INSTITUTE OF AGRICULTURAL AND FOOD ECONOMICS
NATIONAL RESEARCH INSTITUTE

# Assessment of the impact of the EU „agricultural budget" for the period 2014-2020 on the financial condition of the national agriculture and the entire economy

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

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This publication was prepared as a contribution to the research on the following subject **Budget grounds for improvement of the competitiveness of the Polish agriculture** within the framework of the research task *National and the EU "rural budget" versus finance and functioning of the Polish agriculture and the national economy*

The report is aimed at assessing the potential scale and character of the impact of changes in size and structure of the funds coming to the Polish agriculture within the CAP 2014-2020.

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**Introduction**

This report presents the results of research conducted within the Multiannual Programme 2011-2014 under the task “National and the EU "rural budget" versus finance and functioning of the Polish agriculture and the national economy”. The 2013 milestone to be achieved within this task was the assessment of the impact of the EU “agricultural budget“ for the period 2014-2020 on the financial situation of the national agriculture and the entire Polish economy, which is why this report was dedicated to this issue.

In the year 2013, the European Union was undertaking very intensive efforts to find a compromise on the amount of the Community budget for 2014-2020 and arrangements for instruments to be implemented within the various areas of EU activities, including the Common Agricultural Policy (CAP). At the time of writing this report, still unknown were numerous detailed arrangements. This applies to both issues resolved at the level of the Community and national decisions about how to deploy new arrangements and support instruments in Poland.

From the Polish point of view the programming period 2014-2020 seems to be even more challenging than the previous ones. It is connected with the scale of the allocated support, as well as the knowledge that the use of measures may be crucial to the future prospects of socio-economic development of our country. Moreover, after 10 years of membership in the EU the capacity to absorb the appropriations ceased to be the sole criterion for assessing the use of developmental opportunity obtained thanks to the European funds. Therefore, the manner in which the funds allocated to Poland for the years 2014-2020 will be distributed among the different aid instruments and the choice of these instruments have incredible significance. For this reason, it is worth looking at both existing experiences, as well as the possible effects of variations in the distribution of support provided for the Polish agriculture under the CAP for the coming programming period.

The report aims at providing an assessment of the potential impact of the CAP funds on the Polish agriculture and the whole economy in the period 2014-2020. For comparison there are also presented preliminary results of a similar studies carried out in the Czech Republic and Hungary. Thus, the report presents a broader perspective.

This report does not have a form of a well-structured mono-thematic book but is a collection of several separate and independent chapters that deal with different topics related to the analysed problem.

The report consists of eight chapters. Chapter one shows the most important arrangements concerning the multiannual financial framework for 2014-2020 (MFF) and decisions on the reform of the Common Agricultural Policy. Chapter two is devoted to the presentation of the results of various studies on the impact of the EU funds on the development of the Polish economy. Chapter three focuses on the results of studies on the impact of the CAP measures directed to Poland. Chapter four deals with the rate of inflow of the CAP support to Poland during the programming period 2007-2013. Pre-

sented in the analysis are the transfers from both funds implementing EU agricultural policy in the years 2007-2012 for all Member States, which allows the assessment of how Poland copes with the measures of the CAP compared with the other countries.

Chapter five contains expert analysis entitled “Impact assessment of the EU “agricultural budget” for 2014-2020 on the financial situation of national agriculture and the entire Polish economy”, which was prepared for the purpose of the task by dr Bartłomiej Rokicki. Chapter six focuses on the effects of changes in the system of direct payments on the financial situation of Polish farms. For this purpose the FADN data for the different types of farms was used for the analysis of the effects of different scenarios of new arrangements of direct payments system that possibly could be introduced in Poland under the reformed CAP.

Chapter seven was prepared by dr József Forgasi and Kristof Tóth. It presents the evaluation of the multiannual financial framework from the perspective of Hungary and the Hungarian agriculture. Chapter eight of the report was prepared by dr Zusanna Křístková and dr Thomas Ratinger. This chapter is concentrated on the impact of the EU rural development policy on the Czech agriculture and rural areas.

## 1. EU financial perspective for 2014-2020 and the CAP

### 1.1. Arrangements for the financial perspective for 2014-2020

The official discussion on the EU Multiannual Financial Framework 2014-2020 started in June 2011 with the European Commission publishing its proposals for the amount of expenditures and the sources of their funding. In February 2013, during the EU Member States summit a compromise was reached on the level of spending within the next MFF. The aim of the EU budget is catalysing growth and job creation on the whole territory of the EU by leveraging the investment in human and productive capital. There is also stressed the need to increase the efficiency of expenditure and to improve the quality of management of public support.

The EU budget is divided into six headings:

1a. Competitiveness for growth and job creation;
1b. Consistency economic, social and territorial cohesion;
2. Sustainable growth: natural resources, which includes funds for direct payments and market intervention instruments;
3. Security and citizens;
4. Global Europe;
5. Administration;
6. Alignment.

The European Council reached a political agreement defining the level of the Community budget in the years 2014-2020. The overall level of spending of the EU-28 is expected to reach 959 988 million euro in commitments, i.e. 1.00% of GNI, and 908 400 million euro foreseen for payments, which represents 0.95% of the EU GNI. In July 2013 the Council adopted a draft regulation on the MFF 2014-2020 and in November it was adopted by the European Parliament.

The largest part of the MFF 2014-2020 was allocated to sustainable economic growth and cohesion policy (Table 1.1). In accordance with the regulation proposal no later than at the end of 2016, the European Commission is expected to present an review of the MFF 2014-2020 together with the submission of a legislative proposal.

Among the arrangements agreed is the increased each year by the Commission payment ceiling for the period 2015-2020 by an amount corresponding to the difference between the payments as set out in the MFF payment ceiling of the financial framework for the year n-1. This solution, called global margin payment is to be introduced in 2015, and in the last three years of implementation of the MFF is to apply the following limits:

- 2018: 7 billion;
- 2019: 9 billion;
- 2020: 10 billion euros.

Table 1.1. Multiannual financial framework for 2014-2020
( in millions of euros at constant prices of 2011)

| Commitment appropriations | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|---|---|
| 1. Intelligent growth supporting social inclusion | 60283 | 61725 | 62771 | 64238 | 65528 | 67214 | 69 004 | 450763 |
| 1a. Competitiveness for growth and job creation | 15605 | 16321 | 16726 | 17693 | 18490 | 19700 | 21 079 | 125614 |
| 1b. Economic, social and territorial cohesion | 44678 | 45404 | 46045 | 46545 | 47038 | 47514 | 47 925 | 325149 |
| 2. Sustainable growth: natural resources | 55883 | 55060 | 54261 | 53448 | 52466 | 51503 | 50 558 | 373179 |
| including: direct payments and market measures | 41585 | 40989 | 40421 | 39837 | 39079 | 38335 | 37 605 | 277851 |
| 3. Safety and citizens | 2053 | 2075 | 2154 | 2232 | 2312 | 2391 | 2 469 | 15686 |
| 4. Global Europe | 7854 | 8083 | 8281 | 8375 | 8553 | 8764 | 8 794 | 58704 |
| 5. Administration | 8218 | 8385 | 8589 | 8807 | 9007 | 9206 | 9417 | 61629 |
| Including administrative spending | 6649 | 6791 | 6955 | 7110 | 7278 | 7425 | 7590 | 49798 |
| 6. Alignment | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| Total commitment appropriations | 134318 | 135328 | 136056 | 137100 | 137866 | 139078 | 140242 | 959988 |
| % of GNI | 1.03 | 1.02 | 1.00 | 1.00 | 0.99 | 0.98 | 0.98 | 1.00 |
| Total payment appropriations | 128030 | 131095 | 131046 | 126777 | 129778 | 130893 | 130781 | 908400 |
| % of GNI | 0.98 | 0.98 | 0.97 | 0.92 | 0.93 | 0.93 | 0.91 | 0.95 |
| Available margin (in %) | 0.25 | 0.25 | 0.26 | 0.31 | 0.30 | 0.30 | 0.32 | 0.28 |
| Own resources ceiling as percentage of GNI | 1.23 | 1.23 | 1.23 | 1.23 | 1.23 | 1.23 | 1.23 | 1.23 |

*Source: European Commission (2013), annex 1.*

An important novelty compared to existing solutions is to review in the middle period of the MFF, which is expected to make transfers under the cohesion policy within the "Investment for growth and jobs" associated with changes in the level of GDP per capita of the regions, and hence their powers to obtain the level of support period 2017-2020, which will be associated with the movement of funds between countries.

