlasie, and – in a slightly smaller scope – to the entities from the region of Wielkopolska and Śląsk. By contrast, the farms from southern Poland received definitely the smallest part of the total amount of subsidies. This division arises from the uneven distribution of the number of farms between the regions of FADN, and disparities in the size of different holdings and their acreage.

An analysis of the distribution of the total amount of payments between farms from different FADN regions shows that current system of subsidies for operational activity supports mainly small agricultural producers. A vast majority of the total amount of subsidies is aimed at a considerable number of small holdings which are economically weak, i.e. entities lacking development and investment opportunities. These entities, regardless of a region, do not record considerable changes in production, that is why they do not adapt their agricultural activity to constantly changing market conditions or they do it to a very limited extent. Consequently, the access to external support does not improve the weak position they hold in a food chain. Relatively low number of the biggest farms is given very high benefits; the share of these benefits in the total amount of sup-

port directed to the sector is relatively small, however. These farms will be decisive for the market supply both of the basic agricultural products and food, and they will determine the position of Polish agriculture on the international market in the future²⁹.

The analysis of the distribution of subsidies between holdings of a particular production type shows that the system of subsidies for operational activity set by the European Union – including access to complementary payments – is in favour of the holdings which are focused on the intensive crop production, get high crop yields or keep herbivorous animals³⁰. Considering the fact that one of the main goals of CAP is a systematic improvement of competitiveness of agricultural sector, it would be advisable to create such a system of support, which would ensure that the funds are directed mainly to developing farms demonstrating a high scale of commercial production, management efficiency, creditworthiness and investment activity³¹.

Current system of subsidies for operational activity is mainly of social nature – especially with regard to small farms – which slows down the effects of adverse changes in the agrarian structure of Polish rural areas. Possible exclusion of economically weakest farms from the system of subsidies for operational activity should be accompanied by alternative instruments within the scope of agricultural and social policy which will be properly adjusted to the needs and the importance of these holdings in national agriculture³². These conclusions can be confirmed by the analysis of the Polish FADN data conducted in the following study.

The fair distribution of funds intended for supporting agricultural holdings is also an important issue. Such distribution should equalise their competitiveness both on national and international market. The solutions proposed for the next programming period should also be adjusted to a greater extent to the specifics of different regions of the country. Changes in the system of subsidies for operational activity should take into account the differences between the regions as well as their characteristic features, such as: level of infrastructure, natural conditions, main directions of production, agrarian structure or a general level of agricultural development.

²⁹ A. Judzińska, W. Łopaciuk, *Wpływ Wspólnej Polityki Rolnej na zmiany w rolnictwie*, series Program Wieloletni 2011-2014, no 38, IERiGŻ-PIB, Warszawa 2012, pp. 103-104.

³⁰ R. Kisiel, K. Babuchowska, R. Marks-Bielska, *Gospodarstwa rolne Polski Wschodniej...*, op. cit., p. 133.

³¹ Ibidem, p. 168.

³² A. Wrutniak, *Równy znaczy sprawiedliwe*, Rolnik Dzierżawca, Bydgoszcz 2010, no 6, p. 18.

3. Effectiveness of regional and structural policy instruments affecting the development of entrepreneurship

3.1. Introduction

The European Union in the framework of the Cohesion Policy, the agricultural policy or the broadly understood structural policy, uses a series of instruments aimed at the development of entrepreneurship, especially the small and medium-sized enterprises. Under these policies, both direct and indirect financial instruments are used. In the first case it is for example direct co-financing of enterprise business. Examples of indirect instruments include financial support of gmina infrastructure investments and support for the transfer of knowledge to small and medium-sized enterprises. The general assumption in the use of particular instruments is that assistance is to achieve pre-defined goals. In the case of European Union policies, such a goal is the economic convergence and improvement in the quality of life of residents. In addition, in relation to particular instruments, the specific objectives are often defined.

Evaluation of the policy in the context of achieving its goals is called the assessment of the policy effectiveness in the literature. The aim of this study is therefore to assess the effectiveness of the policies conducted by the European Union, to the extent relating to the use of instruments, which directly or indirectly are related to the development of entrepreneurship in rural areas. In other words, the study presents the results of research that will answer the question, to what extent and how the financial support obtained from the budget of the European Union has contributed to the achievement of the goals. Goals defined by the European Union could be achieved in fact as a result of the occurrence of certain market conditions, rather than through the pursued policy.

The paper presents the results of evaluation of the effectiveness of regional and structural policy instruments, which affect the development of entrepreneurship in rural areas, in two dimensions. In the first, the most general dimension, synthetic assessment was conducted to determine the impact of selected financial instruments on internal convergence, which included processes related to closing the gap between the rural gminas in the level and pace of economic development. The second dimension was, in a sense, a subjective approach to evaluating the effectiveness of the policy. The entity means in this case the subsidies for the operation of micro-enterprises which caused the effects of varying degrees of convergence with set objectives, especially specific objectives. Such an approach to assessing the effectiveness will in fact allow determining the extent to which both general and specific objectives were implemented.

3.2. Financial policy instruments to promote entrepreneurship in terms of convergence

Effectiveness is one of the criteria according to which assessment of the policy is made. Generally, it boils down to determining the degree of accomplishment of a given policy objectives³³. In the case of policy to support the development of entrepreneurship, which uses instruments financed from the EU budget, the objective is economic convergence. This results primarily from Regulation 1083/2006 of 12 July 2006, pursuant to which the actions taken by the EU funds should aim to achieve three main objectives, i.e. convergence, regional competitiveness and employment and territorial cooperation. In this regulation, convergence means improving conditions for growth and employment through increasing and improving the quality of investment in physical and human capital, development of innovation and knowledge society, adaptability to economic and social changes, protection and improvement of the environment and increasing administrative efficiency in least developed countries and regions.

The use of different instruments of regional and structural policy by the European Union for the development of entrepreneurship leads to convergence within the meaning of the Regulation. Transfers of funds contribute to the improvement of the situation in the indicated areas both at the national level and at the level of individual regions³⁴. But this is not synonymous with convergence understood in the context of economic theory. In this perspective, convergence is understood broadly as equalizing the level of development of regions (states)³⁵. Bridging the development gap between the regions is thus an evidence of the convergence process, and not only improvement of the economic situation. However, the measurements of convergence, meaning the process of approaching the less developed regions to more developed ones in economic terms, use two approaches. In the first one, convergence is evidenced by decreasing differences between the indicators determining the level of economic development, while in the second compares the pace of development or economic growth. In econometric analyses, these two approaches are named respectively

³³ See M. Król, *Kierunki oddziaływania uwarunkowań na cele i środki polityki zatrudnienia*, *Polityka Gospodarcza* 2000, No. 3, pp. 43-50; G. Pawłowski, *Wykorzystanie analizy efektywności funkcjonowania instytucji publicznych w aspekcie konkurencyjności regionów*, *Polityka Gospodarcza* 2000, No. 3, pp. 65-71.

³⁴ See A. Wasilewski (scientific ed.), B. Chmielewska, M. Gospodarowicz, E. Ślęzak, *Instrumenty polityki regionalnej i strukturalnej wspierające rozwój przedsiębiorczości na obszarach wiejskich*, series Program Wieloletni 2011-2014, no 14, IERiGŻ-PIB, Warszawa 2011.

³⁵ E. Łązniewska, T. Górecki, R. Chmielewski, *Konwergencja regionalna*, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2011, p. 5.

σ and β convergence³⁶. The choice of a particular type of convergence as a policy goal, however, should be preceded by a preliminary assessment of the potential to achieve each of them, in terms of the given policy.

Policy to support entrepreneurship with the help of instruments financed by the European Union in Poland has a relatively short history. One can accept in principle that it began at the time of Polish accession to the EU in 2004 – although some instruments have been used already in the pre-accession period, such as the SAPARD programme. In such a short period, it is difficult to expect equalizing, for example, GDP per capita in the regions even in the scale of the country. Therefore, the aim of this policy should be convergence type β . Transfer of funds should in fact stimulate economic activity and, consequently, lead to accelerated growth and economic development in the regions. However, this growth does not necessarily have to be the highest in the weaker regions. This is confirmed by Kusideł³⁷, which shows that the economic disparities between EU countries have been steadily decreasing, while increasing in many of the new member states, including Poland. This condition is explained by the Williamson hypothesis³⁸. According to this hypothesis, the internal convergence occurs only at higher stages of development of the economies.

The subject of the discussion in this chapter is not the global convergence of regions as a result of the use of instruments of structural and regional policy oriented on growth of entrepreneurship. This issue is in fact largely explained. Research comes down to the problem of differences in the economic development of rural gminas and the impact of these policies on them. The studies conducted so far³⁹ show that the pace of development of non-agricultural activities may be higher in rural areas than in cities, and the instruments of these policies have a stimulating effect on the process. But it is not clear whether within the rural areas the level of economic development of the weakest and the strongest territorial units is equal, i.e. whether there is a kind of “local convergence”. This problem is important primarily because of the lack of convergence in the regions.

³⁶ B. Bal-Domańska, *Ekonometryczna identyfikacja β konwergencji regionów szczebla NUTS-2 państw Unii Europejskiej*, Acta Universitatis Lodziensis. Folia Oeconomica 2011, No. 253, Łódź, p. 9.

³⁷ E. Kusideł, *Konwergencja gospodarcza w Polsce*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2013, pp. 149-150.

³⁸ J.G. Williamson, *Regional inequality and process of national development: a description of the patterns*, [in:] *Economic development and cultural change*, XIII (4, part II), Chicago 1965, pp. 2-84.

³⁹ See A. Wasilewski (scientific ed.), B. Chmielewska, M. Gospodarowicz, E. Ślęzak, *Instrumenty polityki regionalnej...*, op. cit., pp. 7-105.

The theory of economic convergence defines the various systems of factors that can support or counteract regions becoming equal in terms of economic development. This is due to the fact that this theory is not autonomous, but is based on a number of theories of growth and development in the territorial arrangement⁴⁰, including e.g. the theory of cumulative causation, the growth pole theory, sectoral theories or product cycle theories. Each of these theories determines the path of development of territorial units at given properties of the economy of the unit and external conditions. However, this means that support for the development of entrepreneurship under the policy can have different effects in units differing e.g. in the structure of the economy or location. The criteria of support distribution take into account this diversity to a small extent. The authors of the division therefore attempt to assess the impact of the financial support of the European Union on equalization of the level of development of local economies and on determining the importance of processes taking place at the local level for the regional convergence, or even divergence in the present circumstances.

Economic processes occurring at the local level (gminas) may be conditioned by the policies, and especially by the financial support of the policy, and lead to the reduction of variation in regions and within rural areas across the country. However, they need not to lead to regional convergence. However, regional convergence, as a result of financial support for the development of economic activity by the public sector could arise in certain specified circumstances. To this end, the bulk of the support will be needed in the less developed regions, and within these regions to territorial units in which the use of this support would be most effective. Such an approach, however, would not only lead to closing the gap at the local level, but could have a negative impact on the convergence of European Union countries. Examining the processes taking place at the local level will determine the distribution of both directions of support, its impact on the so-called “local convergence”, and conclude on the possibility of changes in the criteria for the distribution in order to achieve regional convergence.

In terms of closing the gap in local development, the possibility of making changes in the system of support, however, will not mean having to make any changes. Achieving regional convergence is not necessarily a priority for policy. At the same time, reducing disparities in economic development at the local level can be a path of development resulting from Williamson’s hypothesis, i.e. leading to the achievement of a certain level of economic development of regions, from which starts the process of regional convergence in the country. Mandatory

⁴⁰ E. Łaźniewska, T. Górecki, R. Chmielewski, *Konwergencja regionalna*, op. cit., pp. 10-36.

changes in the support system should be made only in the absence of its impact on bridging local gaps – assuming of course that it was their goal. The use of financial support for the development of entrepreneurship may only have an induction effect, i.e. inducing the development of economic activity. This effect can be the result of a too small scale of support. But it can be still a positive effect of the policy, especially when it is not judged by the criterion of efficiency.

Use of financial instruments of the policy to support the development of entrepreneurship may have a different impact on the processes of convergence. From the point of view of policy it is important, however, whether this impact actually exists and is positive. An attempt was, therefore, made to evaluate the impact of these instruments on the process of closing the gap in local economic development in rural areas in Poland and to explain – at least partially – the transmission mechanisms of these processes on regional divergence in the country and convergence in the European Union.

3.2.1. Methodology

The econometric model of β -convergence⁴¹, adapted to the level of a gmina, was used to identify the processes. This approach, in turn, implies the use of specific indicators and the structure of the analysis. The analysis of the convergence of regions and countries adopts the level of GDP or GDP per worker as a measure of the level of development. At the local level (gminas), such measures, unfortunately, cannot be applied. Therefore, assessment of the level of development of gminas, and then the processes of equalization of these levels, uses the level of income of the gmina per 1 inhabitant of working age. It should be noted that the size of this category of income is quite often used in research on local development. It is the function of income obtained in the gmina, such as income of individuals, legal persons or income on their property or land. These revenues are, therefore, a function of income received from all factors of production located in the unit.

The initial stage of the study involved descriptive and comparative analysis of the state and changes in rural gminas' own income in various systems determined by the level of this income category and the scale of the use of instruments to support the development of entrepreneurship financed from the budget

⁴¹ See B. Bal-Domańska, *Ekonometryczna identyfikacja...*, op. cit., pp. 9-21; M. Próchniak, R. Rapacki, *Konwergencja typu beta (β) i sigma (σ) w krajach transformacji w latach 1990-2005*, [in:] R. Rapacki (ed.), *Wzrost gospodarczy w krajach transformacji*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2009, pp. 146-151; M. Kokocińska (ed.), *Etapy konwergencji w rozwiniętych krajach Unii Europejskiej*, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2012, pp. 44-48.

of the European Union. First, the studies focused on own revenues per 1 worker in all rural gminas and groups of gminas of various sizes in this category. The criterion for grouping was the median value. The next stage was to analyze the size of own income depending on the amount of funds received in the gmina from the budget of the European Union under the Operational Programme Human Capital, Innovative Economy, the Regional Operational Programme and the Programme Development of Eastern Poland, per one worker of working age. As part of these programmes, many activities could be classified as direct or indirect instruments to support entrepreneurship in rural areas. In this case, the median size was also used as a criterion of the grouping. Descriptive and comparative analysis were also applied to changes in own income depending on the use by the local government with the support of the European Union for municipal investments, as an indirect instrument of support for entrepreneurship. The criterion for allocation of municipalities in this case was the fact of using or not using support by the unit.

The next stage of the research was to analyze the Gini and Theil coefficients, which are used to determine the level of diversity of objects in the population in terms of specific characteristics. The purpose of these coefficients was to increase knowledge about the process of local development and verification of the results of the analysis of basic statistics characterizing changes in own income per one inhabitant of working age.

Calculation of Gini coefficients uses the formula for an ascending set of information⁴²:

$$G(y) = \frac{\sum_{i=1}^n (2i - n - 1)y_i}{n^2 \bar{y}}$$

where:

y_i – value i – of this observation,

\bar{y} – average value of observation for the population or group,

n – number of observations.

Theil coefficient⁴³ was calculated using the formula:

$$T(y) = \frac{\frac{1}{n} \sum_{i=1}^n \left(\frac{y_i}{\bar{y}} \cdot \ln \frac{y_i}{\bar{y}} \right)}{\ln(n)}$$

⁴² See P.M. Dixon, J. Weiner, T. Mitchell-Olds, R. Woodley, *Erratum to 'Bootstrapping the Gini Coefficient of Inequality'*, Ecology 1988, vol. 69, p. 1307; P.M. Dixon, J. Weiner, T. Mitchell-Olds, R. Woodley, *Bootstrapping the Gini Coefficient of Inequality*, Ecology 1987, vol. 68, pp. 1548-1551; C. Damgaard, J. Weiner, *Describing Inequality in Plant Size or Fecundity*, Ecology 2000, vol. 81, pp. 1139-1142.

⁴³ P. Martinez-Cambor, *Central Limit Theorems for S-Gini and Theil Inequality Coefficients*, Revista Colombiana de Estadística 2007, Vol. 30, no 2, pp. 287-300.

where:

y_i – value i – of this observation,

\bar{y} – average value of observation for the population or group,

n – number of observations.

Gini and Theil coefficients calculated according to the formulas presented will take values in the range $<0;1>$. A higher level of differentiation will occur when the values of the coefficients will be closer to 1. A value of 0 is achieved in case of the same values of all observations. Theil coefficient, however, will take much lower values than the Gini coefficient for the corresponding populations. It is related to the smoothing of logarithm operation. The analyses used the indexes, i.e. the coefficients expressed as a percentage. This means that values of Gini and Theil indices will be within the range from 0 to 100.

The final verification in terms of the processes involved in the development of rural gminas was carried out using the model of unconditional beta convergence, which was adapted to the local level. The adjusted model was based on the idea that beta-convergence refers to a process in which economic growth of regions with relatively lower wealth exceeds significantly the dynamics of development of wealthier areas, enabling the implementation of the strategy (effect) of catching-up, i.e. the progressive reduction of development disparities and striving for equilibrium. The concept of convergence is derived from the so-called neoclassical growth theory of R. Solow⁴⁴, whose key assumption is that the profitability of the factors of production, particularly of capital, decreases. According to this, the process of economic growth should lead the state (region, area) to long-term equilibrium (steady-state), in which the pace of economic growth will depend only on the (external-exogenous) factors: technological progress and labour supply. The consequence of the reduction in profitability in rich economies is the assumption that the higher growth rate of poor economies should lead to “catching-up” with the value of studied characteristic (e.g. income and/or GDP per capita) and equalizing the level of development in both groups. According to the neoclassical growth theory, the channel for equalization of developmental differences is the mobility of capital. Assuming that the production function has a two-factor form (capital and labour) of the Cobb-Douglas function with fixed effects of scale and declining marginal productivity of factors, the marginal return on capital should be the higher the lower is the ratio of capital to labour factor (K/L):

⁴⁴ R.M. Solow, *A Contribution to the Theory of Economic Growth*, The Quarterly Journal of Economics 1956, Vol. 70, No. 1 (Feb.), pp. 65-94.

$$Y_K = \alpha A \times \left(\frac{K}{L} \right)^{\alpha-1} \quad 0 < \alpha < 1.$$

The differences in factor productivity (A) cause that capital should flow out of areas with high capitalization to regions with low capital resources (in search of extra profit). If cross-border differences in labour productivity were derived from differences in capital resources, one can assume that capital mobility will lead to a gradual increase in labour productivity and income (or GDP) per capita in economies with lower levels of development. The pace of development is determined by the position of the economy relative to its long-term equilibrium. The rate of regional development will be high when the initial level of GDP per capita is low compared to its long-term position. In contrast, when the economy is characterized by a low level of output and a low position in the long-term equilibrium, the economic growth will also be low. To verify the existence of the convergence process one uses econometric models, where the dynamics of the dependent variable (tested characteristics, such as income) is described by means of delayed values (i.e. from past periods, mostly from the preceding period). Beta convergence may take various forms. If we assume that the only factor leading to the increase is the dynamics of the analysed characteristics, we can talk about the so-called absolute convergence. Achieving equilibrium may, however, be subject to additional factors such as the level of equipping in production factors, institutional factors that can differentiate analyzed economies in a long term. Taking into account additional factors makes that the hypothesis of beta convergence is tested in conditional terms. The methodology used to measure beta convergence requires in general the estimation of the regression equation in the form:

$$\ln(\Delta y_{it}) = a + b \ln y_{i,t-1} + \gamma Z_{it} + v_{it}$$

where:

- y_{it} and Δy_{it} describe the level and rate of growth of GDP or per capita income for the region in period t,
- Z_{it} is a vector of factors affecting the level of income or GDP growth,
- v_{it} is the rest of the equation, and
- a, b, and γ are regression coefficients to be estimated.

The estimator $b = -(1 - e^{-\beta T})$ is of crucial importance in this approach; its negative (or) positive, statistically significant value of $b < 0$ ($b > 0$) means the occurrence of phenomenon of convergence (or economic divergence). No significance of the b parameter means that one cannot determine occurrence of convergence or divergence. The regression coefficient b is used as a base for calculating

the crucial parameter β for the convergence, called the convergence coefficient, which is calculated from the identity:

$$\beta = -\ln(1 + b) / T$$

where T is the time between the first and the last observation. Sign of parameter β indicates the occurrence of convergence or divergence, i.e. if $\beta < 0$ there is a process of divergence between the regions, and in case when $\beta > 0$ there is the process of convergence. The calculated value of β also determines the speed at which the analyzed regions move towards their equilibrium, i.e. it gives the percentage by which the distance from equilibrium was reduced in the unit of time. The higher the coefficient, the faster the rate of convergence (divergence). On the basis of β coefficient one can calculate the so-called half-life value specifying the time to reduce the existing differences in development by half:

$$hl = -\frac{\ln 2}{\beta}$$

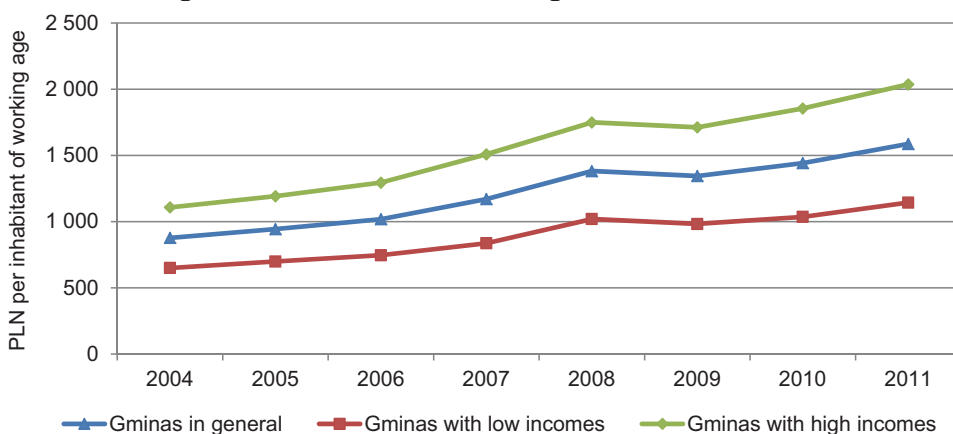
The regression equation can be estimated using cross-sectional or panel data, indexed over time. To verify the hypothesis of beta convergence one uses models for panel data with estimation techniques based on the classical method of least squares and the generalized method of moments (GMM). This approach allows for identifying the factors of regional development (economic growth). Correctness of estimates requires verification of the validity of introducing additional instruments. Sargan test is used for this purpose, which under the null hypothesis assumes no correlation between the instrumental variables and the rest of the equation, and thus the correctness of the specification and the validity of introducing the instruments. With dynamic panel models, assessment of the compatibility of the estimator also requires verification of the assumption of the absence of autocorrelation of random second-order component in equations for the first differences. Verification of this hypothesis uses the Arellano and Bond test (AR (2)). In the course of adapting the model to the local level one assumed that the primary measure used for the analysis will be the level of own revenues of gminas per 1 inhabitant of working age (DW).