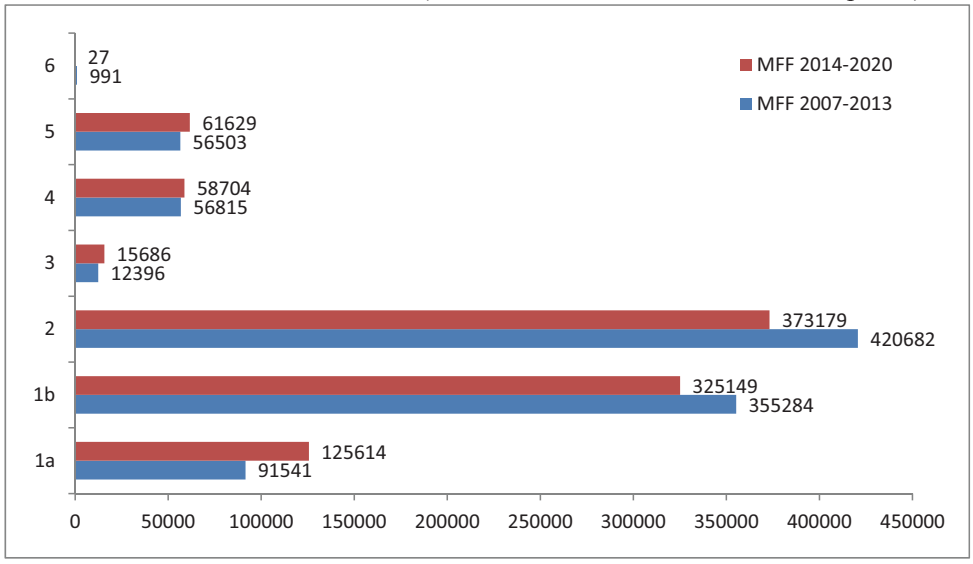
A flexibility instrument for the funding of specific categories of expenditure was also created. It is to be applied for expenditure which cannot be covered within the available limits. Ceiling on the annual amount available under this facility is 471 million euros. In relation to this mechanism available resources for the year n to be used by the end of year n+3.

A reserve for emergency aid was also establish. It is to be directed in emergency situations to third countries. The annual provision for this purpose is expected to be 280 million euro, used by the end of year n+1, while in the case of extraordinary events in the EU and candidate countries support is to be implemented under the Euro-

pean Union Solidarity Fund. The annual amount of funds allocated for this purpose is 500 million euros, which is to be used at the end of year n+1.

In parallel to the negotiations on the MFF 2014-2020 there were debates on the reform of the CAP, a new program for education, youth and sports and the Horizon 2020 initiative, which concerns the development of science. The final level of expenditure provided for in the various parts of the MFF 2014-2020 shows significant changes compared with the MFF 2007-2013 (Figure 1.1). Expenditure on competitiveness (heading 1a) increased by over one third spending on security (heading 3) for more than one quarter. In contrast, the largest decline in anticipated expenditure relates to sustainable growth (heading 2), whose budget is reduced by over 11%, while funds for cohesion policy (heading 1b) by more than 8%. Regarding the measures for the implementation of the tasks of the CAP, the planned budget amounts to 915 billion euros in the prices of 2011. The scale of appropriations allocated to the tasks of the CAP in current prices is, however, close to 103 billion euros. In the framework of heading 2 most of the funds is earmarked for direct payments and market intervention.

Figure 1.1. The amount of spending on the various departments in the MFF 2007-2013 and MFF 2014-2020 (in million euros; commitments; 2011 prices)




Legend:

1a. Competitiveness for growth and job creation; 1b. Consistency economic, social and territorial cohesion; 2. Sustainable growth: natural resources; 3. Safety and citizens; 4. Global Europe; 5. Administration; 6 .Alignment. The data represent the percentage change in the level of resources in relation to the MFF 2007-2013.

*Source: http://ec.europa.eu/budget/mff/Figures/index_en.cfm*

Comparing the 2014-2020 MFF and MFF 2007-2020 in relation to the CAP it should be borne in mind that in fact the funds disbursed were lower than planned assignments. This does not change the fact that the level of resources provided for the implementation of the CAP has been in the new financial perspective greatly reduced and the heading 2, consisting mainly of funds for the CAP was most reduced in comparison with the period 2007-2013 (Table 1.2).

Table 1.2. Measures within the heading 2 of the MFF 2014-2020 and a comparison of the amount of the budget in 2013 and 2020
(in millions of euros, at constant prices of 2011)

| Category | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2014--2020 | 2020 compared to 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| Heading 2 | 59633 | 55883 | 55060 | 54261 | 53448 | 52466 | 51503 | 50558 | 373179 | -15.20% |
| Direct payments and market measures | 43180 | 41585 | 40989 | 40421 | 39837 | 39079 | 38335 | 37605 | 277851 | -12.90% |
| *including:* | | | | | | | | | | |
| *Direct payments* | | *39681* | *39112* | *38570* | *38013* | *37289* | *36579* | *35883* | *265127* | - |
| *30% for greening* | | *11904* | *11734* | *11571* | *11404* | *11187* | *10974* | *10765* | *79538* | - |
| *Market measures* | *3182* | *1904* | *1877* | *1851* | *1824* | *1790* | *1756* | *1722* | *12724* | - |
| Rural development | 13890 | 12865 | 12613 | 12366 | 12124 | 11887 | 11654 | 11426 | 84936 | -17.7% |
| Fisheries | 937 | 959 | 957 | 951 | 940 | 931 | 921 | 917 | 6574 | -2.10% |
| Life+ | 352 | 381 | 402 | 419 | 438 | 456 | 474 | 486 | 3057 | 38.20% |
| Agencies | 50.3 | 49.1 | 49.1 | 49.1 | 49.1 | 49.1 | 49.1 | 49.1 | 344 | -2.40% |
| Margin | 1223 | 44.1 | 50.2 | 54.9 | 59.5 | 64.3 | 69.4 | 74.3 | 417 | |

*Source: Directoriate-General for Internal Policies (2013), tab. 11.*

### 1.2. Adopted shape of the CAP for 2014-2020

In its conclusions of 7-8 February 2013 the Council wrote that the purpose of the CAP is to increase productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimal utilization of the factors of production, especially labour and thus provide an adequate standard of living for the agricultural community, in particular by an increase in personal income. The aim is also to stabilize markets, ensure the availability of supplies, and that agricultural products reach consumers at reasonable prices.

The EC adopted a proposal of 2011 presented its vision of the CAP reform. Many of its proposals were finally accepted in the political compromise reached by the Commission, the Council and the European Parliament in June 2013. Among of them

was the gradual reduction of differences in the level of direct payment rates by raising rates in those countries whose rates are lower than 90% of the EU average. The gradual reduction of these disparities is to take place in the period 2015-2020. The greening of direct payments, for which 30% of the national envelope is to be used and the ability to move funds between the pillars of the CAP were also agreed.

The issues concerning the level of spending on the CAP were set out in September 2013. The final agreement is based on the draft regulations presented by the European Commission in October 2011. Most of the arrangements are to come into force in 2014, but new system of direct payments is to start being in use from 2015.

In the new system of direct payments, except payments for practices beneficial to the environment (greening), there are compulsory payments for young farmers, for which up to 2% of the national envelope can be spent. Member States may also decide to introduce the following forms of payments:

- payments related to production;
- payments for areas with natural constraints – up to 5% of the national envelope (with the possibility to be increased support from funds under Pillar II);
- redistributive payments – up to 30% of the national envelope; payments are designed as an additional support for the first hectares (their number depends on the shape of this instrument in each of the countries), which may significantly affect the structure of agricultural support;
- payments system for small farmers.

The new Member States have benefited so far from the single area payment scheme (SAPS) and they may continue to use this system until the end of the multiannual financial framework 2014-2020. By contrast, the so far single payment scheme (called SPS) based on historic titles for payments is to be changed, and the countries that have been using it need to implement a system with more uniform payments, whereby it is possible to standardize them on a national or regional level. It should be emphasized that the concept of the region can be understood in two ways, and regions can be determined either on the basis of administrative criteria or agronomic ones.

It was necessary not only to standardize external payment rates and reduce the differences in the level of rates in individual countries, but also to unify internal diversity within the countries that make up the Community. In both cases, the lowest rate is to be increased to compensate for one third of the difference between their current level and 90%. The increase in minimum rates is coupled with the reduction of rates for farmers receiving more than the national average. However, Member States have the possibility to limit the reduction to 30%.

Meanwhile, in the case of the biggest beneficiaries of the CAP, reform provides for a mandatory reduction in the amount of payments received. This concerns the farms receiving more than 150 thousand euros, but it is possible to increase the amount by adding the payroll costs. Reduction of payments is to reach at least 5% of the amount received. Amount obtained in this manner is to be used for rural development

in the region/country and it is treated as EU support that does not require co-financing. Optionally, Member States may also introduce an upper limit for farms receiving more than 300 thousand euros, but in this case also it is possible to increase the amount by adding the payroll costs.

An interesting solution to be introduced is the so-called redistributive payments eligible for the first hectares of each of the farms receiving direct payments. For this payments up to 30% of the national envelope can be allocated, and these payments may be given to a maximum of 30 ha. However, in the case of countries where the average farm size is larger, it is possible to increase this ceiling to the national average farm size. At the same time, however, the rate of the payment cannot exceed 65% of the average rate of direct payments.

When it comes to mandatory payments to young farmers, support will be granted to young farmers for the first five years of their farming activities.

A new form of direct payments that can be implemented is a special support system for small farmers. Up to 10% of the national envelope can be assigned for these payments although Member States may also finance these payments from their own public funds. Participation in this system would be opened to any farmer who submits an application for inclusion in this system. Participants of this system are to receive an annual payment amounting from 500 to 1 250 euros, depending on the adopted method of calculating the amount of support. The advantage of participation in this system is the exemption from cross-compliance and the so-called greening controls. This exemption is also to limit the transaction costs incurred by Member States in relation to controls of farms participating in the system of direct payments.

In order to maintain production in selected vulnerable sectors or regions it is possible to use payments coupled with production. Such support should be limited to 8% of the national envelope. This limit may be increased to 13% if this type of support currently exceeds 5% of the envelope. Another 2% of the envelope can be used to support crops.

A key element of the changes in the system of direct payments, which are to apply as of 2015 is greening, i.e. implementation of practices beneficial for the climate and the environment. This is a mandatory element and in the case of not complying with these requirements a farmer will not only not receive 30% of payment, but also a penalty be imposed on the remaining amount of payment. In the third year of the introduction of these payments penalty can be up to 20 %, and in the fourth 25% of the amount which would have been granted if the requirements had been met.

Final agreement on the pro-ecological practices results in exemption of numerous farms from the obligation to fulfil the three practices that include:

1. Maintenance of permanent grassland.
2. Crop diversification, namely the need for at least two or three different crops, the main crop may occupy up to 75% of UAA and the two main crops together up to

95%. The requirement, however, applies only to farms exceeding 10 ha of UAA, and if the area of arable land is larger than 30 ha, it is required to grow three crops.

3. Maintaining ecological area (such as field margins, trees, fallow land), which has a cover at least 5% of the UAA. This requirement applies only to farms over 15 ha of UAA. The share of such areas can be raised to 7% after the EC presents a report and an appropriate legislative proposal in 2017.

There should be a mechanism for greening equivalence, i.e. the recognition of current pro-ecological practices that are to be considered an equivalent to the required practices. In relation to the concept of limiting the right to payment only to active farmers a list of non-farming activities that make it impossible to receive3 payments was developed. It includes area belonging to: airports, railway transport, water supply, real estate services, sports and recreation. This list may be expanded by the Member States.

There is also a possibility of making transfers between the pillars of the CAP. It is possible to move up to 15% of the funds allocated to one of the pillars to the other one. However, in the case of countries in which the current payment rates are lower than 90% of the EU average a move to direct payments can reach up to 25% of the funds allocated to them for the development of rural areas.

Regarding rural development, almost all the arrangements presented in the proposals submitted in 2011 by the European Commission were accepted. It should, however, be noted that in relation to the requirement to allocate at least 30% of the EAFRD for environmental measures, their list was extended and now includes:

- investments in fixed assets, if they are related to environmental protection and climate change prevention and adaptation;
- forestry measures;
- agri-environment payments and payments to the climate;
- organic farming;
- payments related to Natura 2000 (excluding payments associated with the Water Framework Directive);
- payments to areas facing natural or other specific constraints.

The maximum level of co-financing rates are dependent on the region. Higher limit of 85% applies to less developed regions, outermost and the smaller islands of the Aegean Sea. In the case of transition regions the EU support can reach up to: 75% (regions whose GDP per capita for the 2007-2013 period was less than 75% of the EU -25, but the rate is higher than 75% of the average GDP in the EU-27) or 63%. In other regions the maximum co-financing rate is 53%. The minimum level is 20%. At the same time the agreed proposal provides for certain derogations from the maximum levels for certain projects LEADER, expenses associated with climate change and the transfer of knowledge.

An important innovation for the development of rural areas is the ability to implement thematic sub-programmes to focus on key issues relating to rural development

in particular region. These sub-programmes may include measures financed under the EAFRD supporting: young farmers, mountain areas, mitigation and adaptation to climate change, women in rural areas, short supply chains and climate biodiversity.

By the end of 2018 (later every 4 years) the Commission is to submit a report on the results of the CAP in relation to its main objectives: viable food production, sustainable management of natural resources and sustainable territorial development.