The above analyses use the data from CSO Local Data Bank for 2004-2011 for 1,529 rural gminas. The population of this group of gminas was without the units with own income in excess of the average value of income by more than 3 standard deviations. These were mainly gminas obtaining substantial income from compensation for mining damage and those of typical tourist profile.

3.2.2. Promoting entrepreneurship and local development

In the study period, i.e. in 2004-2011, the nominal own incomes per 1 inhabitant showed an upward trend (Figure 3.1). The break in the trend occurred in 2009, which was associated with the financial crisis in Europe. However, in the next two years after the collapse there was again an increase in income. In this context, it can be concluded that both the market conditions, as well as state-led policies were conducive to the development of rural areas and contributed to the relatively rapid overcoming of the negative effects of the financial crisis. In a similar way proceeded changes in both low-income gminas and in high income gminas⁴⁵ (Figure 3.1). However, faster income growth was noted in gminas with high incomes. For this reason, the difference between the average incomes in these two groups of gminas significantly increased. In 2004, the average own income in gminas with high incomes were higher by 70% than in the second group, while in 2011, already by about 78%. The observed trends and the course of changes in the level of own income are therefore prerequisites to finding that the policy pursued to support the development of entrepreneurship, including based on various instruments financed by the European Union, does not contribute to equating the level and pace of development at the local level. However, one should note that this process of equating the development in the local system does not have to be the goal of this policy. In addition, slower income growth for low-income gminas can be explained in the context of the Williamson's hypothesis. According to it, they still have not reached a certain level of economic development to significantly accelerate the rate of development.

Figure 3.1. Own income of rural gminas in 2004-2011

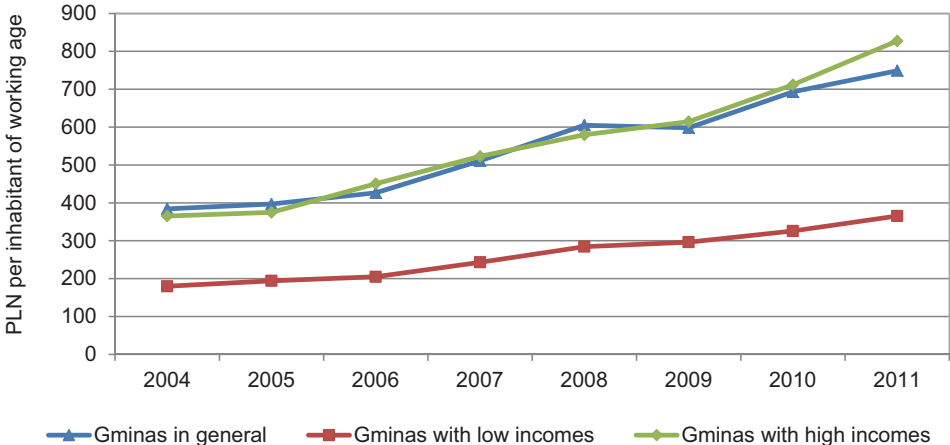


Source: own calculation based on CSO Local Data Bank.

⁴⁵ The criterion for the division was the median of own income per 1 inhabitant of working age.

However, rural gminas are not a homogeneous group in terms of the amount of their incomes. This is evidenced by the occurring quartile gap (Figure 3.2), i.e. the difference between the amount of own income, with respect to which 25% of the richest gminas achieve higher income, and the amount of income, with respect to which 25% of the poorest gminas achieve lower income. The occurring, and at the same time increasing diversity is evidenced by the fact that a gradual increase in quartile range of own income per inhabitant of working age was observed in the studied gminas. Quartile range, however, was at much higher level in the group of gminas with high incomes than in other units. Additionally, a faster growth rate of quartile range was observed in this group. It should also be noted that both the level of quartile range, and the pace of change were similar in the case of gminas with high income and the total population of rural gminas. This means that the presence of a group of rural gminas with high incomes, which is characterized by a much higher rate of economic growth as measured by pace of growth in own income. Differences in the level of own income also deepened in the case of low-income gminas. However, differentiation in this group proceeded much slower. Faster growth in income of the richest gminas was confirmed also in the group with low income. These income differences and tendencies for further differentiation are another prerequisite for the adoption of the theorem on the significantly faster pace of development of gminas receiving the highest income. Instruments of regional and structural policy failed to initiate the process of “local convergence”. However, this does not preclude the thesis of their positive role in preventing rapid increase in differences in the pace of local development.

Figure 3.2. Quartile range of own income in rural gminas in 2004-2011



Source: own calculation based on CSO Local Data Bank.

The diversity of own income of rural gminas is also evidenced by coefficients of variation⁴⁶ (Figure 3.3). In the scale of all rural gminas, the income volatility was quite high. The coefficient of variation exceeded 40% for almost the entire analysed period. However, the group of gminas with high incomes was characterized by much higher volatility. This confirms to some extent the results of the analysis of quartile range. In the case of the coefficients of variation one observed slightly different trends in the two studied groups of gminas. In the group of gminas with high income, diversification of the level of own income per 1 inhabitant of working age was relatively stable until 2007. This group responded to the symptoms of the financial crisis with slight decrease in the internal differentiation. But it was much more the result of limiting the increase in income in the richest municipalities than the acceleration of growth in the poorest gminas. In 2008-2010 there was, in turn, a significant increase in diversity of own income, to the level exceeding the pre-crisis diversification. This means that the richest gminas fared much better with the crisis than those with lower incomes. In the group of gminas with low incomes, internal diversification decreased to 2007. The effect of the crisis was, however, a reversal of the trend and a rapid increase in income diversification. It should be noted that the increase in own income diversification during the crisis was not prevented by the introduction in 2007 of new instruments of European Union policy for 2007-2013. They may, however, have a limited impact on reducing differences in the two groups of gminas, in 2011. On the basis of such a course of changes in diversification of own income, one can also hypothesize that the EU policy instruments, which are oriented on the development of entrepreneurship, can have a positive impact on equating the level or pace of economic development of gminas, but in the conditions of stable economic growth of the country. Finding whether this hypothesis is correct requires further verification, especially in the context of a different response to the crisis symptoms in different types of gminas. Confirmation of this relationship could be a basis for the preparation of regional and structural policy instruments, which would limit the impact of the crisis.

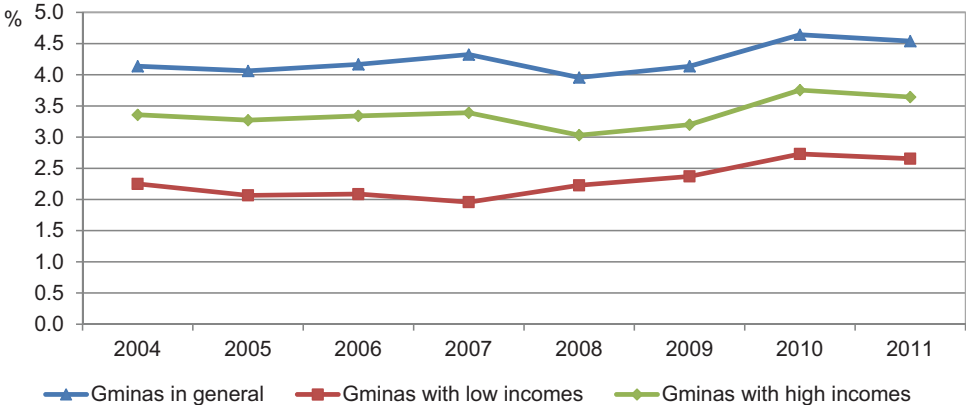
Considering the impact of the measures from the budget of the European Union on local economic development, one should pay attention to changes in own income of gminas in groups differing in terms of the level of absorption of these measures by the local community⁴⁷ (Figure 3.4). Launching in 2007 of new programmes created quite wide possibilities for people and businesses to establish new businesses and extend existing businesses. However, the European

⁴⁶ Ratio of the standard deviation to the arithmetic mean expressed as a percentage.

⁴⁷ The criterion was the median of income obtained in individual gminas from operational programmes referred to in the methodical chapter, calculated per 1 inhabitant of working age.

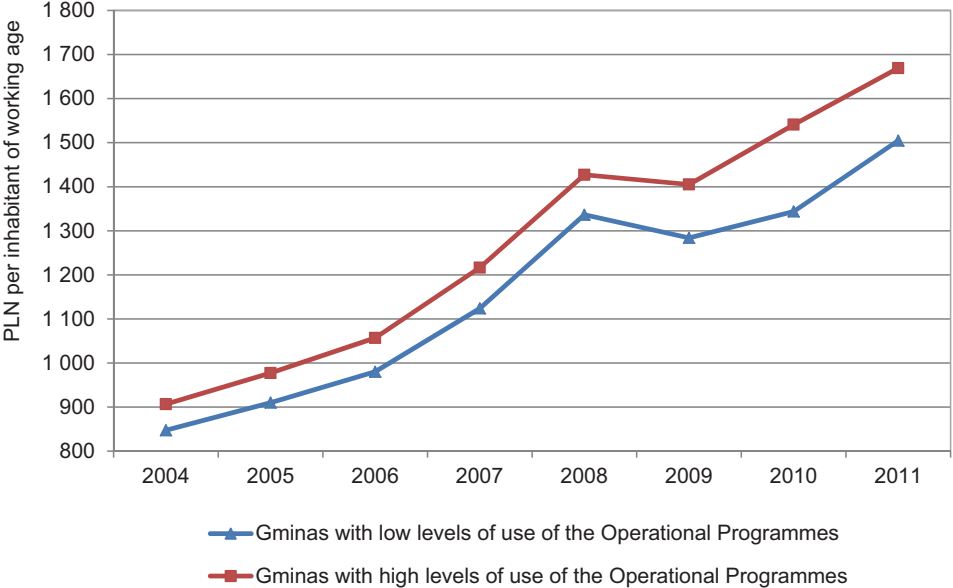
Commission introduced the need to engage own capital as a condition of assistance. As a result, larger scale of the use of funds was in municipalities receiving higher own income in the period 2004-2007 (Figure 3.4), i.e. in units where people and businesses obtained higher incomes. In other words, entities had greater opportunities to engage own funds in establishing or developing business ventures. However, by 2007, own income of both groups of gminas steadily increased, and the difference in nominal terms remained at a constant level. Since 2008, i.e. almost from the start of the programmes, gminas with greater use of EU aid began to obtain more and more advantage in terms of their incomes. At the same time there was a smaller decrease in their income as a result of the financial crisis. It can, therefore, be assumed that the scale of EU support had a significant positive impact on own income of rural gminas. However, the use of various support programmes did not initiate the process of equating income of gminas and even lead to increase in differences at the local level. Changing the criteria for the distribution of the support measures could counteract the increasing differences in the pace of economic development of gminas. One must though bear in mind other barriers to economic development when taking this type of action. Administrative increase in allocation of funds to units with lower incomes may lead to a significant reduction in the efficiency of support due to the presence of these barriers. On the basis of changes in own income, one can also draw a preliminary conclusion that the possibility of closing the gap in local development in rural areas with the help of existing policy instruments to promote entrepreneurship is generally very limited, or even non-existing. This does not undermine earlier claims regarding the positive impact of these instruments on the income received regardless of its initial level.

Figure 3.3. Coefficients of variation of own income per inhabitant of working age in rural gminas in 2004-2011



Source: own calculation based on CSO Local Data Bank.

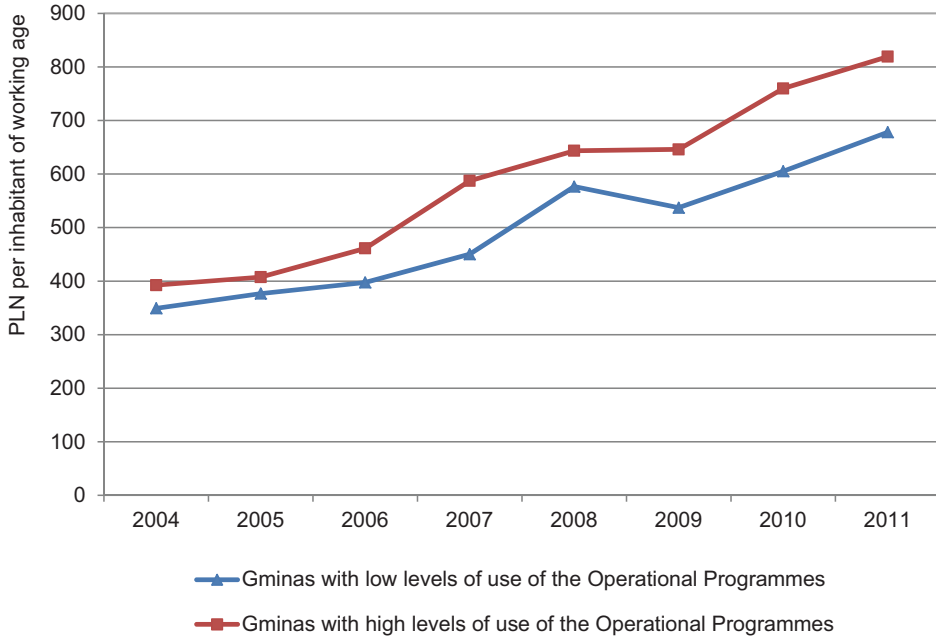
Figure 3.4. Own income of rural gminas in 2004-2011, by groups differed in terms of the use of EU funds under operational programmes involving support for the development of entrepreneurship



Source: own calculation based on CSO Local Data Bank.

The growth rate of own income, however, was quite different both in gminas with high and low absorption of EU funds. This is evidenced by changes in quartile range of own income per inhabitant of working age (Figure 3.5). The upward trend of these statistics in the two groups of gminas indicates the isolation of a subgroup with high incomes, and at the same time a higher rate of growth. The advantage of high-income communities in terms of economic development, however, is larger and increases faster in the group with higher levels of use of EU assistance provided under the various operational programmes. This confirms the close relationship between the level of local economic development and utilization of EU funds. It seems, however, that public support, despite the acceleration of local development, leads to divergence rather than convergence in rural areas. One can even expect the emergence of local core centres in rural areas, which will be sort of leaders in terms of rural development. This phenomenon should not be assessed negatively because it can be one of the paths to achieve regional convergence. The effectiveness of support for this model of development may in fact be higher than in the model to equate the rate of development.

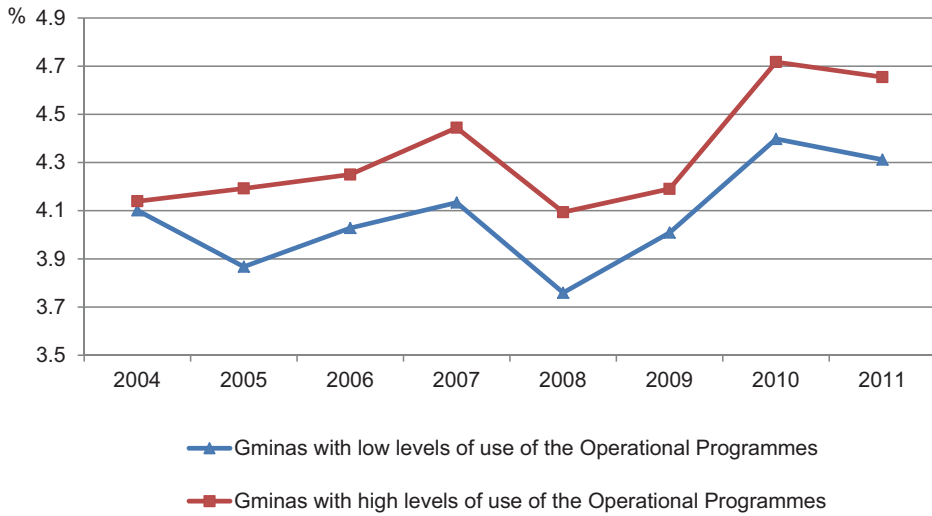
Figure 3.5. Quartile range of own income in rural gminas in 2004-2011, by groups differed in terms of the use of EU funds under operational programmes involving support for the development of entrepreneurship



Source: own calculation based on CSO Local Data Bank.

Coefficients of variation of own income of gminas take large values in both the group with low and a relatively high use of EU funds (Figure 3.6). Higher levels of internal diversity, however, is characteristic of the group with a high level of use of these resources. Since 2005, changes in diversification of gminas are similar in both groups. But in recent years there has been a much greater increase in income volatility in the group of gminas with high levels of use of EU funds. One can say with high probability that this was the effect of isolating the group of gminas with high incomes as a result of, inter alia, the impact of EU support. However, the analysis of gminas diversification depending on the level of this support does not confirm the process of aligning the pace of local development.

Figure 3.6. Coefficients of own income diversification in rural gminas in 2004-2011, by groups differed in terms of the use of EU funds under operational programmes involving support for the development of entrepreneurship



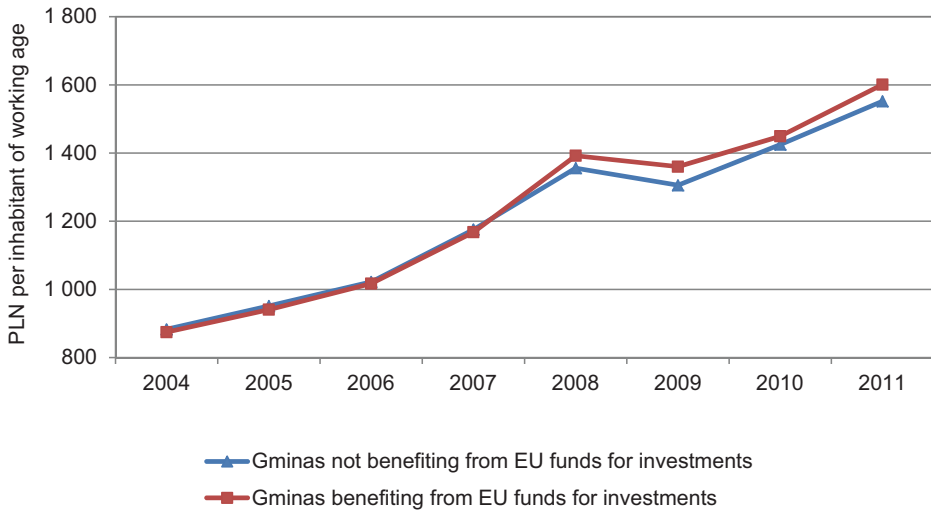
Source: own calculation based on CSO Local Data Bank.

Analyzing the relationship between local development and the policy to support entrepreneurship, one needs to pay attention to changes in own income of gminas, depending on the use of EU funds for municipal investments. Infrastructure is an intermediate factor in the development of entrepreneurship, and therefore this support should, in conditions of limited resources of gminas, significantly contribute to the development of economic activity. The consequence should be the increase in own income. Gminas should therefore be motivated to widespread use of this instrument. However, in 2006-2009⁴⁸, as many as 437 gminas in the surveyed population, i.e. 28.6%, did not use the possibilities of financing investments. The distribution of funds for municipal investments though should be assessed as relatively rational. Gminas that benefited from the support reached – before its acquisition – slightly lower own income per inhabitant of working age (Figure 3.7). Their abilities to use own resources for the development of the infrastructure were a bit more limited. However, already in 2008, they began to generate income at a level higher than other gminas. Support for infrastructure development is therefore associated with an increase in own income – just like for other policy instruments to promote entrepreneurship. The analy-

⁴⁸ The support for municipal investment in this period was the basis for the division into two groups, namely the gminas benefiting and not benefiting from the support. The choice of the period of support was decided by the availability of data in the CSO Local Data Bank.

sis, however, is the premise to the conclusion that, in contrast to the previously discussed financial support instruments, it is in some way connected with the process of aligning the gminas in terms of economic development. Full confirmation of this assumption is impossible at this stage of regional and structural policy of the European Union.

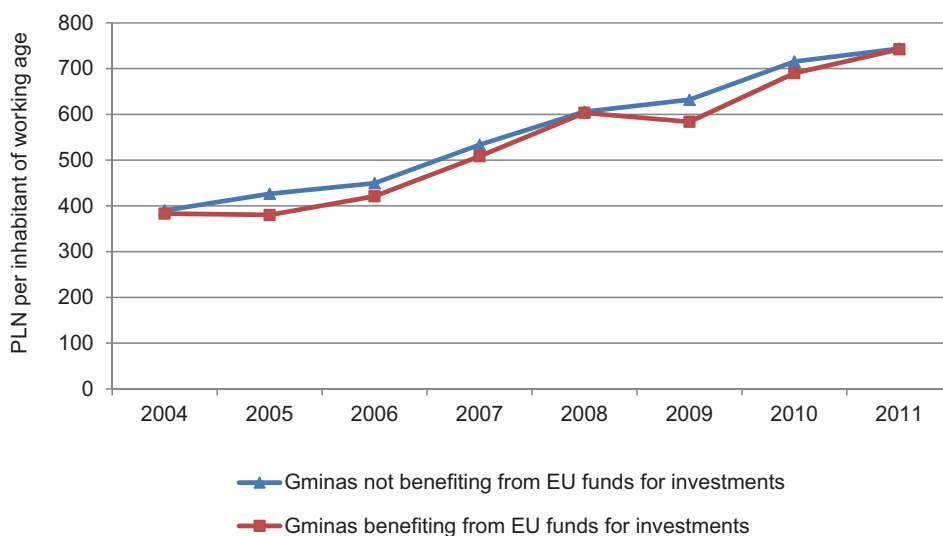
Figure 3.7. Own income of rural gminas in 2004-2011, by groups differing in terms of the use of EU funds earmarked for municipal investments



Source: own calculation based on CSO Local Data Bank.