The allocation of funds among the Member States for direct payments and rural development policy was also agreed. The budget for direct payments in the years 2015-2020 provides for a total of over 252 billion euro (Table 1.3). France will remain the biggest beneficiary. It is worth noting which countries are to receive in the period 2015-2020 a larger sum each year, and which a lower one. The annual level of EAGF for direct payments in the EU-28 will be gradually increased in the period 2015-2020. For most Member States the annual envelope will decline. The increase will apply to most of the new Member States, that is, those which have become part of the Community since 2004. Exceptions are: Czech Republic, Slovenia, Hungary, Malta and Cyprus, which will see a decrease in the envelope allocated for 2020 compared to those of 2015. However, among the older members of the EU increase in the level of national envelopes during this period will apply to Finland, Spain, the UK and Sweden. In the case of Poland, the national envelope for 2020 is only about 3% higher than in 2015.

Table 1.3. Measures MFF 2014-2020 earmarked for direct payments
(in '000 euro, current prices)

| MS | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2015-2020 |
|---|---|---|---|---|---|---|---|
| Austria | 693,716 | 693,065 | 692,421 | 691,754 | 691,746 | 691,738 | 4,154,440 |
| Belgium | 544,047 | 536,076 | 528,124 | 520,170 | 512,718 | 505,266 | 3,146,401 |
| Bulgaria | 642,103 | 721,251 | 792,449 | 793,226 | 794,759 | 796,292 | 4,540,080 |
| Croatia | 113,908 | 130,550 | 149,200 | 186,500 | 223,800 | 261,100 | 1,065,058 |
| Cypr | 51,344 | 50,784 | 50,225 | 49,666 | 49,155 | 48,643 | 299,817 |
| Czech Republic | 875,305 | 874,484 | 873,671 | 872,830 | 872,819 | 872,809 | 5,241,918 |
| Denmark | 926,075 | 916,580 | 907,108 | 897,625 | 889,004 | 880,384 | 5,416,776 |
| Estonia | 110,018 | 121,870 | 133,701 | 145,504 | 157,435 | 169,366 | 837,894 |
| Finland | 523,247 | 523,333 | 523,422 | 523,493 | 524,062 | 524,631 | 3,142,188 |
| France | 7,586,341 | 7,553,677 | 7,521,123 | 7,488,380 | 7,462,790 | 7,437,200 | 45,049,511 |
| Germany | 5,178,178 | 5,144,264 | 5,110,446 | 5,076,522 | 5,047,458 | 5,018,395 | 30,575,263 |
| Greece | 2,047,187 | 2,039,122 | 2,015,116 | 1,991,083 | 1,969,129 | 1,947,177 | 12,008,814 |
| Hungary | 1,272,786 | 1,271,593 | 1,270,410 | 1,269,187 | 1,269,172 | 1,269,158 | 7,622,306 |
| Ireland | 1,216,547 | 1,215,003 | 1,213,470 | 1,211,899 | 1,211,482 | 1,211,066 | 7,279,467 |
| Italy | 3,953,394 | 3,902,039 | 3,850,805 | 3,799,540 | 3,751,937 | 3,704,337 | 22,962,052 |
| Latvia | 168,886 | 195,649 | 222,363 | 249,020 | 275,887 | 302,754 | 1,414,559 |
| Lithuania | 393,226 | 417,890 | 442,510 | 467,070 | 492,049 | 517,028 | 2,729,773 |
| Luxembourg | 33,662 | 33,603 | 33,545 | 33,486 | 33,459 | 33,431 | 201,186 |
| Malta | 5,240 | 5,127 | 5,015 | 4,904 | 4,797 | 4,689 | 29,772 |
| Netherlands | 793,319 | 780,815 | 768,340 | 755,862 | 744,116 | 732,370 | 4,574,822 |
| Poland | 2,970,020 | 2,987,267 | 3,004,501 | 3,021,602 | 3,041,560 | 3,061,518 | 18,086,468 |
| Portugal | 557,667 | 565,816 | 573,954 | 582,057 | 590,706 | 599,355 | 3,469,555 |
| Romania | 1,428,531 | 1,629,889 | 1,813,795 | 1,842,446 | 1,872,821 | 1,903,195 | 10,490,677 |
| Slovakia | 377,419 | 380,680 | 383,938 | 387,177 | 390,781 | 394,385 | 2,314,380 |
| Slovenia | 138,980 | 137,987 | 136,997 | 136,003 | 135,141 | 134,278 | 819,386 |
| Spain | 4,833,647 | 4,842,658 | 4,851,682 | 4,866,665 | 4,880,049 | 4,893,433 | 29,168,134 |
| Sweden | 696,487 | 696,890 | 697,295 | 697,678 | 698,723 | 699,768 | 4,186,841 |
| UK | 3,548,576 | 3,555,915 | 3,563,262 | 3,570,477 | 3,581,080 | 3,591,683 | 21,410,993 |
| EU-28 | 41,679,856 | 41,923,877 | 42,128,888 | 42,131,826 | 42,168,635 | 42,205,449 | 252,238,531 |

*Source: http://ec.europa.eu/agriculture/cap-funding/budget/mff-2014-2020/mff-Figures-andcap_en.pdf*

As regards the EAFRD measures, the annual expenditures is to increase during only marginally in the period 2014-2020 (Table 1.4). Only in the case of 13 countries there is expected a slight increase in the annual envelope. Countries which will have their amount of funds for rural development increased include: Austria, Belgium, Estonia, Finland, France, Lithuania, Luxembourg, Latvia, Malta, Portugal, Slovenia, Sweden and Italy. In the case of Croatia, the support from the EAFRD will be at the same level each year.

Table 1.4. EAFRD measures in 2014-2020 by Member States (in euro, current prices)