Regardless of the decision taken by the gminas regarding the co-financing of municipal investments from EU funds, there was the aforementioned process of isolating a group of gminas with high incomes and a higher rate of growth. This is evidenced by the gradual increase of the quartile range in both groups of gminas (Figure 3.8). However, the advantage of these gminas in terms of own incomes and their growth was slightly lower in the group benefiting from EU support – although in 2011 it was the same. Financial resources for municipal investments could therefore in some sense initially slow down the process. Nevertheless, the increase in income achieved with their help and other policy instruments offset the effects of the initial slowdown in terms of isolating a group of the fastest growing gminas. On the basis of the analyses, one can confirm the thesis that the level and pace of local development, as well as local convergence processes are the result of various factors. The various policy instruments to support the development of entrepreneurship can therefore cause different directions of change, and in some areas reduce achieved results.

Figure 3.8. Quartile range of own income of rural gminas in 2004-2011, by groups differing in terms of the use of EU funds earmarked for municipal investments

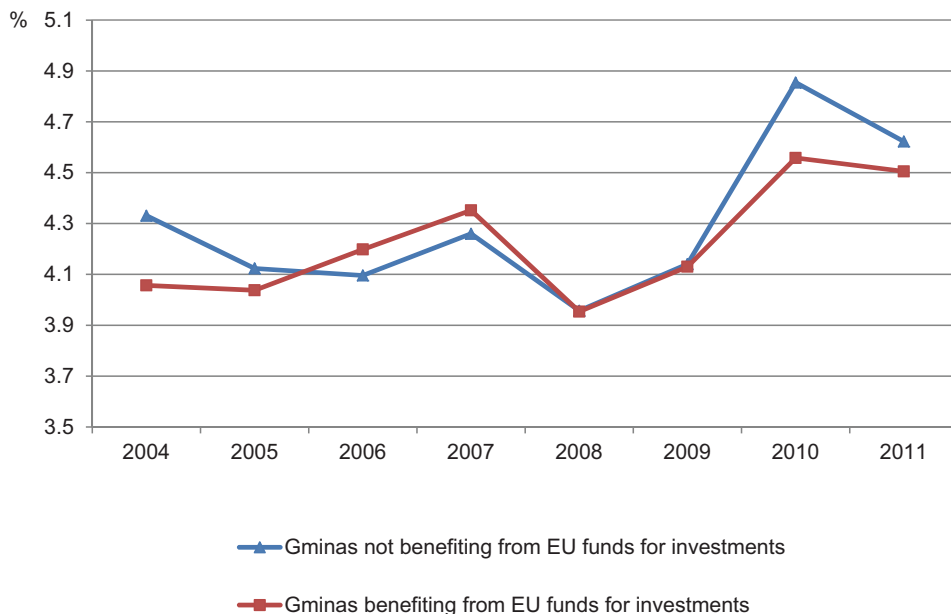


Source: own calculation based on CSO Local Data Bank.

Internal diversification of gminas in terms of income per 1 inhabitant of working age (Figure 3.9) was relatively high in both groups of gminas in the studied system. By 2008, however, there was no significant increase in the diversity, and during the crisis it was even reduced. As in the case of groups differing in the amount of EU funds raised from various operational programmes, so in this case there has been a marked increase in diversity in both groups, in the last years of the period – as compared to the period 2004-2009. In contrast to the previous system, in which higher growth in diversity was observed in gminas with high levels of fundraising, this time higher increase of this ratio was reported in gminas not benefiting from the support to municipal investments. This is, therefore, another symptom of municipal investments slowing down the pace of development of gminas.

The analyses of diversification of own income of gminas do not give a complete picture of occurring changes. The results in many cases led to conclusions of a fairly large or fairly high diversity of own income of gminas per 1 inhabitant. These concepts in case of analysis of basic statistics are, however, relative and subjective in nature. In order to objectify the results the Gini coefficients were used to assess income diversification of gminas per 1 inhabitant of working age, as a measure of local economic development and changes of this diversification. This will also allow verification of the previously obtained results.

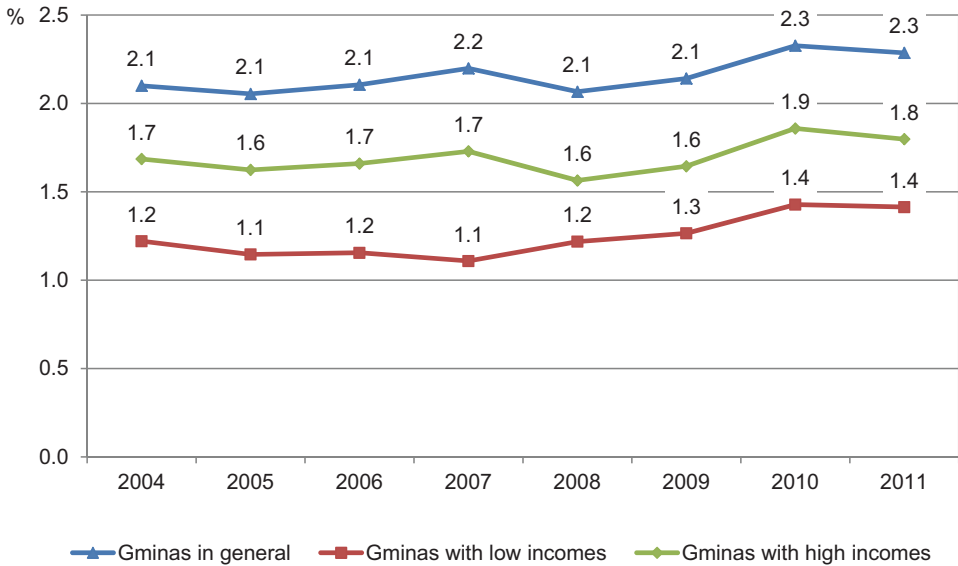
Figure 3.9. Coefficients of diversity of own income of rural gminas in 2004-2011, by groups differing in terms of the use of EU funds earmarked for municipal investments



Source: own calculation based on CSO Local Data Bank.

The analysis of the Gini indices obtained for rural gminas (Figure 3.10) shows that diversification of income was not too high either in the whole population and in groups of varying in size of income. The changes confirmed the increase in diversification regardless of the level of income. In addition, trends in the Gini indices in the period are similar to the trends characteristic for the coefficient of variation in a similar system. They thus confirm the previously discussed reaction of gminas with high incomes to the financial crisis, namely the decrease in diversification and repeated growth in the subsequent years. One can therefore sustain the thesis about isolating a high-income group, which also achieved a higher rate of growth. However, faster growth of diversification in own income of gminas in the period occurred in the group of low-income gminas. In 2004, the Gini index in gminas with higher income was in fact higher by 4.7 percentage points than in other gminas, while in 2011 only by 3.9 percentage points. The analysis of Gini coefficients does not confirm the process of aligning the income of rural gminas.

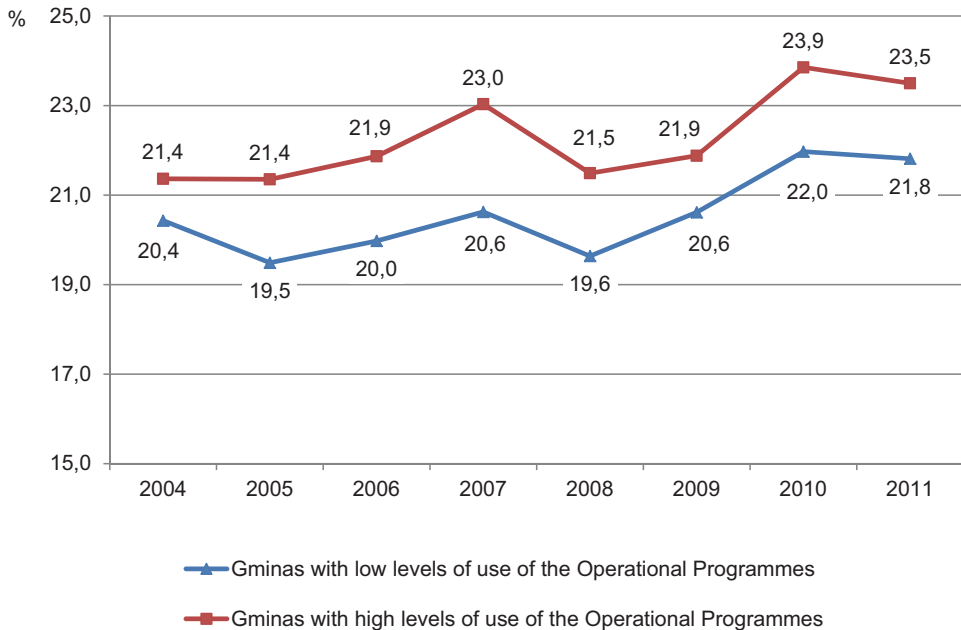
Figure 3.10. Gini indices for own income per 1 inhabitant of working age in rural gminas in 2004-2011



Source: own calculation based on CSO Local Data Bank.

Changes and relationships of Gini indices in groups of gminas diversified in terms of the level of use of EU funds by the local community (Figure 3.11) were similar to the case of coefficients of variation for the income of these groups. Both groups showed a slight upward trend of the coefficient, which means widening the gap of income regardless of the level of support used. However, gminas with higher use of those funds were also characterized by higher level of the Gini coefficient in the corresponding period, i.e. they were more diverse in terms of their income. Analysis of changes in the Gini coefficient confirms the lack of impact of the EU funds absorbed by the local community on bridging the differences in the level and pace of local development. These measures affect rather the widening of the gap. One can also say that they favour particularly the development of the most developed gminas. However, taking into account the relatively low level of Gini coefficients and widening of the gap, one should confirm the thesis formulated earlier that a significant portion of the underdeveloped rural gminas have not yet reached an adequate level of development in order to effectively use public support to significantly accelerate the rate of growth.

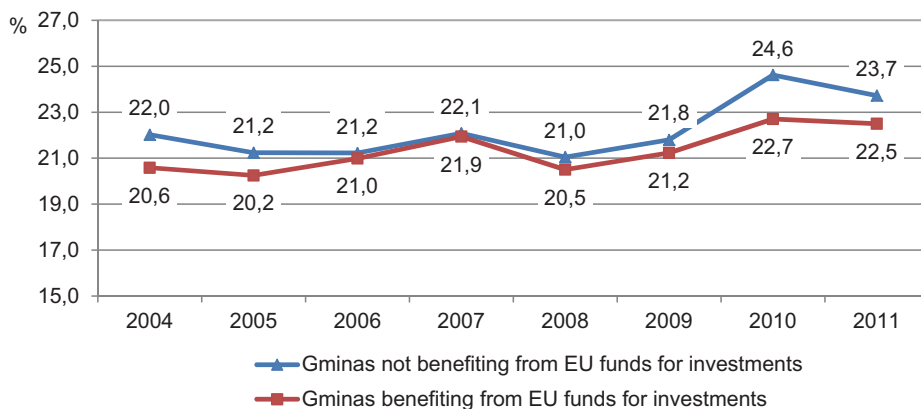
Figure 3.11. Gini indices for own income per inhabitant of working age in rural gminas in 2004-2011, by groups differing in terms of the use of EU funds under operational programmes involving support for the development of entrepreneurship



Source: own calculation based on CSO Local Data Bank.

Analysis of changes in Gini indices for groups of gminas differing in terms of the use of EU funds for municipal investments (Figure 3.12) shows that throughout the period considered, the gminas financing investments from these funds showed less variation in own income. However, in 2004-2007, the income divergence of this group deepened much faster than in the case of gminas that do not use the assistance. In 2007, this trend broke down and gminas benefiting from EU aid for municipal investment again began to experience lower rate of differentiation of income. EU support for municipal investments may therefore slow down the processes of differentiation of rural areas in terms of economic development. These conclusions from the analysis of the Gini coefficients are quite similar to the conclusions of the analysis of the coefficient of variation in the corresponding system of gminas, which also confirm the above relationship.

Figure 3.12. Gini indices for own income per inhabitant of working age in rural gminas in 2004-2011, in the groups differing in terms of the use of EU funds earmarked for municipal investments

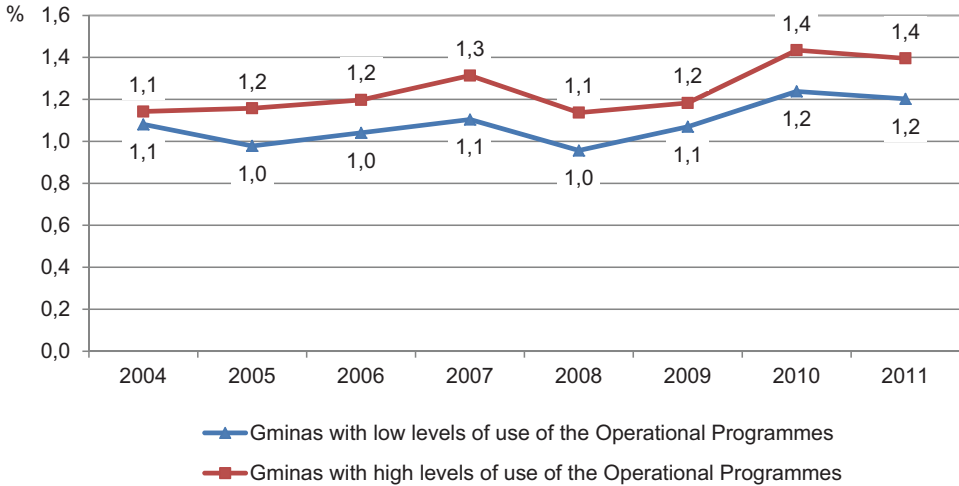


Source: own calculation based on CSO Local Data Bank.

Analysis of basic statistics and Gini indices for own income confirms the diversification of rural municipalities and the deepening of existing differences associated with the isolation of a group of gminas with high incomes and a higher rate of growth. The relatively low values of the Gini coefficient show, however, that the variation is not too large. If one also takes into account the lack of a clear acceleration of the rate of development in the least developed gminas, it can be concluded that a significant proportion of gminas has not yet reached the critical level of development, beyond which the rate will significantly increase. The structural and regional policy, focused on the use of financial instruments, has no positive impact on reducing inequalities in local development. However, this does not mean the absence of a positive effect on income growth and slowing down the rise of differences. These relationships are further confirmed by the analysis of changes in Theil coefficient for own income per inhabitant of working age (Figure 3.13 and 3.14). However, it is difficult to draw further conclusions from changes in this measure of diversity. Trends in diversity of rural gminas identified on the basis of Theil indices were in fact almost identical to the trends set by the Gini coefficient. Values of Theil indices indicate, however, that the diversity of gminas in terms of income distribution is essentially negligible. In a sense, this disputes the usefulness of this measure in the analysis of income inequalities in gminas⁴⁹. However, its application allowed verification of the authenticity of ongoing trends obtained on the basis of previous analyses.

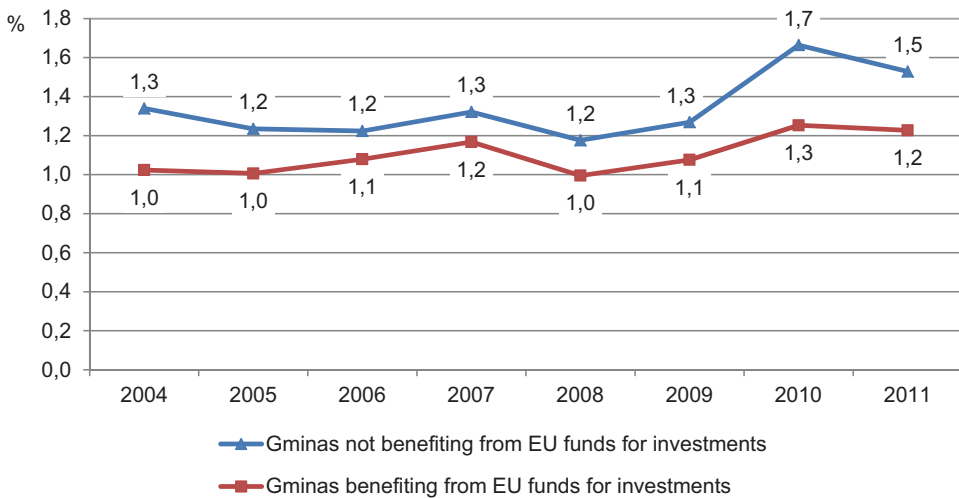
⁴⁹ Values of the coefficient are sensitive to the values of the assumed rate of income. It is related to the formula for calculating the coefficient, which includes smoothing effect of logarithm.

Figure 3.13. Theil indices for own income per inhabitant of working age in rural gminas in 2004-2011, by groups differing in terms of the use of EU funds under operational programmes involving support the development of entrepreneurship



Source: own calculation based on CSO Local Data Bank.

Figure 3.14. Theil indices for own income per inhabitant of working age in rural gminas in 2004-2011, by the groups differing in terms of the use of EU funds earmarked for municipal investments



Source: own calculation based on CSO Local Data Bank.

The analysis of basic statistics and the Gini and Theil indices does not give a complete picture of the process of aligning the level and pace of development of gminas. It is rather an analysis of differentiation, based on which one

can define some rationale of this process. In order to verify or rather extend the results obtained, a method of unconditional beta convergence has been used. This method allows determining whether the gminas with low levels of income are catching up in terms of their growth with gminas with higher income and determine the time in which the existing differences will be reduced by half. Analysis of changes in own income, carried out by the unconditional beta convergence (Table 3.1 and 3.2) shows that the phenomenon occurs of local convergence among gminas – determined based on changes in own income.

Table 3.1. Results of the regression analysis for the unconditional convergence type β for own income per inhabitant of working age in rural gminas in 2004-2011

Specification	Value of regression coefficient	Standard error	P-value	Significance level
Entire population of gminas				
$\ln(DW)_{it-1}$	0.370951	0.055928	3.30E-11	0.01
# observation	7,645			
AR(2)	-0.2485198		0.40187	
Sargan test	90.76079		2.73E-13	
Gminas with low incomes				
$\ln(DW)_{it-1}$	0.549867	0.055631	2.20E-16	0.01
# observation	3,850			
AR(2)	0.02546398		0.48984	
Sargan test	33.24531		0.002655	
Gminas with high incomes				
$\ln(DW)_{it-1}$	0.452623	0.073495	7.34E-10	0.01
# observation	3,795			
AR(2)	0.7901386		0.21472	
Sargan test	75.33453		2.05E-10	

Source: own calculation based on CSO Local Data Bank.

Table 3.2. Rate of unconditional convergence of type β and half-life of reducing the gap in own income per inhabitant of working age in rural gminas in 2004-2011

Specification	Beta-convergence coefficient	Half-life
Entire population	0.0451	15.4
Gminas with low incomes	0.0626	11.1
Gminas with high incomes	0.0533	13.0

Source: own calculation based on CSO Local Data Bank.

The regression coefficients obtained from the applied model have positive values and are significant at the level of 0.01. This is despite the increasing diversity that results from previous analyses. Estimates based on the model of the rate of change show that rural gminas reduce the distance to the long-term equilibrium state at a rate of about 4% per year. Reducing the difference by half should take about 15 years. It should be noted that the higher rate of approach to equilibrium occurs in low-income gminas (6% annually). Distance to the state of long-term sustainability of the group, for gminas with lower incomes, should be halved in a period of about 11 years. The previous analyses show that this group is less diverse. In gminas with a higher level of income, the rate of convergence is 5% per year and the period to reduce the distance to equilibrium in this group is 13 years. Therefore, the process of aligning the gminas in terms of economic development occurs under conditions of increasing diversity. The scale and growth rate of differentiation, however, affect negatively the rate of convergence. It should also be noted that these processes occur in the conditions of use of the different instruments of regional and structural policy oriented on growth of entrepreneurship.

Table 3.3. The results of the regression analysis for the unconditional beta convergence for own income per inhabitant of working age (2004-2011) by groups differing in terms of the use of EU funds under operational programmes involving support for the development of entrepreneurship

Specification	Value of regression coefficient	Standard error	P-value	Significance level
Gminas with low levels of use of Operational Programmes				
$\ln(DW)_{it-1}$	0.31782	0.070902	7.38E-06	0.01
# observation	3,825			
AR(2)	-0.6956774		0.24332	
Sargan test	50.51734		5.00E-06	
Gminas with high levels of use of Operational Programmes				
$\ln(DW)_{it-1}$	0.416062	0.081761	3.61E-07	0.01
# observation	3,820			
AR(2)	0.5279689		0.29876	
Sargan test	56.5419		4.70E-07	

Source: own calculation based on CSO Local Data Bank.

The impact of regional and structural policy on processes of aligning gminas in terms of economic development is highlighted by the results obtained from the model of unconditional beta convergence for groups of gminas differing in terms of the level of absorption of the different EU funds aimed at the

development of entrepreneurship (Table 3.3 and 3.4). The analysis shows that convergence process occurred regardless of the level of funds obtained from the European Union. The group of municipalities with high absorption rate achieved the rate of convergence at nearly 5% per year, which was 1 percentage point higher than in gminas with small-scale use of these funds. Moreover, in this group, the period of halving the distance to the long-term equilibrium state was less than 14 years and was shorter by more than 3.5 years than in gminas with low levels of absorption. This means that the higher level of financial support in the framework of the policies has a significant impact on the rate of convergence, in conditions of increasing diversity.

Table 3.4. Rate of unconditional convergence of type β and the period of halving the difference in own income in 2004-2011, by groups differing in terms of the use of EU funds under operational programmes involving support for the development of entrepreneurship

Specification	Beta-convergence coefficient	Half-life
Gminas with low levels of use of Operational Programmes	0.0394	17.6
Gminas with high levels of use of Operational Programmes	0.0497	13.9

Source: own calculation based on CSO Local Data Bank.

Table 3.5. Results of regression analysis for the unconditional beta convergence for own income per inhabitant of working age (2004-2011) in groups differing in terms of the use of EU funds earmarked for municipal investments

Specification	Value of regression coefficient	Standard error	P-value	Significance level
Gminas not benefiting from EU funds for investments				
$\ln(DW)_{it-1}$	0.17203	0.10683	0.1073	not significant
# observation	2,185			
AR(2)	0.405344		0.34261	
Sargan test	25.44232		0.030444	
Gminas benefiting from EU funds for investments				
$\ln(DW)_{it-1}$	0.413154	0.062847	4.90E-11	0.01
# observation	5,460			
AR(2)	-0.6863568		0.24624	
Sargan test	80.4922		2.29E-11	

Source: own calculation based on CSO Local Data Bank.

Table 3.6. Rate of unconditional convergence of type β and the period of halving the difference in own income in 2004-2011 in groups differing in terms of the use of EU funds earmarked for municipal investments

Specification	Beta-convergence coefficient	Half-life
Gminas not benefiting from EU funds for investments	0.0227	30.6
Gminas benefiting from EU funds for investments	0.0494	14.0

Source: own calculation based on CSO Local Data Bank.

Analysis of the process of the development of rural gminas, made using the model of unconditional beta convergence for groups of gminas isolated on the basis of their decisions on the use of European Union support for municipal investments (Table 3.5 and 3.6) also confirms a significant impact of policy on the pace of reaching the status of long-term equilibrium. In gminas not receiving support, the annual rate of approach to this state was at the level of 2%. However, it has been estimated on the basis of the regression coefficient, which was not statistically significant. The rate of local convergence in this group of gminas is therefore practically negligible, and the half-life of bridging the existing differences will be over 30 years – if it ever occurs due to the absence of statistical significance. This relationship, however, is significant in rural gminas that have benefited from this kind of support. The annual rate of approaching the state of long-term equilibrium in this case was close to 5%. The period of reducing the distance to that equilibrium was 14 years.

3.3. Creating new jobs in rural areas as a result of subsidizing business activities

Support in the form of rural subsidies related to improving the quality of life and business may take the form of direct support for the creation and operation of enterprises, as well as improving the general conditions for doing business. Both components are complementary, for it is difficult to expect significant economic effects only in supported enterprises (such as growth in revenue and company profits, employment growth, internationalization and innovation etc.), if they operate in adverse economic conditions (e.g. lack of a developed network telecommunications, roads, electricity network, etc.). While the identification and measurement of direct effects on specific economic parameters of functioning of a single company related to the improvement of the infrastructure surrounding the company is difficult (although not impossible), the effects of direct intervention in the enterprise are easier to diagnose and assess. An example of

the above can be investment grant, but it should be noted that estimates of the evaluation of its effects may be subject to some level of error.

When assessing the individual components of support for rural areas in Poland, one needs to ask the question also asked by K. Duczkowska-Małysz: Are there any chances of a good rural development policy, generating effects not because of billions of EU funds pumped into rural regions, but because – thanks to the criteria and conditions – an automatic mechanism has been created to accelerate modernization and growth, which is used by local governments, businesses, farms and non-governmental organizations to ensure development⁵⁰. This question is particularly justified in the case of direct support of business activity and entrepreneurship in rural areas – as this support is of non-social nature and is focused on the pro-development effect, using greater motivation of people receiving support for taking action. However, in order to answer such a complicated question, one needs to perform continuous monitoring of activities and resources earmarked for the development of rural areas. In the case of subsidies for activities of enterprises operating in rural areas, one has to consider in the first place whether and to what extent the objectives and outcomes set before the intervention of the state have been achieved, and secondly to try to make the fairest assessment of the overall effects (economic and social) arising from this intervention.

In Poland, there are still disparities in infrastructural facilities between rural and urban areas. As a result of the improvement in labour productivity in agriculture, there is the problem of managing the surplus labour by the non-agricultural sectors of the economy. Undeveloped labour resources in rural areas and their low mobility result in the need to stimulate business development. Instruments used in the structural policy, the Cohesion Policy and the regional policy are to play the role of stimulants for development of this activity⁵¹. Many studies and statistical data point to the fact that unemployment is particularly severe in rural areas. This fact is often not emphasized in official statistics due to the prevalence of the so-called hidden unemployment in rural areas. This phenomenon cannot be accurately determined due to the fact that part of the rural population, although it is unused labour force, does not meet one of the criteria necessary to obtain the status of an unemployed person referred to in the Act on

⁵⁰ K. Duczkowska-Małysz, Expertise. *Future of rural development policy. Possible scenarios. Dilemmas and Challenges*, Department of Rural Development, Warsaw School of Economics, Warsaw 2008, p. 3.

⁵¹ A. Wasilewski (scientific ed.), B. Chmielewska, M. Gospodarowicz, E. Ślązak, *Instrumenty polityki...*, op. cit., p. 7.

employment promotion and labour market institutions⁵². It is the criterion of farm size (hence the statistics show only those with farms with an area not exceeding 2 conversion hectares). As of the end of 2012, there were 53.5 thousand registered unemployed with such farms. Over the year, their number increased by 4.3 thousand people, i.e. by 8.8%⁵³. Even without taking into account the hidden unemployment, the rural areas should be considered particularly affected by unemployment. Approximately 39% of the Polish population lives in rural areas, while among the unemployed rural dwellers constitute about 43-45%. At the end of January 2013, 1 million unemployed living in rural areas were registered in labour offices. Compared to January 2012, the number of unemployed people living in rural areas increased by 8.1%⁵⁴.

It is not only the problem of unemployment in rural areas which is important, but also its spatial differentiation. Percentage of rural population in the total number of unemployed ranged from 22.0% to 62.8% depending on the region, and in as many as nine voivodeships exceeded the national average⁵⁵. In addition, the large spatial variability of unemployment in rural areas is not only limited to the difference between the various voivodeships. Also within regions there is a strong polarization (it should be noted that the variation in unemployment rates between voivodeships in Poland is much lower than the variation in unemployment rates between the economies of the European Union and the euro zone countries, at the level of sub-regions, the variation of unemployment rates in Poland increased from 0.23 to 0.36, the variation in unemployment rates at the county level is even greater – 0.39)⁵⁶. This problem has been recognized by experts dealing with rural development, which is why one of the measures of the Rural Development Programme aimed at subsidizing business enterprises (namely “Establishment and development of micro-enterprises”) introduced solutions rewarding projects in rural areas particularly affected by the unemployment – which will be discussed later in this paper.

Given the above data, one can say that the situation of the rural population remains difficult. This is due to several reasons. Generally, the most important

⁵² Act of 20 April 2004 on employment promotion and labor market institutions, Dz.U. of 2004, No. 99, item 1001, as amended.

⁵³ State and structure of registered unemployment in rural areas in 2012, Ministry of Labour and Social Policy, Labour Market Department, Warsaw 2013, pp. 6-7.

⁵⁴ Registered unemployment in Poland, Monthly Report – January 2013, the Ministry of Labour and Social Policy, Labour Market Department, Warsaw, p. 3.

⁵⁵ State and structure..., op. cit., p. 5.

⁵⁶ P. Broniatowska, P. Gajewski, A. Rogut, *Labour market in the eastern macroregion*, Report commissioned by the Ministry of Regional Development for the update of the socio-economic development strategy of Eastern Poland by 2020, the Ministry of Regional Development, Warsaw 2011, p. 11.

one is the persistently high unemployment of the population residing in rural areas including:

- insufficient number of jobs both in the countryside and in the cities for people not associated with farms, visible especially during the negative impact of the economic crisis on the labour market (not creating new, or elimination of existing places of employment, including increased redundancies),
- smaller resources of the Labour Fund during the year, in comparison to previous years (e.g. compared to 2010), for active programmes to combat unemployment, which resulted in reducing the number of people covered by these programmes (subsidized jobs, training, internships, vocational training of adults, socially useful work),
- persistence of hidden unemployment in agriculture⁵⁷.

Considering the above facts, this paper focuses on estimating the effects of subsidies to business enterprises in rural areas in terms of their impact on job creation. There is no other solution to the problem of unemployment in rural areas (if we want to avoid the so-called “desertion of countryside”) than creation of new jobs (including those not associated with agriculture).

3.3.1. Effects of subsidizing economic activities in rural areas in terms of job creation

As is evident from the title of Axis 3 of the RDP (Quality of life in rural areas and diversification of the rural economy), the overall effect of interventions in this area should be associated with the development of rural areas through economic and social impact, both through the creation of new micro-enterprises and the diversification into non-agricultural activities⁵⁸. However, one of the immediate effects that should be associated with the promotion of enterprise and entrepreneurship is the creation of new jobs. It is written in the direct objective of measure 311 – “Diversification into non-agricultural activities” carried out under Axis 3, which reads: Diversification of agricultural activities in the direction of taking up or developing non-agricultural or agricultural activities by farmers, family members and spouses of farmers, which contributes to the creation of non-agricultural sources of income, promotion of employment outside agriculture in rural areas⁵⁹. It is therefore expected that the measures of the entire Axis 3 will provide new jobs and new income opportunities in rural areas. A similar emphasis on the creation of new jobs, as the main determinant

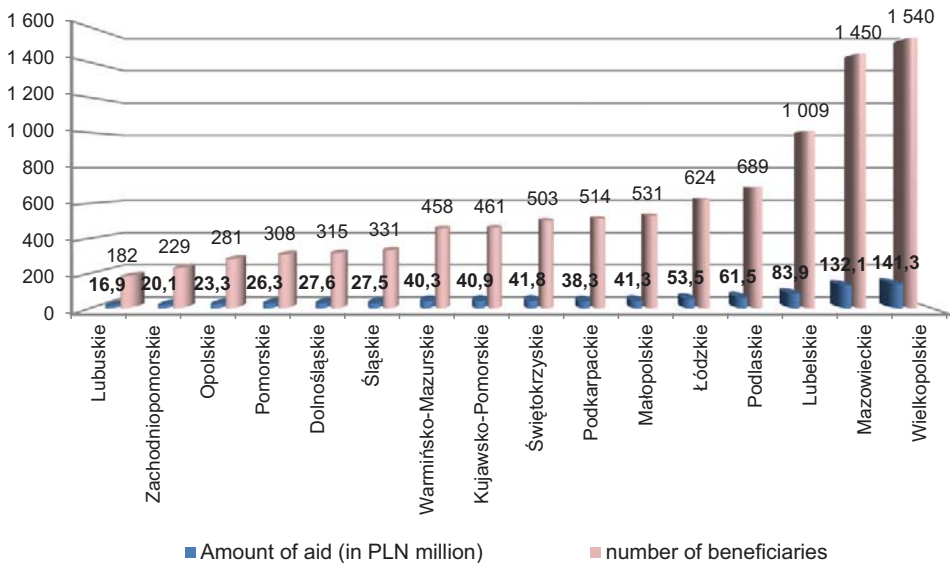
⁵⁷ State and structure..., op. cit., p. 7.

⁵⁸ Rural Development Programme for 2007-2013, the Ministry of Agriculture and Rural Development, Warsaw 2011, p. 168.

⁵⁹ Rural Development Programme for 2007-2013, op. cit., p. 293.

of quality of life in rural areas was placed when formulating another direct objective of measure under Axis 3 “Creation and development of micro-enterprises”. This objective is: “Increase of economic competitiveness of rural areas, development of entrepreneurship and labour market, and consequently – increase in employment in rural areas”⁶⁰. As is clear from the examples given, one of the main emphases of the entire policy to support enterprises in rural areas has been placed on the direct effect of job creation. Therefore, the aid in the form of subsidies, which were granted to functioning or emerging enterprise is most commonly subject to the condition of creating new jobs (for example, one of the results of the measure “Creation and development of micro-enterprises” is the creation of 28.7 thousand jobs, while in the case of “Diversification in non-agricultural activities” it was 15.4 thousand jobs).

Figure 3.15. Amount of payments made (PLN million) and the number of beneficiaries in Measure 311 – Diversification into non-agricultural activities, cumulatively, as of 31.12.2012



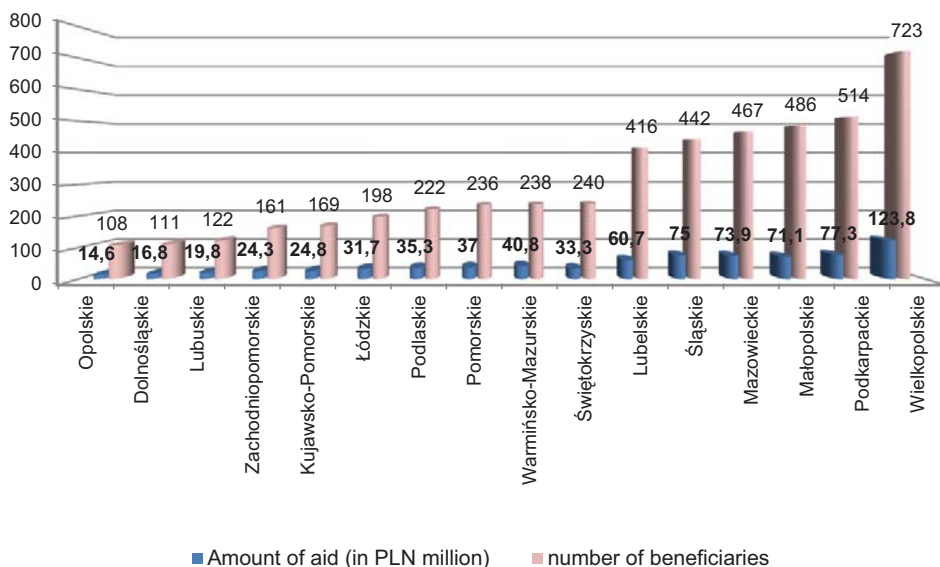
Source: Report of the Agency for Restructuring and Modernisation of Agriculture for 2012, *Agencja Restrukturyzacji i Modernizacji Rolnictwa*, Warsaw 2013, p. 52.

The measure “Diversification into non-agricultural activities” was launched in June 2008. Until the end of 2012, there have been five calls for proposals. Thus, during 5 years of the measure, there have been almost 29 thousand requests made for assistance in the amount of PLN 2,626.1 million (including in

⁶⁰ Rural Development Programme for 2007-2013, op. cit., p. 298.

the calls: in 2008, 4,050 applications submitted for the amount of PLN 331.3 million, in 2009 – 3,837 applications for the amount of PLN 306.7 million, in 2010 – 8,816 applications for the amount of PLN 784.7 million, and in both calls in 2011, 12,296 applications for the amount of PLN 1,203.4 million); 14,120 contracts were concluded for the amount of PLN 1,242.2 million; ARMA paid PLN 816.6 million to 9,424 beneficiaries⁶¹.

Figure 3.16. Amount of payments made (PLN million) and the number of beneficiaries under Measure 312 – Creation and development of micro-enterprises, cumulatively as of 31.12.2012



Source: Report of the Agency for Restructuring and Modernisation of Agriculture for 2012, the Agency for Restructuring and Modernisation of Agriculture, Warsaw 2013, p. 53.

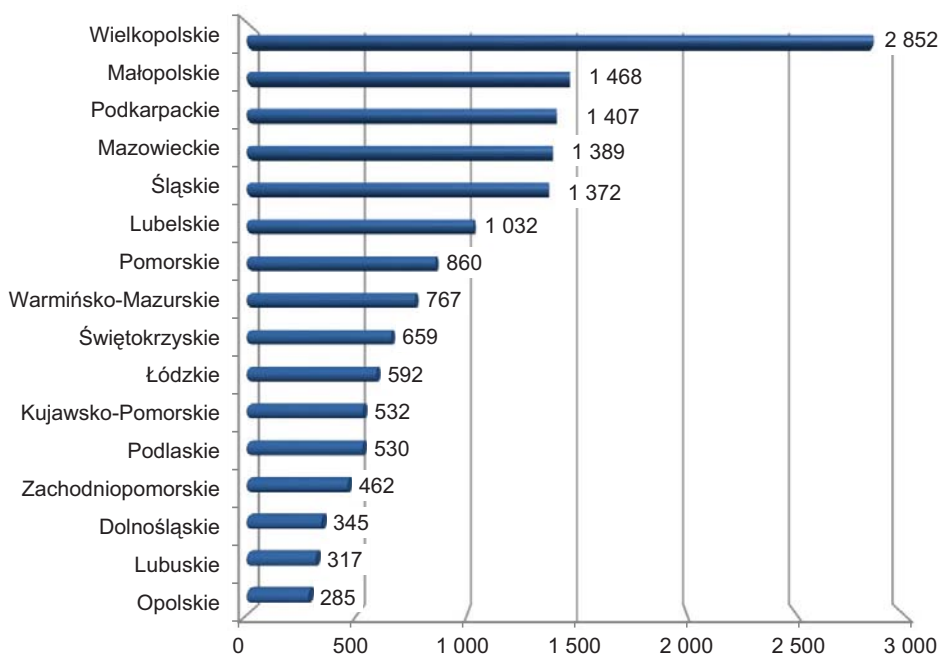
As regards the results in the form of jobs created the complete analysis can be made after the closing and settlement of the last grants. However, some positive data and signals from different voivodeships have reached the trade press and the media in the past year. For example, in Pomorskie Voivodeship, the estimated number of jobs created was about 350 (mainly in services for farms or forestry, services to the population, construction or installation works and services, services related to tourism, sports, recreation and leisure and transport

⁶¹ Report of the Agency for Restructuring and Modernisation of Agriculture for 2012, the Agency for Restructuring and Modernisation of Agriculture, Warsaw 2013, pp. 51-52.

services)⁶². Nevertheless, full effects associated with new jobs created in the framework of this measure will not be visible until 2014, because in 2013, there are plans to provide significant amounts for the creation of enterprises in rural areas (for 2007-2013 it was PLN 1.47 billion for businesses under this measure).

So far, under measure 312 “Creation and development of micro-enterprises” (according to data as of 31 December 2012), in the three calls there have been 31,252 requests made for assistance in the amount of PLN 6,052.6 million (including in the call of 2009 – 4,983 applications for the amount of PLN 803.2 million, in 2010 – 10,540 applications in the amount of PLN 2,019.8 million and in 2011 – 15,729 applications for the amount of PLN 3,229.6 million). Furthermore, 10,351 contracts were concluded for the amount of PLN 1,874.8 million, and the Agency for Restructuring and Modernisation of Agriculture (ARMA) paid PLN 760.2 million to 4,853 beneficiaries⁶³.

Figure 3.17. Number of jobs created with the help of funds under Measure 312 RDP



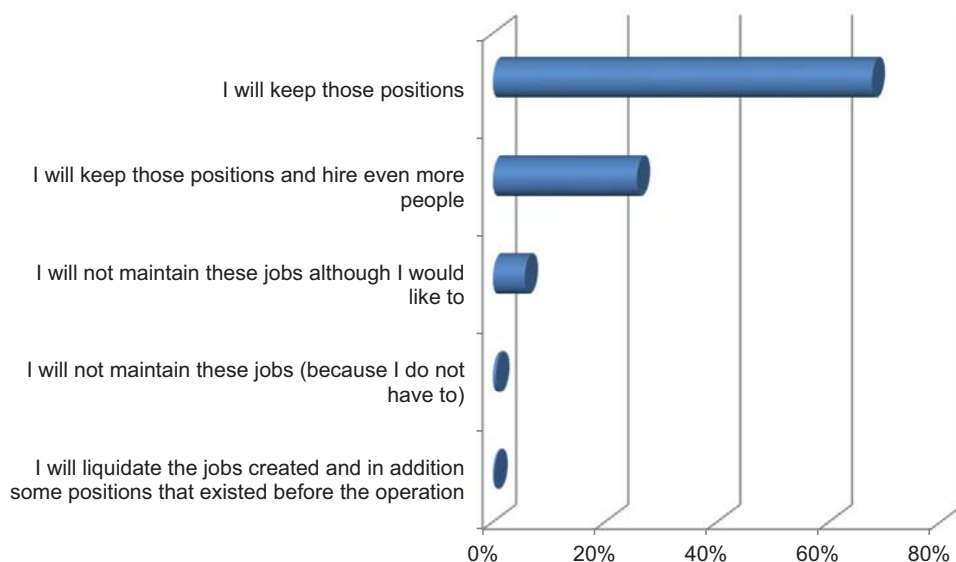
Source: ARMA monitoring data, based on signed contracts as of 5.06.2012.

⁶² S. Bujanowicz, *Wpływ wsparcia Programu Rozwoju Obszarów Wiejskich na rozwój wsi w województwie pomorskim*, Pomorski Oddział Regionalny Agencji Restrukturyzacji i Modernizacji Rolnictwa, www.wup.gdansk.pl/g2/.../3b3f7a1823c20ab679b20ee4046cc286.pdf.

⁶³ Report of the Agency for Restructuring..., op. cit., p. 53.

As in the previous measure (“Diversification into non-agricultural activities”), it is too early to sum up the total effect resulting from measure 312 “Creation and development of micro-enterprises”. Many voivodeships announce further calls for proposals this year, in which micro-entrepreneurs declare further job creation. For example, in the Mazowieckie Voivodeship, under Measure 312, Creation and development of micro-enterprises RDP 2007-2013, as of the beginning of 2012, there were an estimated 250 jobs created, while the contracts concluded already in 2012 provided for the creation of another 1,980 jobs⁶⁴. In the Łódzkie Voivodeship, the branch of the Agency for Restructuring and Modernisation of Agriculture gives the number of 3,450 jobs (supported entrepreneurs declared to create these many jobs by the end of 2012). ARMA branch in Gdynia reports that approximately 220 jobs have been created in 2012, while estimates for the next three years envisage 2.2 thousand jobs⁶⁵.