| Member State | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2014-2020 |
|---|---|---|---|---|---|---|---|---|
| Austria | 557,806,503 | 559,329,914 | 560,883,465 | 562,467,745 | 564,084,777 | 565,713,368 | 567,266,225 | 3,937,551,997 |
| Belgium | 78,342,401 | 78,499,837 | 78,660,375 | 78,824,076 | 78,991,202 | 79,158,713 | 79,314,155 | 551,790,759 |
| Bulgaria | 335,499,038 | 335,057,822 | 334,607,538 | 334,147994 | 333,680,052 | 333,187,306 | 332,604,216 | 2,338,783,966 |
| Croatia | 332,167,500 | 332,167,500 | 332,167,500 | 3,321,67,500 | 332,167,500 | 332,167,500 | 332,167,500 | 2,325,172,500 |
| Cypr | 18,895,839 | 18,893,552 | 18,891,207 | 18,888,801 | 18,886,389 | 18,883,108 | 18,875,481 | 132,214,377 |
| Czech Republic | 314,349,445 | 312,969,048 | 311,560,782 | 310,124,078 | 308,659,490 | 307,149,050 | 305,522,103 | 2,170,333,996 |
| Denmark | 90,287,658 | 90,168,920 | 90,047,742 | 89,924,072 | 89,798,142 | 89,665,537 | 89,508,619 | 629,400,690 |
| Estonia | 103,626,144 | 103,651,030 | 103,676,345 | 103,702,093 | 103,728,583 | 103,751,180 | 103,751,183 | 725,886,558 |
| Finland | 335,440,884 | 336,933,734 | 338,456,263 | 340,009,057 | 341,593,485 | 343,198,337 | 344,776,578 | 2,380,408,338 |
| France | 1,404,875,907 | 1,408,287,165 | 1,411,769,545 | 1,415,324,592 | 1,418,941,328 | 1,422,813,729 | 1,427,718,983 | 9,909,731,249 |
| Germany | 1,178,778,847 | 1,177,251,936 | 1,175,693,642 | 1,174,103,302 | 1,172,483,899 | 1,170,778,658 | 1,168,760,766 | 8,217,851,050 |
| Greece | 601,051,830 | 600,533,693 | 600,004,906 | 599,465,245 | 598,915,722 | 598,337,071 | 597,652,326 | 4,195,960,793 |
| Hungary | 495,668,727 | 495,016,871 | 494,351,618 | 493,672,684 | 492,981,342 | 492,253,356 | 491,391,895 | 3,455,336,493 |
| Ireland | 313,148,955 | 313,059,463 | 312,967,965 | 312,874,411 | 312,779,690 | 312,669,355 | 312,485,314 | 2,189,985,153 |
| Italy | 1,480,213,402 | 1,483,373,476 | 1,486,595,990 | 1,489,882,162 | 1,493,236,530 | 1,496,609,799 | 1,499,799,408 | 10,429,710,767 |
| Lithuania | 230,392,975 | 230,412,316 | 230,431,887 | 230,451,686 | 230,472,391 | 230,483,599 | 230,443,386 | 1,613,088,240 |
| Luxembourg | 14,226,474 | 14,272,231 | 14,318,896 | 14,366,484 | 14,415,051 | 14,464,074 | 14,511,390 | 100,574,600 |
| Latvia | 138,327,376 | 138,361,424 | 138,396,059 | 138,431,289 | 138,467,528 | 138,498,589 | 138,499,517 | 968,981,782 |
| Malta | 13,880,143 | 13,965,035 | 14,051,619 | 14,139,927 | 14,230,023 | 14,321,504 | 14,412,647 | 99,000,898 |
| Netherlands | 87,118,078 | 87,003,509 | 86,886,585 | 86,767,256 | 86,645,747 | 86,517,797 | 86,366,388 | 607,305,360 |
| Poland | 1,569,517,638 | 1,567,453,560 | 1,565,347,059 | 1,563,197,238 | 1,561,008,130 | 1,558,702,987 | 1,555,975,202 | 10,941,201,814 |
| Portugal | 577,031,070 | 577,895,019 | 578,775,888 | 579,674,001 | 580,591,241 | 581,504,133 | 582,317,022 | 4,057,788,374 |
| Romania | 1,149,848,554 | 1,148,336,385 | 1,146,793,135 | 1,145,218,149 | 1,143,614,381 | 1,141,925,604 | 1,139,927,194 | 8,015,663,402 |
| Slovakia | 271,154,575 | 270,797,979 | 270,434,053 | 270,062,644 | 269,684,447 | 269,286,203 | 268,814,943 | 1,890,234,844 |
| Sloevenia | 118,678,072 | 119,006,876 | 119,342,187 | 119,684,133 | 120,033,142 | 120,384,760 | 120,720,633 | 837,849,803 |
| Spain | 1,187,488,617 | 1,186,425,595 | 1,185,344,141 | 1,184,244,005 | 1,183,112,678 | 1,182,137,718 | 1,182,076,067 | 8,290,828,821 |
| Sweden | 248,858,535 | 249,014,757 | 249,173,940 | 249,336,135 | 249,502,108 | 249,660,989 | 249,768,786 | 1,745,315,250 |
| UK | 371,473,873 | 370,520,030 | 369,548,156 | 368,557,938 | 367,544,511 | 366,577,113 | 365,935,870 | 2,580,157,491 |
| EU-28 | 13,618,149,060 | 13,618,658,677 | 13,619,178,488 | 13,619,708,697 | 13,620,249,509 | 13,620,801,137 | 13,621,363,797 | 95,338,109,365 |
| Technical aid | 34,130,699 | 34,131,977 | 34,133,279 | 34,134,608 | 34,135,964 | 34,137,346 | 34,138,756 | 238,942,629 |
| Total | 13,652,279,759 | 13,652,790,654 | 13,653,311,767 | 13,653,843,305 | 13,654,385,473 | 13,654,938,483 | 13,655,502,553 | 95,577,051,994 |

*Source: http://ec.europa.eu/agriculture/cap-funding/budget/mff-2014-2020/mff-Figures-and-cap_en.pdf*

The level of resources allocated to rural development in the context of previous and current MFF should be also compared (Table 1.5). The biggest decline in support applies to the Czech Republic, Cyprus and Poland and the largest increase in France, Malta and Italy.

Table 1.5. Level of EAFRD support intended for MS within MFF 2007-2013 and MFF 2014-2020 (in millions of euro, change in %)

| Member State | 2007-2013 | 2014-2020 | Change |
|---|---|---|---|
| Austria | 4,117.6 | 3,937.6 | -4.4 |
| Belgium | 496.1 | 551.8 | 11.2 |
| Bulgaria | 2,686.5 | 2,338.8 | -12.9 |
| Croatia | - | 2,325.2 | |
| Cypr | 168.5 | 132.2 | -21.5 |
| Czech Republic | 2,914.5 | 2,170.3 | -25,5 |
| Denmark | 585.5 | 629.4 | 7,5 |
| Estonia | 737.1 | 725.9 | -1,5 |
| Finland | 2,203.7 | 2,380.4 | 8,0 |
| France | 7,705.3 | 9,909.7 | 28,6 |
| Germany | 9,117.0 | 8,217.9 | -9,9 |
| Greece | 3,962.8 | 4,196.0 | 5,9 |
| Hungary | 3,938.2 | 3,455.3 | -12,3 |
| Ireland | 2,547.8 | 2,190.0 | -14,0 |
| Italy | 9,138.5 | 10,429.7 | 14,1 |
| Latvia | 1,076.3 | 969.0 | -10,0 |
| Lithuania | 1,802.9 | 1,613.1 | -10,5 |
| Luxembourg | 97.0 | 100.6 | 3,7 |
| Malta | 79.4 | 99.0 | 24.7 |
| Netherlands | 602.3 | 607.3 | 0.8 |
| Poland | 13,691.3 | 10,941.2 | -20.1 |
| Portugal | 4,140.7 | 4,057.8 | -2.0 |
| Romania | 8,203.8 | 8,015.7 | -2.3 |
| Slovakia | 2,038.4 | 1,890.2 | -7.3 |
| Slovenia | 938.4 | 837.8 | -10.7 |
| Spain | 8,161.8 | 8,290.8 | 1.6 |
| Sweden | 1,968.0 | 1,745.3 | -11.3 |
| UK | 2,426.0 | 2,580.2 | 6.4 |
| EU-27 | 95,545.4 | - | |
| EU-28 | - | 95,338.1 | |
| EU-28+ | - | 95,577.1 | |

*Source: Own elaboration based on: Directoriate-General for Internal Policies (2013) and http://ec.europa.eu/agriculture/cap-funding/budget/mff-2014-2020/mff-Figures-andcap_en .pdf*

Final adoption of the key regulations will take place in December 2013, which will significantly delay the implementation of the CAP. In the case of direct payments the new system will come into force only in 2015. However, in the case of rural development policy a regulation was prepared by the EC enabling implementation of transitional arrangements that allow to continue funding the instruments of multiannual nature. The new rural development programmes will come in force at the time dependent on the ability of the Member States to prepare the final programmes and the capacity

of the European Commission concerning the analysis and approval of these programs. It can be expected that in the second half of 2014 the first programmes will be sent to the EC for evaluation.

## 2. Impact of the EU funds on the development of Poland

On 1 May 2014 it will have been ten years since Poland became a member of the European Union. Therefore, it is possible to make the first analyses of the impact of multi-annual support and overall assessment of the impact of measures directed to the Poland from the Community budget.