Figure 3.18. Evaluation of the possibility of maintaining jobs created under the RDP



Source: M. Łyciuk-Bzdyra, E. Wieteska, D. Czemerajda, I. Mazurek, T. Wiatrak, *Wyniki badania – mikroprzedsiębiorczość na wsi – efekty działania „Tworzenie i rozwój mikroprzedsiębiorstw”*, Agencja Restrukturyzacji i Modernizacji Rolnictwa, Warszawa 2012, p. 13.

⁶⁴ *Tysiące miejsc pracy w Polsce dzięki funduszom unijnym*, <http://biznes.onet.pl/tysiace-miejsc-pracy-w-polsce-dzieki-funduszom-uni,18490,5320139,news-detal> – 1 December 2012.

⁶⁵ *Rozwój na terenach wiejskich*, <http://www.farmer.pl> – 1 December 2012.

For example, in the call of 2010, the applicants planned to create around 20 thousand new jobs⁶⁶. In mid-2012, it was estimated that in connection with the implementation of measure 312, there have been about 15 thousand new jobs created in the whole country (data by voivodeships are shown in Figure 3.18). This gives more than 50% completion of outcome expected within the measure, relating to the creation of new jobs, and these data do not include the thousands of subsequent proposals, which were evaluated in 2012 and 2013.

Apart from the official statistics, the Agency for Restructuring and Modernisation of Agriculture, in the assessment of the effect of subsidizing businesses to create new jobs within the measure “Creation and development of micro-enterprises”, conducted a study on randomized research samples.

The examples include the study conducted by the Agency for Restructuring and Modernisation of Agriculture in 2012 by a research team of the Department of Strategy and Analysis at the Department of Programming and Reporting of ARMA. The research shows that about 68% of respondents declare they will keep the job after the period of the objective, and almost 26% believe that they will not only maintain these positions but also employ more people⁶⁷. This is very good news, because as far as it is important to create new jobs, it is even more important to create sustainable jobs.

3.4. Summary and conclusions

One of the dimensions of the assessment of instruments of regional and social policy, affecting the development of entrepreneurship in rural areas, is the assessment of their effectiveness. Effectiveness is expressed with the degree of attainment of the objective set before the relevant policy. The main objective of both policies, and thus of financial instruments offered in their framework by the European Union, is convergence. The definition of this term in the regulations of the European Commission is somewhat different than in the economic literature. In the first case it basically narrows to improving the situation in terms of economic growth and development. In the second case, improvement should be accompanied by the process of reducing the inequalities – in fact, both at the level of countries and regions – in the level of development and growth, or rate of change.

⁶⁶ K. Foryś, *Wnioski o pomoc na ponad 2 miliardy złotych*, [in:] PROWieści – Miesięcznik dotyczący Programu Rozwoju Obszarów Wiejskich na lata 2007-2013, Ministry of Agriculture and Rural Development, Warszawa 2010, p. 11.

⁶⁷ M. Łyciuk-Bzdyra, E. Wieteska, D. Czemerajda, I. Mazurek, T. Wiatrak, *Wyniki badania – mikroprzedsiębiorczość na wsi – efekty działania „Tworzenie i rozwój mikroprzedsiębiorstw”*, Agencja Restrukturyzacji i Modernizacji Rolnictwa, Warszawa 2012, p. 13.

Studies suggest that Poland reduces the distance to the more developed EU countries in terms of GDP. It therefore participates in the process of external convergence, which to a large extent is conditioned by the EU regional and structural policy. In practice, it is difficult to separate the impact of these policies from the influence of other factors, including the market. The literature shows, however, the presence of a statistically significant positive correlation between these policies and the convergence at EU level.

External convergence is not the effect of internal convergence, i.e. regional convergence. Conducted studies of the literature even confirm the presence of divergence processes, not convergence. These processes, however, occur in conditions of permanent economic growth and development. It can therefore be concluded that the objectives of regional and structural policy resulting from EU regulations are achieved. However, the course of processes of economic development confirms the hypothesis of Williamson, from which it follows that part of the voivodeships have not yet reached the critical level of economic development, from which the pace of development can greatly accelerate.

The actual economic development occurs at the local level. In order to analyze its course one frequently uses indicators constructed on the basis of own income. This approach was also used in this study to determine the effects of regional and structural policies in rural areas in local terms. Level of own income per inhabitant of working age was taken as a measure used in the assessment of these effects. The analyses of this measure generally confirm the effectiveness of financial instruments, with the assumption of the objective resulting from EU regulations. This is because the increase in own income for rural gminas occurred over the entire period. In addition, gminas with a higher level of absorption of EU funds reported a slightly faster growth of income.

The structural and regional policies focused on the use of financial instruments have no positive impact on reducing inequalities in local development. This conclusion follows from the analysis of basic statistics and Gini and Theil indices. It acknowledges the increase in diversity of gminas in terms of economic development, regardless of the instruments used. Studies have confirmed to some extent, somewhat different effects of individual instruments on the differentiation of the pace of development. The results provide evidence for a thesis that the funds transferred under programmes involving direct support for enterprises contribute to accelerating the widening of the gap in local development. Indirect instruments to support the development of entrepreneurship, which is also support for infrastructure investment, may however slow down a bit the diversification of the local development.

Lack of effect of regional and structural policy in the form of closing the gap in the level and pace of local development should not be attributed to the unreliability of the instruments used in the context of these policies. High impact on the process of deepening local differences is due to the initial state. This is because higher economic growth rate is achieved by gminas with higher income. Quite a large group of gminas has not yet reached that level of development to enable them visible acceleration of this development. This is a kind of confirmation of the Williamson's hypothesis at the local level. It seems justified, therefore, to state that the effective use of resources to address the differences in local development can take place only after the fulfilment of this criterion.

However, the above statement does not undermine the existing criteria for the distribution of support. Transferred funds may cause induction effect, i.e. inducing local enterprise development. As a consequence, a diffusion phenomenon may also occur – resulting in the development of entrepreneurship in the neighbouring units. Empirical confirmation of this phenomenon at this stage of implementation of the policies is not possible. Such effects may occur in later years. The very process of differentiation of the gminas as a result of the transfer of support may also be assessed positively. The research shows isolation of a group of high-income gminas that have a high level of absorption of EU funds and, as a consequence, the higher rate of income growth. This creates “development centres” in rural areas, which will be able to more efficiently use public support for the development of entrepreneurship. Higher demand for public funds in such units should contribute to it, as well as the associated competition resulting in making more effective projects. This solution is only another path for rural development – not necessarily the worse one.

The growing diversity of gminas in terms of the level and pace of development, determined on the basis of the analysis of basic statistics and Gini and Theil coefficients, does not mean the absence of the process of reaching the state of long-term equilibrium by gminas with lower levels of development. This way, the process of aligning the territorial units in terms of the pace of development and economic growth is accounted for in the statistical models of unconditional beta convergence. The analyses conducted with this method show in turn, that there is a process of local convergence among rural gminas, measured by own revenues of gminas per inhabitant of working age. The pace of this process is associated with the use of various types of financial instruments of regional and structural policies that directly or indirectly affect the development of entrepreneurship. Gminas, which used such instruments, especially on a larger scale, achieved faster convergence to a state of long-term equilibrium. They also should halve more quickly the distance separating them from that state.

The effectiveness of regional and structural policy instruments, oriented on growth of entrepreneurship in rural areas should be assessed positively in the context of the analysis. They lead not only to improvement in the quality of life of residents, improvement in the level of economic development of rural gminas, or local inducing of entrepreneurship, but also contribute to the convergence process at the local level. The instruments have in fact a significant impact on its pace. In other words, the main objective of the use of these instruments is achieved at the local level. It should be noted that convergence in rural gminas occurs independently of the adopted definition of that term, i.e. resulting from the regulation of the European Commission or literature. However, the convergence process should not be identified with the effectiveness of such measures, which was not analysed at this stage.

Public intervention associated with the subsidization of enterprises in rural areas should in fact be a “flywheel” aimed at creating sustainable jobs and additional jobs – created as a result of the impact of specific programmes, but which are no longer the result of direct subsidization. If the period of employment in most cases would be correlated with the required shelf life of the project, it is reasonable to infer that many of these places have been created “artificially” and the grant obtained was an end in itself rather than a means to achieve purpose. We do not know at present whether these statements will prove to be true, but even slightly worse results (studies show that 93.4% of supported enterprises maintain or even increase employment after the period of sustainability of the project) would be satisfactory. In addition, the data collected by ARMA shows that almost 60% of workers in these enterprises are people from other places than that in which companies operate, and nearly 90% of workers are employed on a permanent basis⁶⁸ (most new jobs were created in services for farms and for the population. There are hairdressers, garages, shops, land surveying services, pensions, and construction and installation services).

⁶⁸ *Tysiące miejsc pracy na wsi dzięki funduszom UE*, <http://www.polskieradio.pl/42/273/Artykul/645971>, *Tysiace-miejsc-pracy-na-wsi-dzieki-funduszom-UE* – article 16.07.2012.

4. Potential changes to the distribution of public funds in the field of pillar I of the Common Agricultural Policy after 2013

The new reform of the Common Agricultural Policy (CAP) was finally completed with arrangements between the EU institutions at the end of 2013. It retains the existing status quo, without leading to the need for a paradigm shift of public spending in favour of the philosophy of supporting public goods as discussed in recent years (“public money for public goods”). What is more, it does not follow the current change in direction of the EU’s agricultural policy initiated by Fischler’s reform in 2003, and “Health check” in 2008, preferring a gradual transfer of funds from the first to the second pillar of the CAP. However, it deepens the importance of direct payments granted to farmers depending on the size of the farm, with no focus on the achievement of specific objectives. It is hard to refer to the requirement of using 30% of the payments for “greening” as such an objective, since the requirements for farmers were limited to a maximum. Payments are still treated as a simple instrument to support agricultural incomes and their stability as a result of price fluctuations in agricultural markets.

The last reform increased the already significant flexibility in applying CAP instruments in each Member State of the European Union (EU). On the one hand, it allows us to adapt agricultural policy to special characteristics of agriculture in the country concerned. On the other hand, the CAP “à la carte” may create distortions of the Single Market, increasing variation in the level of support between farmers within and between countries and their competitiveness.

This chapter includes an analysis of potential distribution options for funds under CAP Pillar I after 2013 and their impact on agricultural incomes. This analysis is preceded by considerations on a new approach to the functioning of the subsidiarity principle as regards the Common Agricultural Policy.

4.1. The renaissance of the subsidiarity principle in the new Common Agricultural Policy

The economic crisis of recent years raised the debate on the extent and pace in which Member States should hand over their powers to the EU institutions and vice versa. In the EU terminology, the debate about the optimal degree of decentralization and centralization in decision-making is referred to as the debate about the principle of subsidiarity. It was started by the British Prime Minister David Cameron in his January speech in 2013, where he treated his return to the principle of subsidiarity as a key argument for the necessity to transfer powers from the EU to the Member States. Similar opinions were mentioned

by the representatives of the Netherlands promoting the motto: “European where necessary, national where possible”. The two countries announced a review in this area at EU national level considering that primary causes of lower competitiveness of the EU on the international arena include too large powers, which rather than improve will limit quick and rational response to the challenges facing Europe.

The principle of subsidiarity is the basis of joint decision-making in the EU and is mentioned in Article 5 of the Treaty of the European Union. It is to determine the appropriate level of intervention in the areas of shared competence between the EU and the Member States. This includes activities at European, national or regional level. In any case, the EU can intervene only if it is able to act more effectively than Member States⁶⁹.

The Treaty introduces a general division of competences into three categories: exclusive competence, shared competence and competences in terms of coordination, support and supplementing the activities of Member States. In this context Article 4 (2) (d) of the Treaty acknowledges the Union’s competence in the field of agriculture shared with the Member States, contrary to commonly accepted doctrine and opinions of the Commission’s legal services, which until now considered the market policy (the first pillar of the CAP) as an area of exclusive competence of the EU. The new Article 4 (2) (d) will have an impact on legislative activities in the field of agriculture where the European institutions apply the principle of subsidiarity, in areas which are not part of exclusive competence (Article 5 (3) and Article 12 of the Treaty). National parliaments may send a justified opinion concerning the compliance of a draft legislative act in the field of agriculture with the principle of subsidiarity to the Presidents of the European Parliament, the Council and the Commission. In addition to the CAP, an “enhanced cooperation system” is in place set up pursuant to Article 20 of the Treaty. It is based on the fact that the Member States (at least nine) can each make other additional commitments relating to agriculture, which is of particular importance now that the CAP is becoming more and more flexible in terms of implementing common instruments⁷⁰.

Discussion on the shape of the CAP after 2013 again raised the issue of division of competences between the EU institutions and the Member States. Should the Union take action in the area in which the Member States have a better understanding of the needs and its peculiarities? Which level of management

⁶⁹ *Zasada subsydiarności*, portal unijny, 2010, http://europa.eu/legislation_summaries/institutional_affairs/treaties/lisbon_treaty/ai0017_pl.htm (accessed: 12.10.2013).

⁷⁰ Wspólna Polityka Rolna a Traktat, Dokumenty informacyjne o Unii Europejskiej, November 2013.

– EU or national can provide added value and thus ensure more efficient execution of the task? What does CAP gain and lose in centralization or decentralization of decision-making?

The agricultural markets policy is shaped and funded since the inception of the CAP at EU level and the implementation delegated to Member States. This applies both to external policy (protection of the market through custom duties and import quotas or export support through export subsidies) as well as internal policy (intervention prices of agricultural products, supporting storage and consumption), supply control (amount of sugar and milk). The assignment of responsibility for market policy to EU authorities seems to be a logical consequence of the functioning of the single market. It allows the whole EU to win in terms of trade due to allocation of resources according to comparative advantages of each country and the positive economies of scale. Assigning these tasks to the Member States would not be beneficial in that it could lead to a diversification of intervention schemes on agricultural markets and could consequently interfere with equal conditions of competition through the use of different levels of support.

The vast complexity of the intervention policy of the EU has so far contributed to the increase in transactional cost of Member State administrations and the parties involved in the system. It would seem that delegating tasks to the level of the EU should reduce transaction costs. However, the requirement of creating a parallel administration in the Member States has led to the opposite effect. Previous attempts to simplify the operation of agricultural markets (e.g. one regulation for many agricultural markets) have so far not brought any positive results.

Essential benefits can be expected from introducing specified requirements at EU level for standards for production or agri-food products such as food safety. It is now hard to imagine the functioning of the Single Market in a situation of diversity of these standards in different Member States. There might be some doubts as to the introducing of uniform standards throughout the EU, for example, on the quality of the soil, which is closely linked to the local natural and geographical conditions, while fewer objections are raised in relation to standards for water quality of a cross-border character.

An interesting subject of research into the functioning of the decision-making process in the EU and its division of competences are direct payments. This is the second element, in addition to the support of agricultural markets, of pillar I of the CAP. Initially they were treated as compensation for a reduction in intervention prices of selected products in agricultural markets. That compensation created and financed at EU level stems from the fact that its predecessor,

price support system in agricultural markets, was itself at the discretion of Community bodies. Currently, with decoupling of payments from production, their economic importance has changed. Instead of support for agricultural production, we deal with support for sectoral and/or individual income. According to the European Commission, today's payments compensate for the provision of public goods through the implementation of the principle of cross-compliance or "greening". This reasoning may raise some doubts, since the level of payment is not related to the size of the supplied goods, but is determined historically. Therefore, the pool of payments received by farmers is very varied, even if they provide the same public goods.

Interestingly, the type of support with which we are dealing, is applied in the EU in the case of direct payments, but usually lies within the competences of the Member States, for example, support of coal mining and social insurance system. Decoupled payments, in theory, do not have the effect of distorting equal conditions of competition (transferred from the blue to the green box) and therefore do not require control at EU level. They seem to be, therefore, a historical relic, incompatible with the principle of subsidiarity. According to some experts⁷¹ the EU's role should be limited to implementation of the policy on agricultural markets and environmental policy, i.e. in these areas that produce cross-border external effects.

Taking the above considerations into account, we may wonder what benefits may come from the decision-making process at EU level, where consideration is given to the size and structure of the direct payments, financed from the EU budget, for example, for northern regions of Sweden and Austrian Alps. Clarification should be sought not only in historical events. One of the basic causes are the interests of net contributors and beneficiaries of the EU budget. Direct payments are treated as a simple mechanism for redistribution of funds from the EU budget to Member States used by EU net contributors in accordance with the principle of return (*juste retour*), in order to maintain the proper balance of their contributions to and payments from the EU budget. While the contributions of Member States to the EU budget are determined on the basis of objective criteria (gross national income), distribution of these funds is carried out based on political agreement. As a consequence, each state seeks to shape the policies and other EU actions to recover as much as possible the financial resources invested in the budget ("I am paying, but I want to have the same in return"). Common agricultural policy and cohesion policy serve this purpose

⁷¹ H. Grethe, *Agriculture Policy: What Roles for the EU and the Member States?* [in:] *Subsidiarity and Economic Reform in Europe*, Editors: G. Gelauff, I. Grilo, A. Lejour, Springer 2008.

and have been regarded for many years as a redistributive policy framework. Reforms of these policies attempted to date have not led to an increase in the efficiency of EU expenditure, but rather serve to legitimize their dominant share in the EU budget.

Diverse interests of Member States affect the dual approach to the principle of subsidiarity. On the one hand, the Member States expect the greatest freedom in the sphere CAP instruments applied, so that they can increase the competitiveness of its farmers depending on the specific features of the domestic agricultural sector. In this context, they support an increase in the powers of the Member States in terms of the functioning of CAP. On the other hand, they prefer taking decisions at EU level given that the CAP applied should be financed from the EU budget. One could wonder whether such an approach to the principle of subsidiarity does not twist its meaning and intent as formulated in the Treaty of the EU. Only a few years ago, it was in the increase in the Member States' powers that a threat was seen to the CAP and the possibility of renationalising its pillar I. Paradoxically, the economic crisis of recent years has changed this attitude and became an opportunity to treat the EU budget as a rescue raft for ever growing public finance deficit budgets. As a consequence, increasing the powers of the Member States does not entail financial liability and spending own funds. This changes the understanding of the foundation of EU functioning, which has so far been the principle of subsidiarity. Euro spent at EU level does not bring any more benefits (in the sense of the EU as a whole) than nationally. An analysis of the causes of this phenomenon based on public choice theory could be an interesting subject. However, it is not within the scope of this work's topic.

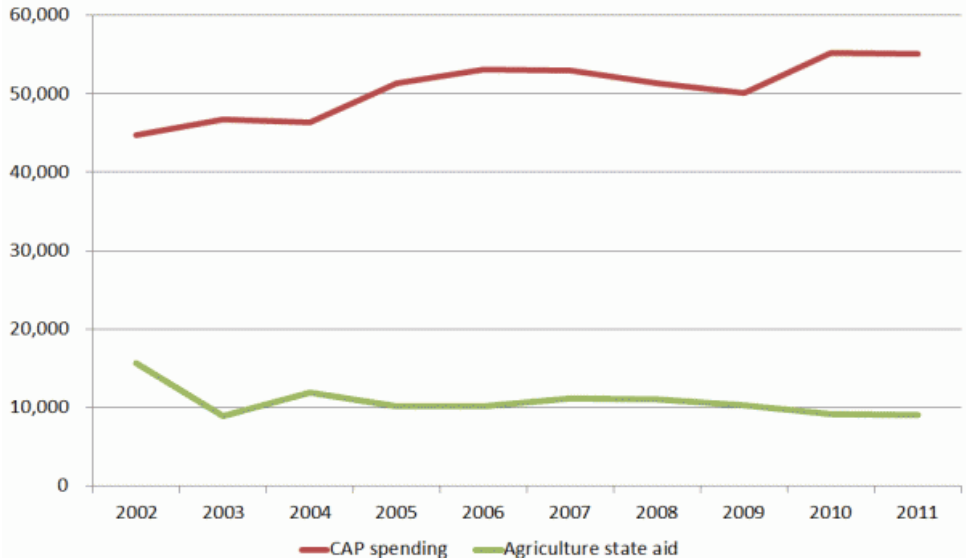
The above considerations confirm the results of the analysis conducted by Matthews⁷², which indicate that the greater the resources allocated in support of agriculture in different countries coming from the EU budget, the smaller the pool used from the national budget (Figure 4.1). This author found that the amount of national aid declined during the economic crisis, while the CAP expenditure was rising.

It is worth mentioning that agricultural expenditure from national budgets concerns co-financing the CAP Pillar II, specific forms of support under CAP pillar I and national aid. The expenditure of the EU budget is determined during the negotiations between the EU institutions and Member States and is spread out over seven years in the next financial perspective. In turn, national expenditure is determined in a one-year long procedure, and therefore may be more sensitive

⁷² A. Matthews, *Implications of the new redistributive payment*, blog posts, 04 March 2013, <http://capreform.eu/implications-of-the-new-redistributive-payment/> (accessed: 02.10.2013).

to the current economic situation of the country concerned. Each Member State is assigned with a specified envelope from the EU budget which may, but need not be used up. The trends are reversed. There were already in fact cases of loosening co-financing requirements under pillar II of the CAP. Such was the case in 2011, when the Council and Parliament adopted the Commission’s proposal for increasing CAP II Pillar co-financing of the EU budget by 10% to relieve the national budgets of Lithuania, Ireland, Greece, Portugal and Romania in the economic crisis.

Figure 4.1. Agricultural expenditure from the EU budget and the budgets of the Member States in 2002-2011 (billion EUR)



Source: DG AGRI data in: A. Matthews, *Does national spending on agriculture follow a different path to the CAP?*, Blog posts, <http://capreform.eu/does-national-spending-on-agriculture-follow-a-different-path-to-the-cap/>.

Since the CAP is funded from the EU budget, each Member State will seek to introduce such instruments within the framework of this policy that create opportunities for the use of EU funds by their farmers. This is due to the fact that they incur only a fraction of the cost of financing these instruments as part of their participation in contributions to the EU budget. Taking this into account, it can be assumed that the coordination of agricultural policy at EU level leads to greater agricultural expenditure than if only national agricultural policies existed. This problem is explained in the EU nomenclature by the restaurant table effect,

when each person orders more expensive dishes knowing a joint bill will be issued. In this context, we wonder what level of expenditure on agriculture would have occurred in each Member State, if CAP disappeared.

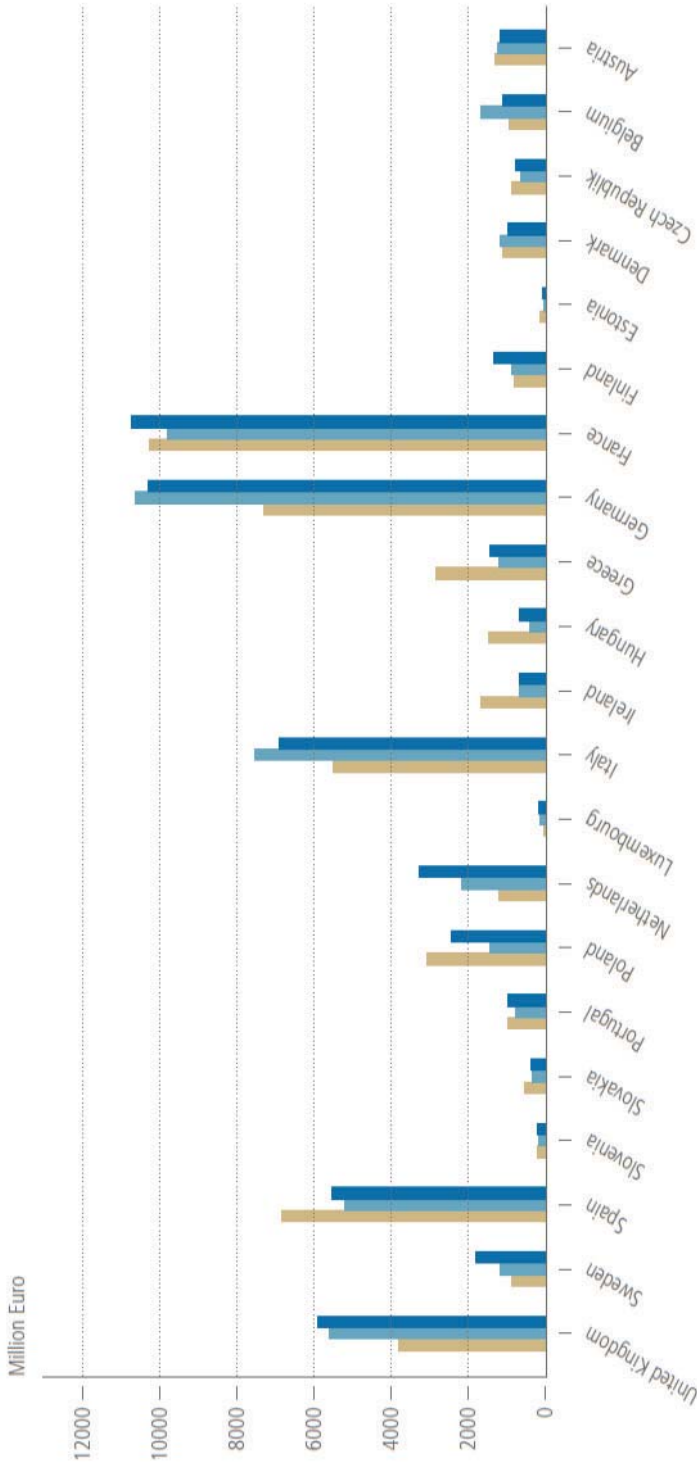
Simulations carried out by the Bertelsmann Foundation⁷³ indicate that Member States would spend around 23 billion EUR more in 2010 on their agricultural sectors than CAP from the EU budget. Therefore the presence of the EU's agricultural policy protects against the recent escalation of the differences in levels of support for agriculture between countries and thereby reduces the political and economic distortions of the conditions of competition.

Agricultural expenditure would however be quite varied between countries. According to this analysis, Germany would spend about 300 million EUR less on its own agricultural policy in relation to their participation in the EU's expenditure on CAP in 2009. The United Kingdom and Italy would be in a similar situation which could increase the level of support for their farmers with their own agricultural policy without spending on agriculture as in other Member States. In turn, the expenditure in France could even amount to 1 billion EUR more than its share in financing CAP in 2009. Approximately 500 million EUR is equivalent to the sum which France receives as a beneficiary of the CAP. The remaining 500 million EUR would be the effect of increasing the pool of funds from the national budget to support French farmers. Spain, Greece, Hungary would spend a sum that is similar to that received from CAP in 2009 on its agricultural policy. In this context, Poland seems quite unique in that it could spend on national agricultural policy more than its share in CAP financing in 2009. As the cause the authors state a significant impact of the agricultural lobby in Poland on government decisions.

Currently, talks are underway in each Member State on what and how to take advantage of the instruments of the common agricultural policy for the next financial perspective 2014-2020. The next chapter presents potential effects of changes in the distribution of direct payments to the economic situation of agricultural holdings in Poland in the years to come. What solutions within the framework of the Polish CAP will be ultimately selected and for whom they will be most favourable is another interesting research problem.

⁷³ *The European Added Value of EU Spending: Can the EU help its Member States to save money?*, Exploratory study, Bertelsmann Stiftung, 2013.

Figure 4.2. The actual expenditure of selected Member States in the common agricultural policy and estimations of agricultural expenditure on national policies in 2009



Brown colour – envelope of funds received from the EU budget within the framework of the CAP;

The light blue colour – share in CAP expenditure;

Dark blue colour – simulated agricultural expenditure on national policy.

Source: *The European Added Value of EU Spending: Can the EU help its Member States to save money?*, Exploratory study, Bertelsmann Stiftung, 2013.

4.2. Analysis of distribution options for direct payments in Poland after 2013

At this stage, it is difficult to know which instruments from the CAP “menu” will prove most useful for agriculture and ensure its competitiveness in the European and international arena. We need to note, however, that the choice of a particular option in CAP Pillar I will diminish the pool of funds earmarked for other farmers under basic payments. The choice of one option is made at the expense of the others. The financial pool of direct payments established in the framework of the negotiations for Poland will not change. That is why analyses and evaluations of the various possible options for a new CAP are important. New solutions should take account of the short-, medium- and long-term interests of the entire Polish economy.

In this chapter, an analysis was made on the potential effects of changes in the distribution of direct payments to the economic situation of agricultural holdings in Poland in the next financial perspectives 2014-2020. The analysis was prepared based on the Polish FADN data from a representative sample of commercial farms for 2004-2011. The Polish FADN database contains accountancy data from over 12 thousand farms representing in 2004-2009 from 745 to 753 thousand commercial farms in the country with the economic size of more than 2 ESU, and as of 2010 ca. 738 thousand farms of more than EUR 4 thousand of Standard Output. The study considers the most numerous group of farms in the structure of the Polish farms, focusing on field crops, dairy cow, pig and mixed production farms. The aforementioned four types of agricultural holdings represent 88% of the total number of commercial farms (from the Polish FADN area of observation), which use 92% of agricultural areas in that group of farms, they employ 86% of full-time workers and produce 89% of production value. It should be, however, emphasised that the results are influenced by mixed farms which constitute over 60% of the total number of commercial farms in question. The results were presented according to production orientation of holdings (type of farming) and their economic size. Differentiation between holdings is shown in the form of net income from the farm.

Establishment of a methodical analysis of the CAP options

The analysis took into consideration determinations on the size and distribution principles of direct payments for Member States, adopted in the negotiations on the next financial perspectives 2014-2020⁷⁴. In the case of Poland, an

⁷⁴ CAP Reform – an explanation of the main elements, MEMO/13/621, 26/06/2013, European Commission, Brussels 2013; Reform of the Common Agricultural Policy (CAP): Political

envelope of 18,739 million EUR was included for the pillar I of the CAP and 9,742 million EUR for pillar II of the CAP (in constant prices for 2011). The basis for the analysis is the dynamics of net income from the farm in two years, i.e. 2015 (2,987 million EUR allocated for direct payments to Poland) and 2020 (3,062 million EUR of direct payments). Although it is the first year of the next financial perspective, the year 2014 was not included because of the transitional regulations in respect of direct payments existing at that time.

The study adopted the following options for distribution of direct payments under the CAP pillar I in Poland:

- **basic option 0**

- a) national reserve for a Member State – 3% of CAP pillar I envelope,
- b) mandatory “greening” – 30% of CAP pillar I envelope,
- c) mandatory programme to support young farmers – 2% of the envelope,
- d) basic payment – 65% of the envelope;

In subparagraph c) it was assumed that in the programme “Easier start for young farmers” a total of 836.1 million PLN was spent in Poland in 2011⁷⁵;

- **extended option 1 – transfer of 25% of funds from CAP pillar I to II**

(pillar I in 2015 – 3,379 million EUR; in 2020 – 3,453 million EUR)

- a) compulsory national reserve – 3% of CAP pillar I envelope,
- b) mandatory “greening” – 30% of CAP pillar I envelope,
- c) mandatory programme to support young farmers – 2% of the envelope,
- d) basic payment – 65% of the envelope;

- **extended option 2 – supporting EU funds from the national budget**

- a) compulsory national reserve – 3% of CAP pillar I envelope,
- b) mandatory “greening” – 30% of CAP pillar I envelope,
- c) mandatory programme to support young farmers – 2% of the envelope,
- d) basic payment – 65% of the envelope.

In accordance with budget arrangements for the new financial perspective, Member States may use the national funds at the rate of 75% of this envelope for 2015, and by 5% lower in each subsequent year. The analysis assumes that

agreement reached on last remaining points, IP/13/864, 24/09/2013, European Commission Brussels 2013; Proposal for a Regulation of the European Parliament and of the Council establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy (CAP Reform) – Consolidated draft Regulation, 13294/1/13, Brussels, 25 September 2013.

⁷⁵ Sprawozdanie z realizacji Programu Rozwoju Obszarów Wiejskich na lata 2007-2013, Sprawozdanie za 2011 rok, Nr 5/2011, Ministerstwo Rolnictwa i Rozwoju Wsi, Warszawa.

the level of support in 2013 for area payments in Poland amounted to 11,874.2 million PLN⁷⁶ and will be similar in 2015.

Under options 1 and 2 an analysis was conducted of the following scenarios for distribution of direct payments:

- **scenario 1 – a programme to support small farmers, voluntary for Member States (10% of the direct payment envelope).**

In the calculation of payments for small farms, the share of holdings up to 4 ESU was included in specific types of farming and economic size classes. Data was used from the RDP report for 2011, according to which the programme “Supporting of semi-subsistence farms” spent a total of 212,7 million PLN in that year on obligations for the period 2004-2006. This programme planned 376.3 million EUR in the 2004-2006. The years following 2006 were obligations from previous years⁷⁷;

- **scenario 2 – use of payments in connection with production; voluntary for Member States (15% of direct payment envelopes).**

In determining the pool of aid for holdings of the various types of farming and economic size classes, the level of subsidies from pillar I in 2011 was used and this was directed to national payments pool. Assuming that 2014-2020 will preserve the proportions of payments from 2011 subsidies pools were calculated for farms in the following years of the new financial perspective. These pools were the basis for calculation of each option and scenario between 2015 and 2020.

In determining the level of support for selected groups of farms or surfaces, the size of those holdings or share of surfaces was used in types and size classes observed by the Polish FADN;

- **scenario 3 – applying redistributive payments to the first hectares; voluntary for Member States (30% of direct payment envelopes).**

The scenario includes the surface share of 30 hectares in total area of holdings of the various types of farming and economic size classes.

The calculations of the above mentioned analysis used the level of operational payments (without pillar II payments) for 2011. Small amounts of aid and natural disaster compensations were missed. Due to the large diversification in individual years and virtually permanent increase of depreciation and the cost of external factors, different ways of estimating production and costs were used after 2014. Ultimately for most types and classes of holdings linear regression models

⁷⁶ Ustawa budżetowa na rok 2013 z 25 stycznia 2013 r.; Opinia o ustawie budżetowej na 2013 r. w częściach dotyczących rolnictwa, Opinie Ekspertyzy, OE-199, Kancelaria Senatu, styczeń 2013.

⁷⁷ Sprawozdanie z realizacji Programu Rozwoju Obszarów Wiejskich na lata 2007-2013, op. cit.; *Przewodnik. Wspieranie gospodarstw niskotowarowych*, Ministerstwo Rolnictwa i Rozwoju Wsi, Warszawa 2005.

were applied, which apart from business fluctuations reflect the evolution of production and costs from 2004 to 2011 reasonably well. For farms with animals that feed on grass, curved regression was used in some cost calculations.

Varying economic situation of farms depending on production orientation

The results of analysis on this issue are presented in Table 4.1. It gives net income from farm depending on the type of farming between 2015 and 2020, broken down by analyzed options and scenarios for changes in the distribution of direct payments.

There is a clear decline in agricultural income between 2015 and 2020 in respect to holdings in general. This includes all analysed options and scenarios of changes in the system of direct payments. Decline in income in the year 2020 compared to 2015 is due to the current trends described using regression models. The pace of increase in value of production was clearly lower than the rate of increase in the cost of production. Slightly increasing direct payments and changes in size of holdings have not changed this trend. Different results are presented by European Commission forecasts. It feels that the new Member States expect income growth until 2022⁷⁸. The diversity of the results of this work and of the Commission may be due to the methodological assumptions adopted in the analysis.

It was found that despite the drop in total agricultural income in the coming years, the economic situation of the holdings can be varied depending on type of farming. According to simulations, the highest income in the years analyzed will be achieved by poultry farms. Income growth can also be expected in farms specialising in field and permanent crops as well as farms raising dairy cows. A decrease in income can be expected in the case of holdings with horticultural crops, with remaining herbivorous animals, pigs and mixed farms with different orientations of agricultural production. These results are consistent with the trend of changes observed in 2004-2011. They can also show the adverse effects of potential changes in the system of direct payments after 2013 on the economic situation of the farmers. Especially those that will keep the status quo and fail to take measures to increase farm area, change production orientation in the case of multi-directional holdings and increase production scale in specialist farms⁷⁹.

⁷⁸ *Prospects for Agricultural Markets and Income in the EU 2012-2022*, European Commission, December 2012.

⁷⁹ R. Grochowska, S. Mańko, R. Płonka, J. Seremak-Bulge, *Wpływ zmiany systemu płatności bezpośrednich na rynki produktów rolnych*. An expert report for the Ministry of Agriculture and Rural Development, IERiGŻ-PIB, Warszawa 2011.

Table 4.1. Net income from farm depending on the type of farming between 2015 and 2020 broken down by analyzed options and scenarios for changes in the system of direct payments (PLN/farm)

Year	2015									2020								
	0			1			2			0			1			2		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
Type of farming																		
Field crops	57,375	65,440	81,899	63,680	75,727	81,899	63,680	68,618	73,556	66,921	77,292	90,519	98,456	71,384	77,733	84,082		
Horticultural crops	34,024	34,918	36,742	34,654	36,058	36,742	34,654	35,201	35,749	21,408	22,708	24,365	25,360	21,860	22,656	23,452		
Permanent crops	37,692	39,084	40,859	38,044	40,859	41,924	38,044	38,896	39,748	44,384	46,004	48,071	49,312	44,645	45,637	46,629		
Dairy cows	33,441	36,374	40,114	37,036	40,114	42,358	37,036	38,832	40,627	35,444	38,988	43,508	46,221	37,951	40,121	42,291		
Other herbivorous animals	7,357	9,981	13,328	10,582	13,328	15,336	10,582	12,189	13,795	6,039	8,868	12,477	14,642	8,277	10,009	11,741		
Poultry	160,522	163,318	166,885	163,268	166,885	169,025	163,268	164,980	166,692	246,566	259,721	276,501	286,569	248,789	256,843	264,898		
Pigs	27,752	30,323	33,601	31,243	33,601	35,569	31,243	32,817	34,391	21,840	24,099	26,980	28,709	24,244	25,627	27,010		
Mixed	12,788	15,052	17,939	15,469	17,939	19,671	15,469	16,855	18,241	9,855	12,200	15,192	16,987	11,714	13,150	14,586		
Total	21,278	24,115	27,734	24,311	27,734	29,905	24,311	26,048	27,785	18,574	21,794	25,901	28,366	20,688	22,660	24,631		

Source: own calculations.

An analysis of the different options and scenarios for changes in the distribution of direct payments after 2013 shows that any potential increase in increasing direct payments pool for Polish agriculture, either by shifting a part of the resources from CAP pillar II to I (option 1) or by support from the national budget (option 2), can positively affect the income of the average farm. At the same time, it is worth pointing out that agricultural income obtained in the case of option 1 is always higher when compared to option 2. These trends exist both in the year 2015 and 2020.

According to the data of the European Parliament⁸⁰, Poland was granted in the next financial perspectives 2014-2020 an envelope of national direct payments which was smaller by 1% (18,739.0 million EUR at constant prices for 2011), compared to the previous perspective for the period 2007-2013 (18,932.0 million EUR). This pool will increase only slightly until 2019 as a result of the findings regarding the redistribution of direct payments between Member States (so-called external convergence). Thus any opportunity to increase the direct payments envelope for Polish farmers seems to be favourable. Studies indicate a greater influence of transferring funds from pillar II to I of the CAP on the level of income than that of domestic support. It is very obvious that Poland, as a country which is less wealthy compared to e.g. France or Germany, is not able to allocate funds from the national budget that would be large enough to support its agricultural sector. However, we need to keep in mind that under CAP pillar II Poland was granted 29% less in the new financial perspective than in the previous one (9,724.2 and 13,691.3 million EUR respectively at constant prices for 2011). Therefore, the decision of applying for option 1 or 2 will largely depend on the priorities and objectives for the Polish economy in the years to come.

We see very clear trends both in 2015 and 2020 by analyzing different scenarios for distribution of payments under each option. Studies suggest that the best impact on income of the average agricultural holding can be achieved by using up to 30% of the Polish CAP pillar I payment envelope as redistributive payment and then up to 15% of the envelope for coupled payments. The lowest ratings recorded are for the option of using up to 10% of the envelope to support small farms.

The redistributive payment, also known as payment for first hectare, is a new CAP instrument proposed by France in the last phase of the negotiations on the new shape of the EU's agricultural policy after 2013. It was proposed mainly in order to avoid a significant redistribution of direct payments from relatively low-income farms living off livestock to highly profitable cereal farms

⁸⁰ European Council Conclusions on the Multiannual Financial Framework 2014-2020 and the CAP, Note, European Parliament, July 2013.

during the transition of France to the regional model. According to Matthews⁸¹ the redistributive payment may play an important role in the redistribution of direct payments between farmers (under the so-called internal convergence) in the countries, where it will be introduced. It can be greater than modulation or the upper limit on payments per holding (capping). According to estimates of this author, it can lead to an increase in payments in holdings up to 30 ha by 15.7-21.2%, in holdings of 30 to 50 ha by 7.6% and in the holdings of 50 to 100 ha to a drop in payments by 10.6%, and on farms of more than 100 ha by up to 18.4%.

Therefore, the introduction of redistributive payments causes significant resistance among some farmers. According to the Irish agricultural unions greatest loss will be for the most efficient agricultural producers, whose income may fall by about 20%⁸². In France the redistributive payment will be granted to the first 52 hectares. According to crop producers, introducing this instrument will undoubtedly help French cattle producers, but at the same time it will reduce their competitiveness compared to German crop producers (they will receive 220 EUR/ha in 2019, while Germany – 295 EUR/ha). In turn, Hungarian estimates indicate that the payment for the first 30 hectares will not have any significant effect on the redistribution of payments either in the case of producers of cereals and those raising animals⁸³. It can therefore be concluded that introducing redistributive payments may bring variation in different countries, depending on the special nature of their agricultural sectors.

In our conditions redistributive payment amount would correspond to the product of the number specified by Poland, which may not be higher than 65% of the national average payment per hectare and the number of eligible agricultural lands declared in respect of the single area payment scheme (in the case of Poland no more than 30 hectares).

This analysis in this paper shows that between 2015 and 2020 introducing this form of support will contribute to growth in income mainly on farms with herbivorous animals other than dairy cows, regardless of the option or scenario. Mixed farms would come in the second place. The largest drop in income can be expected in poultry farms, then in horticultural farms with those with permanent crops (Figure 4.3). There is a clear significant redistribution impact of the CAP

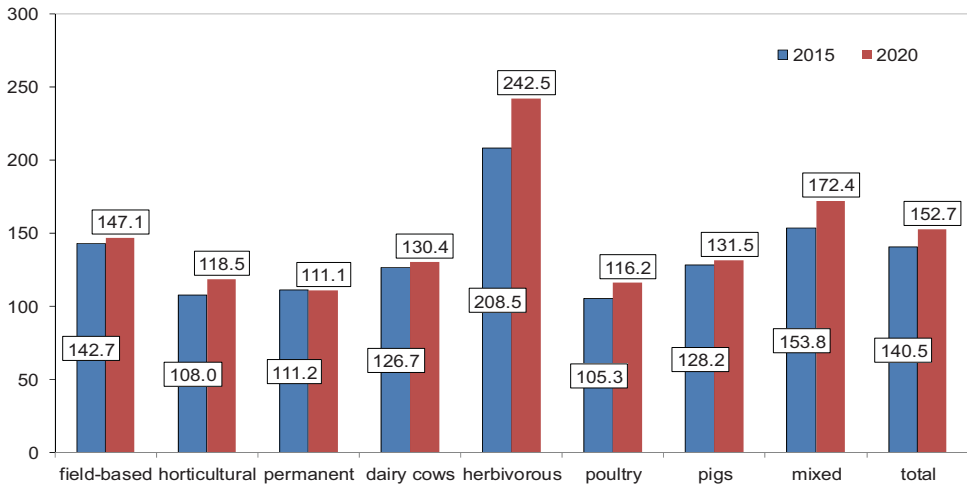
⁸¹ A. Matthews, *Implications of the new redistributive...*, op. cit. (accessed: 02.10.2013).