By the end of 2012 Poland received over 76.7 billion euro of the EU funds and Polish contributions the EU budget totalled 26.4 billion (Table 2.1). So far, the balance of flows between Poland and the EU is about two thirds of transfers remaining in Poland. The transfers carried out under the CAP alone almost offset the Polish contribution to the Community budget, allowing Poland to be a net beneficiary of the EU budget.

Table 2.1. Amount of the EU financial transfers to Poland in the years 2004-2012 (in million euros) and the share of CAP in the EU support (in percent)

| Year | Total transfers from the EU | Contributions | Returns | Balance | Total transfers from CAP | Share in transfers | Share in balance |
|---|---|---|---|---|---|---|---|
| 2004 | 2478 | 1319 | 0 | 1159 | 298 | 12.0 | 25.7 |
| 2005 | 4018 | 2379 | 23 | 1616 | 1543 | 38.4 | 95.5 |
| 2006 | 5269 | 2552 | 4 | 2713 | 2155 | 40.9 | 79.4 |
| 2007 | 7406 | 2779 | 45 | 4582 | 2553 | 34.5 | 55.7 |
| 2008 | 7396 | 3402 | 8 | 3986 | 2032 | 27.5 | 51.0 |
| 2009 | 9258 | 3234 | 13 | 6011 | 2914 | 31.5 | 48.5 |
| 2010 | 11229 | 3490 | 2 | 7737 | 3479 | 31.0 | 45.0 |
| 2011 | 14271 | 3734 | 44 | 10493 | 4255 | 29.8 | 40.6 |
| 2012 | 15440 | 3569 | 2 | 11869 | 4739 | 30.7 | 39.9 |
| 2004--2012 | 76765 | 26458 | 141 | 50166 | 23968 | 31.2 | 47.8 |

*Source: MF.*

One of the studies presenting the expected scale of the impact of cohesion policy implemented in the 2007-2013 financial perspective for the new Member States is the paper by Janos Varga and Jan in 't Velda, which was prepared using a model QUEST III. The researchers drew attention to the fact that the inflow of funds to the Member States takes place after a considerable delay, which makes the transfers during the first years by several times lower than those obtained in the last years of implementation of the financial perspective (Table 2.2).

Table 2.2. Expected level of the EU Cohesion Policy 2007-2013 for the new MS (level of funding as a percentage of GDP of these countries)

| MS | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bulgaria | 0.50 | 0.65 | 0.80 | 1.89 | 1.81 | 1.76 | 1.71 | 2.67 | 2.55 | 3.06 |
| Cyprus | 0.08 | 0.12 | 0.34 | 0.23 | 0.28 | 0.33 | 0.39 | 0.40 | 0.42 | 0.46 |
| Czech Republic | 0.29 | 0.73 | 1.04 | 1.46 | 2.00 | 2.12 | 2.22 | 2.34 | 2.28 | 2.37 |
| Estonia | 0.47 | 0.71 | 3.28 | 2.49 | 2.88 | 2.80 | 2.72 | 2.33 | 1.99 | 2.82 |
| Hungary | 0.54 | 0.80 | 2.06 | 2.52 | 3.13 | 3.26 | 3.38 | 2.52 | 1.48 | 3.67 |
| Lithuania | 0.52 | 0.72 | 4.06 | 2.02 | 2.15 | 2.87 | 3.51 | 3.27 | 3.39 | 2.57 |
| Latvia | 0.47 | 0.67 | 2.30 | 2.06 | 2.09 | 3.30 | 4.42 | 3.72 | 2.77 | 3.08 |
| Malta | 0.34 | 0.50 | 0.62 | 1.01 | 1.46 | 2.16 | 2.84 | 2.21 | 1.53 | 0.68 |
| Poland | 0.44 | 0.61 | 1.63 | 1.34 | 1.72 | 2.11 | 2.48 | 2.20 | 1.89 | 2.43 |
| Romania | 1.30 | 1.17 | 1.42 | 1.32 | 1.24 | 1.20 | 1.16 | 1.54 | 1.47 | 1.42 |
| Slovenia | 0.26 | 0.38 | 0.92 | 1.11 | 1.33 | 1.15 | 0.98 | 1.16 | 1.21 | 1.60 |
| Slovakia | 0.46 | 0.60 | 0.79 | 1.30 | 1.47 | 1.72 | 1.95 | 2.22 | 2.20 | 1.74 |

*Source: Own elaboration based on Varga, Veld (2011), tab. 2.*

The scale of the impact of support is dependent not only on the rate of transfers, but also on the structure of their spending. All the new countries of the EU allocated most of the funds for infrastructure projects, however, there are significant differences among them (Table 2.3). Very diverse is also the level of resources devoted to research and development as well as support of industry and services.

Table 2.3. Structure of disbursement of cohesion policy 2007-2013 in the new EU MS (in per cent)

| MS | Support for industry and services | Human resources | Infrastructure | R&D | Technical assistance |
|---|---|---|---|---|---|
| Bulgaria | 8.36 | 20.89 | 62.50 | 4.67 | 3.58 |
| Cyprus | 14.99 | 20.45 | 50.95 | 10.03 | 3.58 |
| Czech Republic | 8.39 | 15.56 | 61.09 | 11.58 | 3.38 |
| Estonia | 8.04 | 10.87 | 62.31 | 16.75 | 2.04 |
| Hungary | 13.18 | 15.12 | 61.92 | 5.91 | 3.87 |
| Lithuania | 8.06 | 13.45 | 62.23 | 13.26 | 3.00 |
| Latvia | 4.13 | 11.49 | 67.81 | 14.07 | 2.51 |
| Malta | 14.40 | 12.82 | 65.96 | 5.30 | 1.52 |
| Poland | 7.81 | 13.67 | 63.00 | 11.94 | 3.58 |
| Romania | 8.95 | 18.62 | 65.19 | 3.65 | 3.59 |
| Słovenia | 9.01 | 15.82 | 54.42 | 18.65 | 2.09 |
| Słovakia | 5.43 | 11.75 | 70.05 | 9.32 | 3.44 |

*Source: Own elaboration based on Varga, Veld (2011), tab. 2.*

Estimated long-term impact of cohesion policy implemented in the 2007-2013 financial perspective to each new EU countries is very diverse (Table 2.4). In the case

of Poland, the impact of EU measures on the level of GDP and the multiplier is higher than the average in the analysed group of countries.

Table 2.4. The long-term impact of the implementation of cohesion policy 2007-2013 GDP and the multiplier in the new MS and the EU (in per cent)

| MS | GDP 2016 | GDP 2025 | Cumulative multiplier 2016 | Cumulative multiplier 2025 |
|---|---|---|---|---|
| Bulgaria | 3.3 | 3.0 | 0.8 | 2.3 |
| Cyprus | 0.6 | 0.5 | 0.8 | 2.3 |
| Czech Repubic | 2.7 | 2.6 | 0.5 | 1.9 |
| Estonia | 3.7 | 2.8 | 0.8 | 2.0 |
| Hungary | 4.8 | 4.1 | 0.8 | 2.4 |
| Lithuania | 5.0 | 4.8 | 0.7 | 2.2 |
| Latvia | 4.1 | 4.0 | 0.9 | 2.6 |
| Malta | 1.6 | 1.2 | 0.6 | 1.5 |
| Poland | 4.3 | 4.3 | 1.0 | 3.2 |
| Romania | 2.7 | 2.2 | 1.0 | 2.6 |
| Slovenia | 3.5 | 3.5 | 0.8 | 2.2 |
| Slovakia | 1.8 | 1.5 | 1.1 | 3.3 |
| Average | 3.6 | 3.4 | 0.9 | 2.6 |
| Donors | –0.2 | –0.1 | — | — |
| EU-27 | 0.2 | 0.2 | — | — |

*Source: Own elaboration based on Varga, Veld (2011), tab. 2.*

Table 2.5 shows in detail the impact of cohesion policy 2007-2013 for the main economic indicators in Poland. It is worth noting that, contrary to the expectations, the EU measures will increase the level of investment in the period 2007-2013, a negative impact of EU support in the amount of investment is expected. This may mean that there is a strong crowding out effect that pushes the public transfers and private resources that could be spent on investments to other purposes.

Table 2.5. Potential impact of the EU cohesion policy in the 2007-2013 period on selected macroeconomic indicators in Poland (in per cent)

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP | 0.02 | 0.09 | 0.66 | 0.72 | 1.18 | 1.72 | 2.40 | 2.88 | 3.34 | 4.31 | 3.67 | 3.94 | 4.03 | 4.09 | 4.14 | 4.19 | 4.23 | 4.26 | 4.28 |
| Employment | 0.04 | 0.18 | 0.56 | 0.50 | 0.71 | 1.03 | 1.37 | 1.49 | 1.67 | 2.03 | 1.23 | 1.26 | 1.42 | 1.55 | 1.66 | 1.76 | 1.85 | 1.92 | 1.98 |
| Low skilled | 0.18 | 0.55 | 1.15 | 1.35 | 1.79 | 2.34 | 2.88 | 3.16 | 3.43 | 3.72 | 2.95 | 2.92 | 3.09 | 3.31 | 3.54 | 3.76 | 3.96 | 4.14 | 4.28 |
| Medium skilled | 0.01 | 0.13 | 0.50 | 0.43 | 0.62 | 0.93 | 1.26 | 1.38 | 1.56 | 1.93 | 1.12 | 1.16 | 1.31 | 1.43 | 1.53 | 1.62 | 1.70 | 1.77 | 1.82 |
| High skilled | 0.19 | 0.26 | 0.46 | 0.20 | 0.25 | 0.40 | 0.55 | 0.48 | 0.53 | 0.88 | 0.07 | 0.24 | 0.42 | 0.50 | 0.54 | 0.57 | 0.59 | 0.62 | 0.64 |
| Consumption | 1.32 | 1.99 | 2.16 | 2.36 | 2.66 | 3.00 | 3.42 | 3.95 | 4.50 | 5.05 | 5.60 | 5.98 | 6.09 | 6.14 | 6.18 | 6.21 | 6.23 | 6.24 | 6.24 |
| Investment | 0.11 | 0.36 | 0.57 | 0.63 | 0.57 | 0.43 | 0.17 | 0.24 | 0.73 | 1.28 | 1.90 | 2.33 | 2.57 | 2.74 | 2.87 | 2.99 | 3.09 | 3.19 | 3.28 |
| Exports | 0.64 | 0.82 | 0.84 | 0.70 | 0.60 | 0.45 | 0.22 | 0.12 | 0.43 | 0.76 | 1.13 | 1.20 | 1.23 | 1.26 | 1.28 | 1.31 | 1.33 | 1.34 | 1.36 |
| Imports | 3.32 | 4.73 | 5.70 | 5.13 | 5.15 | 5.13 | 4.83 | 3.80 | 2.86 | 2.43 | 0.37 | 0.52 | 0.43 | 0.44 | 0.49 | 0.54 | 0.58 | 0.62 | 0.65 |
| Real wages | 0.06 | 0.13 | 0.10 | 0.37 | 0.54 | 0.72 | 0.93 | 1.26 | 1.53 | 1.60 | 2.18 | 2.20 | 2.12 | 2.05 | 1.98 | 1.91 | 1.86 | 1.81 | 1.77 |
| Patents | 0.23 | 0.95 | 1.86 | 2.80 | 3.70 | 4.47 | 5.06 | 5.45 | 5.64 | 5.64 | 5.57 | 5.50 | 5.44 | 5.40 | 5.38 | 5.37 | 5.38 | 5.39 | 5.41 |
| Consumer price level | 0.03 | 0.51 | 1.17 | 1.62 | 2.14 | 2.67 | 3.11 | 3.30 | 3.33 | 3.28 | 2.49 | 2.00 | 1.60 | 1.21 | 0.83 | 0.46 | 0.10 | 0.25 | 0.58 |
| *Terms of trade* | 1.31 | 1.66 | 1.73 | 1.53 | 1.36 | 1.09 | 0.66 | 0.11 | 0.43 | 1.05 | 1.68 | 1.83 | 1.88 | 1.93 | 1.97 | 2.01 | 2.04 | 2.07 | 2.09 |
| Exchange rate: dollar | 1.11 | 0.94 | 0.46 | 0.20 | 0.85 | 1.57 | 2.34 | 3.05 | 3.58 | 4.00 | 4.10 | 3.70 | 3.31 | 2.94 | 2.59 | 2.24 | 1.91 | 1.58 | 1.26 |
| Exchange rate: euro | 1.03 | 0.87 | 0.42 | 0.19 | 0.76 | 1.41 | 2.11 | 2.76 | 3.23 | 3.61 | 3.69 | 3.32 | 2.94 | 2.59 | 2.25 | 1.93 | 1.61 | 1.30 | 1.00 |
| Nominal interest rate | 0.04 | 0.42 | 0.75 | 0.72 | 0.79 | 0.85 | 0.83 | 0.63 | 0.43 | 0.31 | 0.39 | 0.45 | 0.42 | 0.40 | 0.39 | 0.38 | 0.37 | 0.36 | 0.35 |
| Inflation | 0.50 | 0.59 | 0.63 | 0.36 | 0.50 | 0.44 | 0.27 | 0.02 | 0.09 | 0.37 | 0.99 | 0.40 | 0.39 | 0.39 | 0.38 | 0.37 | 0.36 | 0.34 | 0.33 |
| Public debt (as % PKB) | 0.20 | 0.65 | 1.26 | 1.42 | 1.81 | 2.28 | 2.80 | 3.18 | 3.59 | 4.26 | 3.94 | 4.23 | 4.45 | 4.56 | 4.60 | 4.56 | 4.47 | 4.33 | 4.14 |
| Budget deficit (as % PKB) | 0.20 | 0.12 | 0.06 | 0.01 | 0.06 | 0.12 | 0.21 | 0.30 | 0.42 | 0.51 | 0.49 | 0.55 | 0.47 | 0.39 | 0.31 | 0.25 | 0.18 | 0.13 | 0.08 |
| Trade balance (as % PKB) | 1.04 | 1.52 | 1.87 | 1.67 | 1.70 | 1.73 | 1.68 | 1.37 | 1.10 | 1.05 | 0.08 | 0.05 | 0.10 | 0.10 | 0.09 | 0.07 | 0.06 | 0.05 | 0.04 |

Negative values are marketed in red.

*Source: Varga 2010, tab. 14.*

It should, however, be noted that these results do not only represent the maximum potential effect of the use of support funds, but they are also very sensitive to any changes in the external conditions that can very negatively affect the final effect of public spending. In assessing the impact of the policy carried out by the same model before the outbreak of the global crisis, the assessed impact of the EU funds on the Polish economy was more optimistic (Table 2.6).