⁸² S. Cadoghan, *Redistributive payment likely part of CAP deal*, Irish Examiner, 07 March 2013, <http://www.irishexaminer.com/archives/2013/0307/features/redistributive-payment-likely-part-of-cap-deal-224759.html> (accessed 02.10.2013).

⁸³ N. Potori, M. Kovacs, V. Vasary, *The Common Agricultural Policy 2014-2020: an impact assessment of the system of direct payments in Hungary*, Studies in Agricultural Economics 2013, no 115, pp. 118-123.

instrument on agricultural income. However, it should be noted that the results obtained stem from methodological assumptions, i.e. share of surface up to 30 ha in different types and size classes of holdings.

Figure 4.3. Dynamics of net farm income depending on the type of farming when using CAP redistributive payments after 2013 (option 0 compared to option 1 scenario 3)

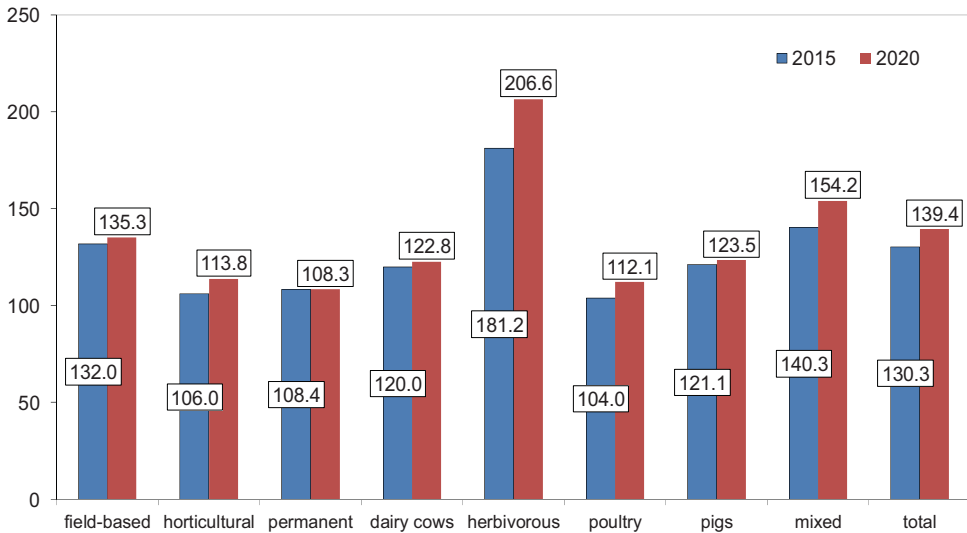


Source: own calculations.

When allocating 15% CAP pillar I payment pool to coupled payments, we can observe the most favourable economic situation on farms with herbivorous animals other than cows and then on multidirectional farms and field-based farms (Figure 4.4). However, this situation is definitely better when the support comes from the EU (option 1) rather than when the support is domestic (option 2). The worst ratings in this ranking are noted for permanent crop farms, horticultural farms and poultry farms.

The results obtained can be explained by the fact that farms with herbivorous animals and mixed farms achieve the lowest amount of income per farm, hence a greater impact on their financial situation is observed. However, plant farms achieve high income due to the large surface, which has increased the most in this group in recent years. Poultry farms generate high incomes because of their production scale. However they receive low support from CAP. Farms focused on permanent crops are relatively small, hence they proportionately get lower area payments.

Figure 4.4. Dynamics of net farm income, depending on the type of farming when couple payments are used in CAP after 2013 (option 0 compared to option 1, scenario 2)



Source: own calculations.

The importance of coupled payments can be seen from the solutions adopted for the new CAP rises significantly after 2013, contrary to the current evolution of the EU policy. It is noted, however, that these payments can be granted only in exceptional circumstances, i.e. in order to maintain the current level of production in sectors which are facing difficulties and are especially valuable for the country for economic, social or environmental reasons⁸⁴. A study carried out by Grochowska et al.⁸⁵ has demonstrated the need for diversification of support for the agricultural sector in Poland after 2013. The significant differences in the value and cost of production of the different types of production in farms pointed to the desirability of continuing additional support beyond 2013 in the case of hops, tobacco and rearing of sheep and cattle for fattening. It was found that the move away from production support to these types of farming will result in a reduction in the level of income, which will help to further reduce the production of hops, tobacco and sheep production. We can also expect that

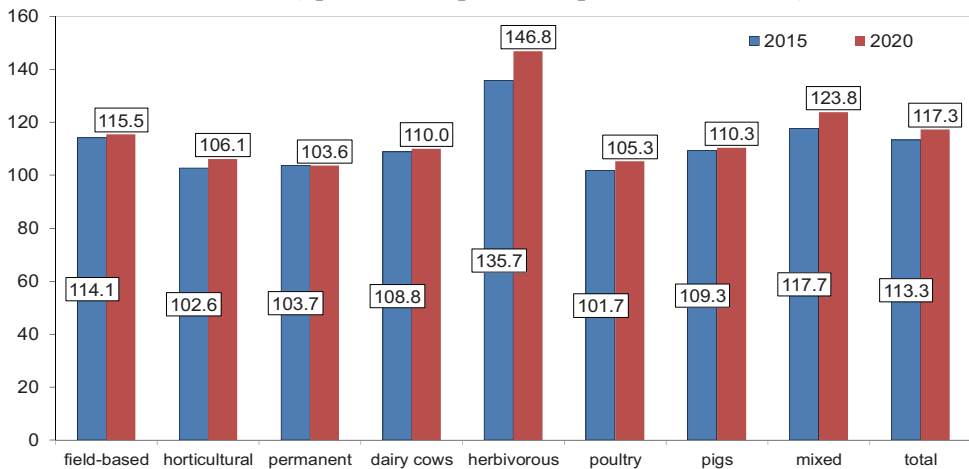
⁸⁴ Proposal for a Regulation..., op. cit.

⁸⁵ R. Grochowska, S. Mańko, J. Seremak-Bulge, *Ekspertyza dotycząca potrzeby zróżnicowania wsparcia bezpośredniego dla poszczególnych sektorów polskiego rolnictwa po 2013 r. poprzez płatności związane z produkcją*, An expert report for the Ministry of Agriculture and Rural Development, IERiGŻ-PIB, Warszawa 2012.

high-quality beef production, whose “reconstruction” has started only recently, will slow down.

When choosing option 1, i.e. payments connected with production, it is worth noting, however, that the use of this CAP instrument is not compatible with the EU obligations in the World Trade Organisation (WTO). The Union has taken in the last 10 years many actions to separate payments from production (decoupling). The European Commission declares that 90% of payments can be treated in this way and places them in the green box that is in the pool of instruments that do not interfere with international trade and do not disrupt production. The EU’s green box raises many concerns in the international arena and may be re-defined in the future. There is even greater resistance to the EU returning to coupled payments⁸⁶. In the EU, whether or not to apply coupled payments is quite often disputed. The argument raised is the risk of leaving land by farmers in certain regions of the EU. The British experience suggests, however, that the introduction of decoupling together with 2003 reform in peat regions in England resulted in abandoning agricultural activity in these areas only to a small extent⁸⁷.

Figure 4.5. Dynamics of net income from farms, depending on the type of farming in case of application of the programme to small farms in CAP after 2013 (option 0 compared to option 1, scenario 1)



Source: own calculations.

⁸⁶ New direct payments scheme: targeting and redistribution in the future CAP, Note, European Parliament, February 2012.

⁸⁷ Uptake of the Single Payment Scheme by Farmers, Defra Agricultural Change and Environment, Observatory Research Report No. 19, DEFRA, London 2010.

Using 10% of CAP Pillar I funds on a programme to support small farms will not significantly increase agricultural income between 2015 and 2020. With the exception of the holdings with grass feeding animals other than dairy cows and mixed farms, where there is noticeable increase in the level of income in the two years investigated, agricultural income differences are small in the other types of farming. This result applies to both the support from the EU and national funds (Figure 4.5). A more accurate analysis of the relationship between the economic size, farm size and agricultural income in the context of the new CAP instruments is presented in the later parts of this work.

Diversity of the economic situation of holdings according to their economic size

The results of the analysis on this issue are presented in Table 4.2, which provides net income from agricultural holdings according to their economic size between 2015 and 2020, broken down by analyzed options and scenarios for changes in the system of direct payments.

As for types of farming, we observe a clear decline in income in an average agricultural holding in Poland between 2015 and 2020, regardless of the option or scenario. The economic situation of the holdings in the years analyzed may, however, turn out to be quite varied.

Agricultural income in farms which are very small in terms of economic size is characterized by a strong declining trend. However, small holdings can expect income growth using the EU funds (options 0 and 1). Loss of income, on the other hand, is visible thanks to the support from the national budget (option 2). Other holdings, i.e. in such categories as: medium-small, medium-large, large and very large are characterized by increased income under each option and scenario. As can be seen from the analysis of holdings continuously performing their accounting, farms according to size classes are very different in pace of changes in the size of the area and economic size. In very small and small farms some reduction in area size is observed, and when they increase the area they move on to higher classes (class divisions in this group are relatively small). Large and very large holdings observe the greatest change in area size and therefore in the scale of production.

Table 4.2. Net income from farm depending on its economic size between 2015 and 2020 broken down by analyzed options and scenarios for changes in the system of direct payments (PLN/farm)

Year	2015									2020								
	0	1			2			0	1			2						
		1	2	3	1	2	3		1	2	3	1	2	3				
Farms	6,409	7,649	9,068	10,017	8,080	8,839	9,598	5,075	6,341	7,790	8,759	6,231	7,006	7,781				
Very small	20,213	22,398	24,102	25,654	23,123	24,461	25,703	20,920	23,151	24,890	26,474	22,934	24,300	25,567				
Small	59,355	63,542	66,752	68,341	65,005	67,569	68,841	64,771	69,046	72,323	73,945	68,680	71,298	72,596				
Medium-small	115,544	122,514	127,851	127,595	124,760	129,028	128,823	124,867	131,983	137,431	137,170	131,244	135,601	135,392				
Medium-large	252,317	263,197	271,523	266,228	266,615	273,276	269,040	270,726	281,834	290,335	284,928	280,621	287,422	283,097				
Large	557,243	562,599	566,697	562,910	562,518	565,797	562,768	564,903	570,371	574,555	570,689	568,568	571,915	568,822				
Very large	21,278	24,115	26,751	27,711	24,311	26,048	26,816	18,574	21,794	24,786	25,875	20,688	22,660	23,531				
Total																		

Source: own calculations.

The basic problem, but also the advantage of Polish agriculture is the large number of farms and the fragmented size structure of the farms. According to the agricultural census of 2010⁸⁸, Poland had 1,480 thousand farms engaged in agricultural activity with more than 1 ha of agricultural land, with the average farm area of 10.1 hectares. Dominant in terms of number are holdings of 1-5 ha (up to 8 thousand Standard Output (SO), i.e. very small farms) which in some part do not produce for the market. In addition, there is a declining number of farms engaged in agricultural activity. In the years 2002-2010 their number decreased by 139 thousand, and so the average annual loss rate was 1.2%. However, there was an increase in the number of larger farms. The number of holdings with a size of over 50 thousand SO (medium-large, large and very large holdings) increased during the same period only by about 15.6 thousand, but the average annual rate of growth of their number was 3%. In these farms income per unit of own farmer labour and per unit of family members' labour in their holding is larger than the average national wage, extended reproduction of assets (investment expansion) and sustainable development (in the majority of farms) in terms of the environment. Significantly, those farms are receptive to innovation. The evolution of the size structure in Poland is therefore conducive to maintaining competitive capacity in holdings⁸⁹.

In assessing the economic situation of holdings according to their economic size, we need to point out that there is increased dependence of Polish agricultural holdings on public support. This concerns mainly economically largest holdings, usually with the largest area and receiving most support in direct payments⁹⁰.

As in the case of type of farming this work states the beneficial effects of shifting 25% of the funds from CAP pillar II to I or domestic support to farm incomes, regardless of the economic size of the holding and year analyzed. When choosing option 1 or 2 we undoubtedly need to follow the possibilities of implementing established priorities and development goals of the Polish agriculture not only on the basis of CAP pillar I funds, but also pillar II of this policy and the Cohesion Policy. Even more so because some programmes, such as those to support young farmers or small farms, may be subject to the principles of the new CAP in both CAP pillars.

⁸⁸ *Rocznik Statystyczny Rolnictwa 2012*, Główny Urząd Statystyczny [Central Statistical Office], Warszawa 2012.

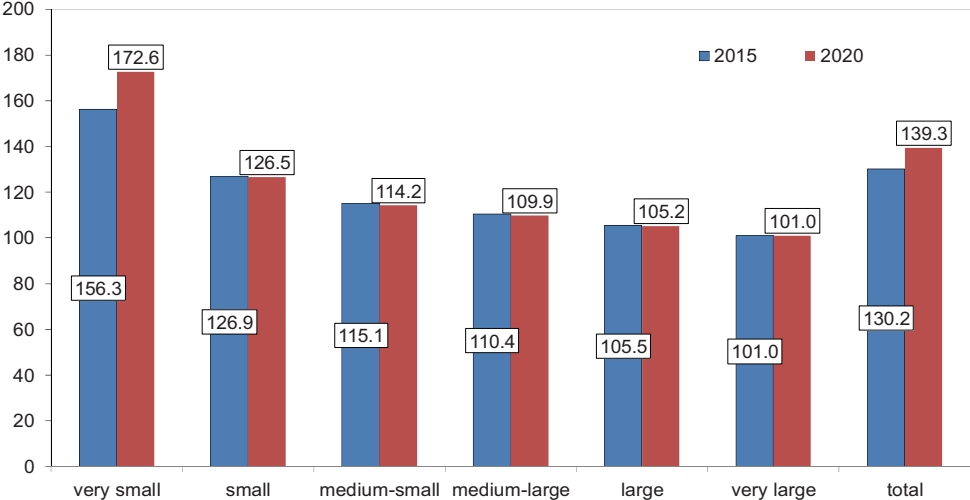
⁸⁹ W. Józwiak, *Polskie rolnictwo i gospodarstwa rolne w pierwszej i drugiej dekadzie XXI wieku*, series Program Wieloletni 2011-2014, no 53, IERiGŻ-PIB, Warszawa 2012.

⁹⁰ R. Grochowska, S. Mańko, R. Płonka, J. Seremak-Bulge, *Wpływ zmiany systemu płatności bezpośrednich...*, op. cit.

Taking into account the scenarios for distribution of direct payments after 2013 we again observe the influence of using redistributive payments on total agricultural income in the analysis. They are the highest in two years analyzed in comparison to other scenarios. The lowest incomes are obtained in the case of using the programme for small farms.

Interesting results can be seen when analysing different classes of holdings according to their economic size. Very small farms have the largest increase in agricultural income, when we use a redistributive payment in CAP Pillar I. This is particularly evident in Option 1. Definitely smaller benefits can be expected in other farms. A particularly low income growth (1%) was recorded in the case of very large farms (Figure 4.6). Again, these results, as in the analysis of types of farming, testify to a significant redistribution role of “payments to the first acres” in the new CAP.

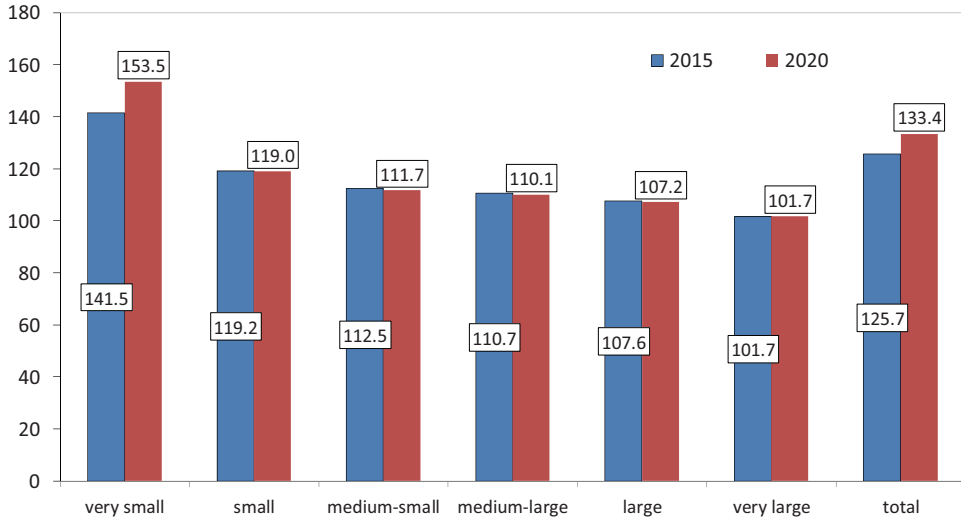
Figure 4.6. Dynamics of net farm income depending on the economic size of farm when using redistributive payments in CAP after 2013 (option 0 compared to option 1 scenario 3)



Source: own calculations.

In the scenario using coupled payments very small farms are again clear beneficiaries. In other holdings, income growth is smaller with a clear and regular trend, i.e. the higher the economic size, the smaller the income growth (Figure 4.7). The results obtained are very similar both in option 1 and 2.

Figure 4.7. Dynamics of net farm income depending on the economic size of the farm when using coupled payments in CAP after 2013 (option 0 compared to option 1 scenario 2)



Source: own calculations.

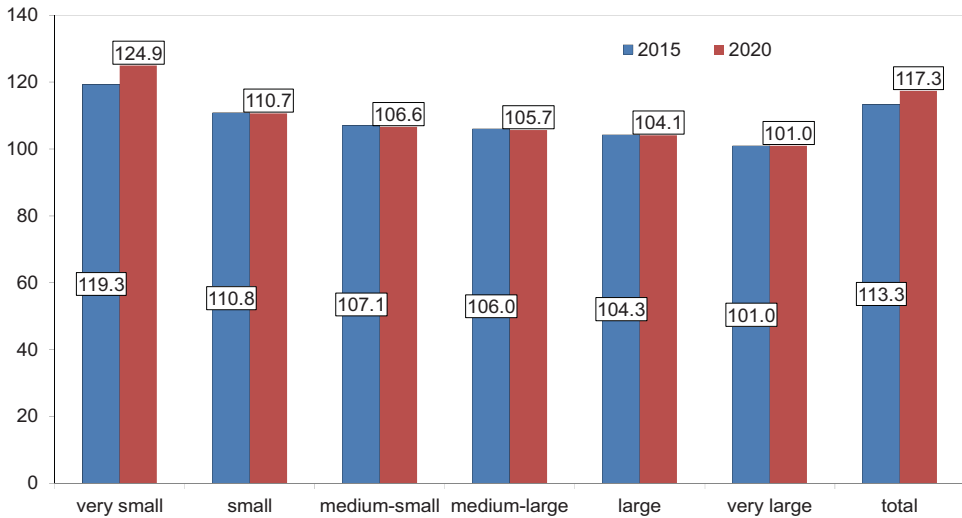
Using a part of the CAP pillar I pool for the programme to support small farms brings the greatest benefits to very small farms. However, they are, as mentioned earlier, the lowest compared with other scenarios. However, diversification of income growth between small, medium-small, medium-large and very large holdings is negligible. Very large farms are recorded the smallest increase of about 1% (Figure 4.8). This trend is repeated in both analysed options and years.

The results make it necessary to consider whether and how to support small farms in Poland, especially considering their size. According to an analysis of the European Parliament⁹¹ Poland has 44% of farms producing only to provide for their own needs and generating income below 8 thousand EUR of SO. The size may vary depending on the accepted definition of “small farm”⁹². According to the analysis, as such are considered holdings that sell less than 50% of agricultural production and use the rest for their own needs.

⁹¹ Semi-subsistence farming: value and directions of development, Study, European Parliament, April 2013.

⁹² *What is a small farm?*, EU Agricultural Economic Briefs, Brief No 2, European Commission, July 2011.

Figure 4.8. Dynamics of net farm income depending on the economic size of the farm when applying the programme to small farms in CAP after 2013 (option 0 compared to option 1, scenario 1)



Source: own calculations.

The new CAP provides opportunities to support small farms in both pillar I and II of this policy. It seems that it is rather pillar II that is better suited to help small farms. It should become a source of support to facilitate transformation or continuation of activities in those holdings. The problem is that the farms have so far used this pillar only to a small extent. These holdings can also be indirectly supported by the Cohesion Policy funds, through the use of ready infrastructure, as well as directly thanks to trainings financed from the European Social Fund.

The analysis in this paper shows that the programme, aimed at small farms under CAP pillar I, is least effective when it comes to agricultural income growth. Redistributive payment would play the largest role in this. As second would come coupled payments, intended for farms carrying out specific types of farming.

When taking decisions to support small farms within the CAP, it would be advisable to assess their situation in a wider context, taking into account economic and social considerations in the Polish economy. According to a recent Report on Polish rural areas⁹³, Polish villages become less and less agricultural. Approximately 60% of the rural population has no longer any connection with

⁹³ *Polska wieś 2012. Raport o stanie wsi*, (ed. J. Wilkin, I. Nurzyńska), FDPA, Wydawnictwo Naukowe Scholar, Warszawa 2012.

agricultural production and use of land. Supporting small farms over the next 7 years of the new financial perspective would freeze the already unfavourable agrarian structure of holdings for Poland and inhibit the current process of growth of larger, more economically efficient agricultural holdings.

4.3. Summary

In this paper an attempt was made to estimate the impact of potential options for distribution of direct payments on agricultural income of farms in Poland between 2015 and 2020. Increased flexibility of the Common Agricultural Policy instruments for the next financial perspective encourages the choice of optimal solutions, corresponding to the special nature of agriculture.

The analysis shows that we may expect a drop in agricultural income between 2015 and 2020 in relation to all holdings as a result of faster growth than production values. Their dependence on public support is therefore increasing. This includes all analysed options and scenarios of changes in the system of direct payments. However, the economic situation of holdings can vary depending on type of farming.

The highest income in the analysed period can be achieved by poultry farms, specialised in field crops and farms geared to raising dairy cows. Decrease in income can be expected in the case of holdings with horticultural crops, with remaining grass feeding animals, pigs and mixed farms with different directions of agricultural production. In the latter – if the past trends persist – net income will in 2020 come from direct payments in 100%. It seems appropriate, therefore, to strengthen measures to support structural changes in those holdings.

We observe a clear decline in income in an average agricultural holding in Poland between 2015 and 2020, regardless of the option or scenario in the case of analysing economic size of holdings. The economic situation of the holdings in the years analyzed may however turn out to be quite varied. Agricultural income in farms which are very small in terms of economic size are characterized by a strong declining trend. However, small holdings can expect income growth using the EU funds (options 0 and 1). Loss of income, on the other hand, is visible thanks to the support from the national budget (option 2). Other holdings, i.e. medium-small, medium-large, large and very large are characterized by an increase in income in each option and scenario.

Taking into account the possible estimated decline of incomes in agricultural holdings in Poland in the coming years, it can be concluded that any potential chance of increasing the pool of direct payments for Polish agriculture, either by shifting a part of the resources from CAP pillar II to I (Option 1), or

support from the national budget (Option 2) will have a positive impact on the income of an average farm. According to the analysis, agricultural income obtained in the case of option 1 is always higher when compared to option 2. These trends were seen both in the year 2015 and 2020.

We must therefore believe that the choice is simple. It is better to use EU funds in support of the Polish agricultural sector than burden the national budget. However, we need to be aware of the existing dependencies between CAP pillar I and II and other EU policies, notably the Cohesion Policy (in both Poland is one of the largest or the largest beneficiary).

Transfer of funds from CAP pillar II to I will result in impoverishment of the already reduced pool for Polish rural development. When taking into account the compulsory expenditure under pillar II (7% of envelope for the reserve, 30% of the envelope for climate and environmental programmes 5% of the envelope for the Leader programme) and the obligations from the last financial perspective (approximately 1,360 million EUR), there is 4.7 billion EUR to be used. Also, taking into account the payments to farmers in mountain areas and other less-favoured areas (LFAS) 2.3 billion EUR remains⁹⁴. Smaller funds in the framework of CAP pillar II can be supplemented, using the funds allocated to Poland in the Cohesion Policy. According to the initial government arrangements, national rural infrastructure development will be enhanced with about 4.5 billion EUR⁹⁵. We need to remember, however, that the Cohesion Policy programmes require co-financing from the national budget to an extent other than that of CAP pillar II, and operate in different principles.

Therefore, it is possible to support direct payments pool from the national budget or stay with the funds granted to Poland in part from CAP pillar I instead of moving funds from CAP pillar II to I. There is a dilemma of whether to support holdings with additional funds, taking into account the projected drop in agricultural income in the coming years, or rather to deepen the already large dependence of holdings on public aid. For example, income growth in recent years noted in field crop farms was not due to an increase in management efficiency, but to increasing the area of farms and thus obtaining higher direct payments. It should be presumed that after 2020 the principles of operation of CAP pillar I will finally change. It is impossible to run future CAP without taking into account the internalisation of costs and paying for the delivery of public goods.

⁹⁴ J. Rowiński, *Środki unijne finansujące polską gospodarkę żywnościową w latach 2014-2020 – wstępna ocena*, Unia Europejska 2013, Issue 2(219), pp. 44-51.

⁹⁵ *Nowa perspektywa finansowa dla polskiego rolnictwa zatwierdzona!*, www.agronews.com.pl.

These changes may favour the introduction of redistributive payments for the CAP instruments. According to this analysis, it is the allocation of up to 30% of the CAP pillar I payments for payments to the first acres that may have the best impact on the income of the average agricultural holding. In the second position, there is up to 15% of the pool for coupled payments. The lowest rating is recorded for the option of using up to 10% of the pool to support small farms.

Using redistributive payments raises a lot of controversy, since it causes the redistribution of payments from larger to smaller farms. We can therefore believe that it will adversely affect the competitiveness of large farms. According to estimates carried out in this work, introduction of this form of support will contribute to an increase in income mainly in farms with grass feeding animals other than dairy cows. Mixed farms would come in the second place. The largest drop in income should instead be expected in poultry farms, then in horticultural farms or those with permanent crops. However, analysis dependent on the economic size of farms showed that the largest agricultural income growth occurred in very small holdings. Definitely smaller benefits can be expected in other farms. A particularly low income growth (1%) was recorded in the case of very large farms.

We still have the dilemma of whom to support in the framework of the CAP. This policy has been plagued with the problem of clearly formulated objectives. Transfer of resources in the EU's agricultural policy is based on subsidising all farmers rather than on preventing market failure. In fact, the greatest support is received by holdings with a substantial share in the production on the market or large in terms of area. Redistributive payment reduces their share in the pool of direct payments. It is believed, therefore, that lowering income negatively affects their competitiveness. Does it really? Is this approach rather political in nature and associated with the activities of specific interest groups? According to Gardner⁹⁶, many holdings are dependent on direct payments due to the low efficiency of agricultural activity; in his opinion, the larger and more specialised a farm, the less it depends on support and payments play a smaller role in decision-making.

In the case of Poland covering agricultural holdings with a redistributive payment for the first 30 acres will result in a redistribution of support to small and medium-sized farms that dominate in Polish agriculture. No doubt this could aggravate the already unfavourable agricultural structure. However, if we introduce diversification of this payment to, for example, the first 10 ha and 10-30 ha

⁹⁶ B. Gardner, *CAP direct subsidy impact study ignores reality*, AgraEurope No 2592, November 2013.

(an idea already taken into account by the Ministry of Agriculture), then there is a possibility of support for farms with prospects for development and increasing their competitiveness on the market. This solution would also have a positive impact on the turnover of agricultural land in Poland. A similar approach, intended to serve the development of medium-sized farms, is to be introduced by Romania, for example.

The European Commission repeatedly undertook the initiative to change the distribution of direct payments between farms. The proportions of 20-80%, i.e. 20% of farms using 80% of the payments have persisted in the CAP for a number of years and are in both the EU-15 and EU-12⁹⁷. Introduction of redistributive payments is an opportunity to change these proportions and more efficient use of public funds.

⁹⁷ Report on the distribution of direct aids to agricultural producers (financial year 2011), European Commission, December 2012.

5. Long-term objectives of the Polish agricultural policy

The strategic objectives of the Polish agricultural policy were established in April 2012 in the document entitled “Strategy for sustainable rural development, agriculture and fisheries for the period 2012-2020”. It was considered that the most important of these is “to improve the quality of life in rural areas and effective use of their resources and potentials, including agriculture and fisheries for the sustainable development of the country”. Sustainability is defined in this case in the conventional manner by three levels: environmental, economic and social. In the RDP project⁹⁸ for 2014-2020, 6 priorities were identified which are: to facilitate knowledge transfer and innovation in the agriculture, forestry and rural areas; to improve the competitiveness of all sectors of agriculture and increase the viability of agricultural holdings; to improve the organisation of the food chain and promote risk management in agriculture; to restore, protect and strengthen the ecosystems that depend on agriculture and forestry; to support the effective management of resources and transition to a low-carbon economy resistant to climate change in agriculture, food and forestry sectors; to increase social inclusion, reduce poverty and promote economic development in rural areas. The strategic objectives and priorities of the agricultural policy include the whole EU financial perspective 2014-2020. They are at the same time so general that they cover the most important areas of opportunity and challenges for the policy at the beginning of the new decade of Polish membership in the EU.

5.1. Distribution of EU funds between the objectives

From the point of view of shaping agricultural policy, direct support stabilises agricultural income of those holdings, while aid for investments stimulates the process of upgrading farms to adapt to market conditions. Therefore, a challenge to agricultural policy would be to direct the stream of support from development programmes so as to ensure the restructuring of the sector and improve the competitiveness of agricultural holdings and an increase in income in the short and long term. The results of subsistence farms covered by the survey of the Polish FADN point to a more than 50% share of aid for operations in the income from farms. However, as shown by various studies, the largest effect of CAP support in the form of wider economic development is brought by pro-investment action. Therefore, they should play the greatest role in the RDP 2014-2020.

⁹⁸ The project “Rural Development Programme 2014-2020” (RDP 2014-2020) from 26 July 2013.

Undoubtedly the right shape of investment activities is a very difficult task. We should make the right choice of the target group and supported directions and scope of investment to obtain optimal results.

Implementing many of the goals and objectives enshrined in the RDP programme 2014-2020 with limited funds will therefore be one of the most important challenges facing the Polish agricultural policy. Although the funds intended for direct payments will be higher, the real EU budget for implementing the RDP will be lower. For the period 2007-2013, Poland will use the amount of 13.7 billion EUR for agricultural and rural development. In 2014-2020 it will most likely be 13.5 billion EUR. The RDP 2014-2020 project provides for the implementation of as many as 15 activities. The freedom of using funds is however very limited, because approx. 810 million EUR will be devoted to creating a compulsory reserve, 30% (4.0 billion EUR) for the following activities: agri-environmental-climatic programme and green agriculture, 5% for the LEADER programme (nearly 730 million EUR). After deducting these items the programme receives about 7.9 billion EUR for implementation. Another limitation is the implementation of actions that follow up on the RDP 2007-2013. These are: support for producer groups, agri-environmental programmes, afforestation, early retirement pensions. Estimates by the Ministry of Agriculture and Rural Development show that 1.4 billion EUR need to be used to cover these obligations. After deduction of that amount there remains approx. 6.5 billion EUR of EU funds for implementing the RDP 2014-2020. The programme will therefore be used to support a smaller number of beneficiaries than is now the case and it will offer no opportunities which are crucial for improving competitiveness in agriculture (approx. 30% of funding) and rural development priorities.

Paradoxically, “arithmetic limiting” of money values may be not only a challenge but also an opportunity for the 2014-2020 programme to concentrate on more important activities. Including activities in the action programme that arise from the mandatory provisions of the EU (by allocating the smallest funds for them) to cover the liabilities of the RDP 2007-2013 and LFA payments could result in focusing attention on activities permanently improving competitiveness and increasing the production capacity of food.

5.2. Complementarity of RDP and the Cohesion Policy

An integrated approach to national and regional policy, combining intervention of various funds so as to maximise the effect is the most important challenge for the State institutions in the years to come. What is important is good coordination and complementarity between the interventions and relevant arrangements while working on programmes and their later implementation.

A key challenge is to ensure enforcement of implementation of the regional operational programmes for rural areas.

When it comes to the RDP 2014-2020, its influence includes instruments mainly concentrated on the development of agriculture and food economy, and relating to the protection of the environment in connection with agriculture and forestry activities. Only the activities under “Priority 6. Increasing social inclusion, poverty reduction and promotion of economic development in rural areas” go beyond support for agriculture, food industry and environmental issues in conjunction with farming and forestry. The LEADER activities although essential for local development and creation of social capital, due to limited resources and limited scope of impact may not be treated as the main tool for local development in rural areas. The challenge is to use instruments for rural development provided for in the broader context of the implementation of the Cohesion Policy for 2014-2020. Agricultural policy should be keen on taking into account the impact on the rural areas through the national programme and regional programmes coordinated by the Ministry of Regional Development.

On-going negotiations on the scope of support, division between the national and regional level and complementarity between the various funds in the years 2014-2020 will be completed before signing the Partnership Agreement with the European Commission in mid 2014. Total allocation of resources under the Cohesion Policy is expected to bring about 82.5 billion EUR for Poland. Provincial governments will be responsible for 40% of funds. This will be in accordance with the Government’s principle of positioning as many programmes at regional level as possible. Each operational and regional programme related to the Cohesion Policy should include a reference to the strategic objective of rural development. It is estimated that only about 4.5 billion EUR is intended for this purpose until 2020. A greater emphasis will be placed on the use of Polish territorial potential through integrated interventions targeted at individual areas. Increase in the decentralization of implementing EU funds, however, does not just mean directing a considerable pool of resources to the regional level, but also greater responsibility of the regions.

5.3. Territorial dimension of intervention

From the point of view of the existing disparities in regional development it seems sensible to make an effort for “sustainable” nationwide access to the financial resources intended to support activities. A chance for such a purpose is

called enhanced RDP regionalization⁹⁹. This approach seems to be both a challenge and an opportunity for the implementation of the concept of sustainable development strategy.

In deciding on the regionalisation of RDP 2014-2020 activities we need to answer five essential questions. The first one concerns the model of agriculture (EU documents declare the idea of sustainable development based on multifunctionality and sustainability). Multifunctionality of agriculture is changing traditional production-oriented agricultural activity into new areas, new goods, services and activities. The second: competitiveness, which nowadays is the greatest challenge in the economic sphere. Market forces, especially global market, inevitably lead to increasing competition, intensity of the economic advantage motive (profit) and are pushing agriculture in the direction of further concentration, specialisation and intensification. Competitive capacity is determined by many factors: natural conditions (soil and climate), the structure of agriculture, technology and everything that happens in the entire food chain. The third: structural change of agriculture, especially the agrarian structure. The need for changes in the agrarian structure can be especially justified in increasing the competitiveness of agriculture in the globalising market, increasing agricultural income, relationship with sustainable rural development and contribution to the overall socio-economic development of the country. The dilemma of structural change is the choice of the way of these changes: should they proceed according to the polarity pattern, or support for model holdings or giving opportunities to all holdings. Fourth: incomes of agricultural population, which can be increased by improving the performance of work either by taking non-agricultural activities within or outside the farm. Fifth: spatial arrangement. Having a clear vision of the strategic objectives we can go on to answering questions relating to the regionalisation of agricultural policy.

Experience shows that a key role in determining the direction and pace of development was played by territorial self-government units. They contributed to determining the scope of public investment in the gmina and powiat. They are the ones to which either success or failure is assigned in terms of the attractiveness of life and doing business in the area. They successfully participated in using existing aid schemes in the EU, thus pursuing the assumed objectives of development. Local actions enjoy great interest among beneficiaries. In the

⁹⁹ It will consist in dividing the total programme budget (in addition to the activities of a horizontal nature) for pools of individual provinces, and their regional and local authorities will determine which of the activities and to what financial extent they should be implemented in their territory (subject to restrictions on the freedom of choice to be made so as to ensure a minimum level of expenditure on some particularly important on a national scale, goals).

2014-2020, budget perspective the Ministry of Regional Development assumes that the share of territorial self-government units in the use of the Cohesion Policy funds will rise from the current nearly 40% to over 60%. This means that they will be the most important creator and implementer of this policy. Selection and scope of implementation of individual RDP 2014-2020 activities should take into account the indications of local government or provincial governments.

5.4. Multi-functional rural development, job creation and infrastructure development

Until recently, the village was associated mainly with the production of food and agricultural raw materials. Currently agricultural production reduces its share in the set of functions realized by rural areas for non-agriculture production and consumption functions such as: sharing resources, (tourist and recreational services), new residence (municipal buildings and more and more “second homes”). Agriculture is less and less involved in economic development not only of the country but rural areas too. We are commonly dealing with the process of village disagrarisation, where the main problem is the creation of new jobs (employment rate of the population related to agricultural holdings amounted to 66% in 2009, and for non-farm population – 47%). The same employment in agricultural production ceases to be the main source of income for a large number of the rural population. Gradually, in addition to agriculture, forestry and fishing, residential and industrial functions occur in rural areas.

The challenge is the small industrialization of rural areas and multi-functional rural development. Despite the fact that we are faced with a relatively rapid increase in demand for agricultural raw materials (food, agricultural energy carriers), agriculture will be an important part of the rural economy, but it does not generate new jobs. The creation of jobs directly in the countryside or in nearby towns seems to be the best way to speed up changes in the agricultural sector. In rural areas the number of people not related to agriculture, and owners of small farms are not interested in a meandering agricultural policy, only the process of activating non-agricultural economy segments, i.e. job creation. This is one of the major arguments in support of multi-purpose process of rural development and at the same time one of the most important challenges for agricultural (and even-economic) policy in the next decade.

The process of multi-functional development would keep the human potential without leading to the depopulation of the countryside by differentiating livelihoods in rural areas. In addition to multi-functional character of the village an important factor of development and at the same time a challenge noticed since recently, seems to be multifunctional agriculture. Multifunctionality of

agriculture means that, in addition to providing food (food security), agriculture is also the manufacturer of services (such as management of soil resources, maintenance of biodiversity, creating conditions for wild animals and plants, water resource management, wind power generation, flood prevention, maintaining coherence and rural vitality, maintaining cultural traditions).

In addition to RDP 2014-2020 activities which are considerably limited in terms of financing, funds under the national and regional Cohesion Policy programmes offer opportunities to support multifunctional rural development in the next decade. At this stage, a challenge to agricultural policy is to ensure that the possibility of support in rural areas of investment was maintained: water management; waste management; water and wastewater management; renewable sources of energy; broadband Internet infrastructure; professional training aimed at making it easier to take on additional non-agricultural activities or change the profession; improved availability of public services in rural areas (including nurseries); transport infrastructure; energy infrastructure (including, inter alia, the development and implementation of intelligent distribution systems at low voltage levels); physical, economic and social revitalisation of rural areas; labour market institutions; development of entrepreneurship; development of products and services based on ICT; R&D sphere infrastructure and research in scientific units dealing with competitiveness and environmental dimension of agri-food production.

5.5. Competitiveness and innovation

Polish agriculture has a significant production potential, but its competitiveness in the single European market is low. Polish integration with the EU has sparked a lot of positive changes in the structure of agriculture. Covering Polish agriculture by CAP rules significantly increased farmers' incomes, increased investment and the degree of specialisation of farms. Despite the slowdown in the economy in the period 2008-2012 these trends occurred throughout the period after integration in 2004. At that time, farms were, however, subject to a strong polarization. Competitive holdings concentrated on one side (with an average surface of about 30 hectares of agricultural land). Their number in the years 2002-2010 increased by 50% to about 295 thousand. At the other extreme, there were about 1.263 thousand holdings with incomplete development capabilities. Some of them did not run farming activity and will continue to quit agriculture. It would be desirable if the land from those farms "flowed" to developing holdings. The current legal arrangements (decoupled direct payments, low agricultural tax) effectively slow down the transfer of land and improvement of the

agrarian structure which is one of the most important policy challenges in improving their competitiveness.

At the beginning of the new decade of Polish membership in the EU, agricultural policy objective must be to support raising the competitiveness of Polish agriculture on the European markets and worldwide. This objective can be achieved by promoting competitiveness by entities that can now already effectively compete with foreign operators and promote the development of farms that have the potential to join in the competition with agriculture in other countries. Limited opportunities in this regard are available thanks to future RDP 2014-2020. The challenge that remains is however the concentration of financial resources on activities related to achieving this goal. Multiplication of purposes, often conflicting, means that improving international competitiveness of agricultural holdings is becoming even more remote. Amongst other things, introduction of a system of support for small farms, undoubtedly advantageous from the point of view of an increase in their income, will certainly slow down the desired structural changes. The following measures and programmes can be considered as the most efficient activities in the new perspective and they serve to attain the objective of increasing the competitiveness of Polish agriculture: supporting active, young, educated agricultural producers; transfer of knowledge, innovation, information; investments in fixed assets (for producer groups, individual holdings); development of agricultural holdings and economic activity. However, the instruments related to “greening” or restriction of aid will certainly not be conducive to the development of the largest, most efficient and competitive agricultural holdings and their specialisation. Decisions made must therefore constitute a compromise between current and long-term solutions to promote agriculture.

Competitive advantages of agricultural products manufactured in Poland, and their processed products on the EU market have a cost character mainly. This is primarily the result of lower wages than in almost all the countries of the Community. However, competitiveness rarely comes from introducing new products, technologies, organisational changes and marketing. Maintaining price competitiveness with the expected (and necessary) increase in remunerating this factor of production makes it necessary to increase labour and land productivity by higher capital expenditures and improvement of the agrarian structure. This requires increased efforts to support the development of innovative activity and the removal of administrative barriers in land trading and skilful use of the CAP funds. Public support should be first and foremost for active factors of competition, an increase in concentration of supply, to improve the quality of agricultural products (and their products) and managing agriculture based on sustainable

production methods. A challenge to agricultural policy is also to focus on increase in productivity primarily by better equipping those working in Polish agriculture with capital and land. It will not be possible without the support of the processes of concentration in agriculture by means of structural change.

Improved competitiveness can be achieved also through a process of concentration of supply, mainly by way of producers functioning within the framework of producer groups recognized under EU legislation. It is therefore necessary to simplify all the legal provisions concerning the registration of groups, process of recognition and acquisition of financial support by groups. The level of organisation of the primary agricultural market in the EU-15 is much higher than in Poland. A challenge and opportunity for agricultural policy at the beginning of the new decade is therefore to improve the organisation of the food chain and promotion of risk management in agriculture, development of the market for the products of very high quality, strengthening the position of producers and their better linking with the market, stabilisation of agricultural and forestry production potential and introducing instruments for prevention and elimination of consequences of natural disasters. It is also necessary to increase expenditure on R&D in agricultural sciences, all forms of activity in the field of promotional actions for agricultural products produced in Poland and their processed products and administrative, legal and economical facilitations for implementing wide-ranging innovations for farms and small and medium-sized enterprises.

In the following years, in order to maintain the competitiveness of agricultural production, the key will be to support investment to allow farmers to adapt to the growing uncertainty about the weather conditions. In addition to the necessary investments, it will also be essential to develop a safety net for farmers to secure a minimum level of income and the ability to take on new agricultural activities after losses related to the occurrence of adverse weather events. A major challenge is the problem of further payment of direct payments. The previous justification for maintaining them is insufficient from the point of view of the WTO and did not have the support of the majority of public opinion. "Greening" payments introduced as part of the current reform also do not provide full social legitimacy. In this respect, we should realistically examine what other instruments could replace the payments or how to change the support system and rules for granting support so that payments could still function.

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