Table 2.6. Changing the basic macroeconomic indicators under the 2007-2013 cohesion policy in Poland

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| GDP | 0.39 | 0.96 | 1.64 | 2.02 | 2.44 | 2.71 | 3.19 | 4.55 | 5.65 | 4.71 |
| Private consumption | 1.81 | 2.05 | 2.37 | 2.62 | 2.84 | 3.02 | 3.30 | 3.91 | 4.60 | 4.45 |
| Private investment | -3.51 | -3.78 | -3.61 | -3.21 | -2.83 | -2.29 | -1.27 | 0.41 | 2.24 | 4.75 |
| Exports | -0.70 | -0.83 | -0.28 | 0.26 | 0.80 | 1.25 | 1.72 | 2.53 | 3.58 | 3.70 |
| Imports | 0.11 | 1.08 | 1.70 | 2.05 | 2.48 | 2.79 | 3.37 | 4.91 | 6.28 | 5.45 |
| Employment | 0.13 | 0.08 | 0.10 | 0.09 | 0.11 | 0.10 | 0.10 | 0.18 | 0.28 | 0.22 |
| Real wages | 0.39 | 1.01 | 1.62 | 2.06 | 2.43 | 2.73 | 3.26 | 4.48 | 5.26 | 4.69 |
| Price level | 0.17 | 0.53 | 1.11 | 1.70 | 2.29 | 2.77 | 3.32 | 4.22 | 5.49 | 5.81 |
| Consumer price level | -0.14 | 0.28 | 0.97 | 1.68 | 2.39 | 2.98 | 3.64 | 4.72 | 6.24 | 6.61 |
| Exchange rate: dollar | -1.40 | -0.77 | 0.28 | 1.35 | 2.43 | 3.32 | 4.33 | 5.99 | 8.36 | 9.16 |
| Exchange rate: euro | -1.10 | -0.39 | 0.71 | 1.79 | 2.88 | 3.77 | 4.77 | 6.34 | 8.49 | 8.85 |
| Real effecitive exchange rate | -1.35 | -1.07 | -0.61 | -0.14 | 0.33 | 0.71 | 1.13 | 1.79 | 2.72 | 2.99 |
| Unemployment rate | -0.11 | -0.07 | -0.09 | -0.08 | -0.10 | -0.09 | -0.09 | -0.16 | -0.25 | -0.19 |
| Trade balance to GDP | -0.31 | -0.75 | -0.79 | -0.72 | -0.69 | -0.63 | -0.68 | -0.97 | -1.10 | -0.72 |

*Source: Veld (2007), tab. 4 Poland.*

### 3. Evaluation of the impact of the CAP on the development of Poland and the situation of Polish agriculture

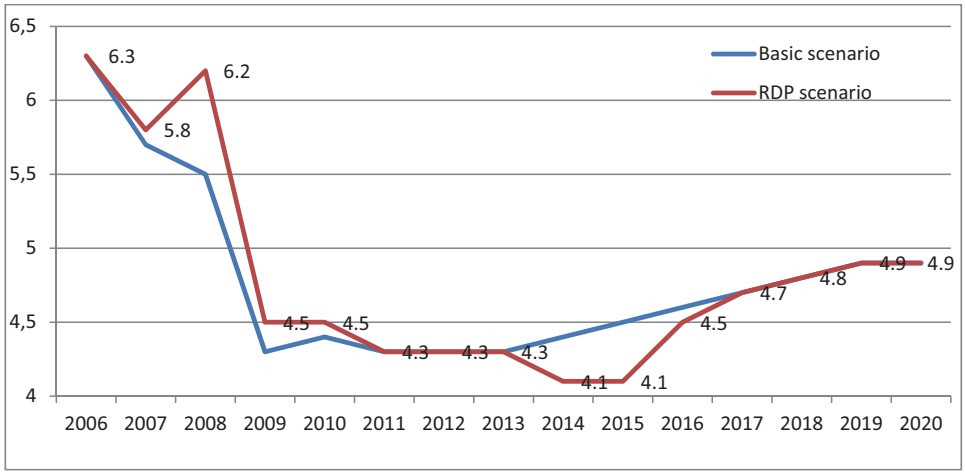
In the RDP 2007-2013 it is stated that the implementation of this programme will have a positive effect on the increase in the level of three key macroeconomic indicators in assessing the impact of EU funds on the Polish economy. Based on the assessment prepared using HERMIN, it is assumed that the implementation of the RDP 2007-2013 will account for:

1. 0.41% of GDP by 2015, the GDP growth in this period was projected at 50.1% compared to the base value of 2006, the share of the RDP 2007-2013 in economic growth was estimated at 0.8%;
2. 21.3% of jobs created until 2015, with projected 372,000;
3. 0.49% of the increase in labour productivity, the total increase in the analysed period was to reach 47.8%, i.e. the proportion of RDP 2007-2013 in growth of labour productivity was to be about 1%.

As it has already been mentioned, the levels of these indicators were estimated with HERMIN model, which is a model designed specifically to assess the impact of

EU funds on the development of Member States and regions benefiting from such support. Assessment of the projected impact of the implementation of the RDP 2007--2013 on the GDP growth in Poland shows a slight impact of the program on the value of this indicator (Figure 3.1).

Figure 3.1 . GDP growth rate in the baseline scenario and scenario of the RDP 2007-2013 in HERMIN

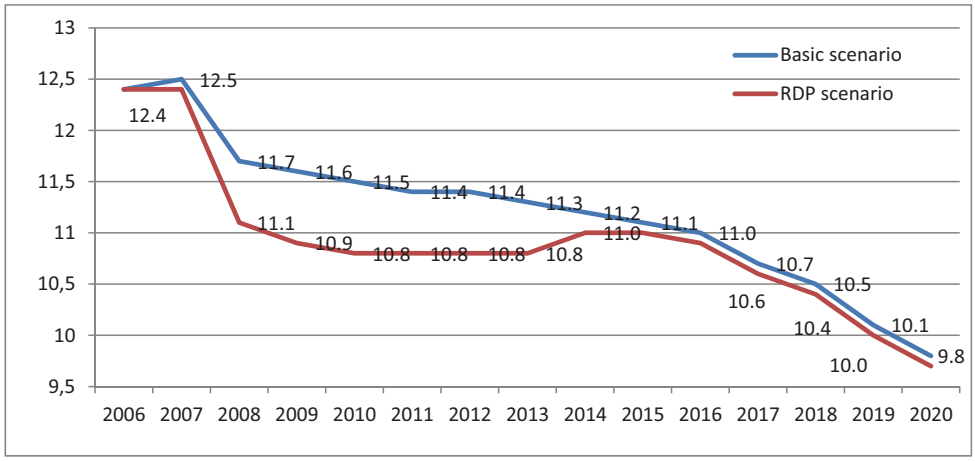



*Source: Zaleski et al. 2007, fig. 4.1.*

In the model fixed prices in 2000 were applied. Assessment of the impact of the RDP indicates that the rate of growth of GDP with the implementation of the RDP 2007-2013 should be by the year 2010 higher than without the implementation of this programme. Over the next three years the rate of growth of the Polish economy would be the same for both scenarios considered. In the years 2014-2016 the growth rate of the RDP scenario would be lower than without this element of support. In the following years up to 2020 the GDP growth rate would be the same for both cases studied. According to the model HERMIN, as in the case of differences in the shaping the growth rate of GDP in both scenarios would look like the relationship between the size of the unemployment rate in the studied cases (Figure 3.2).

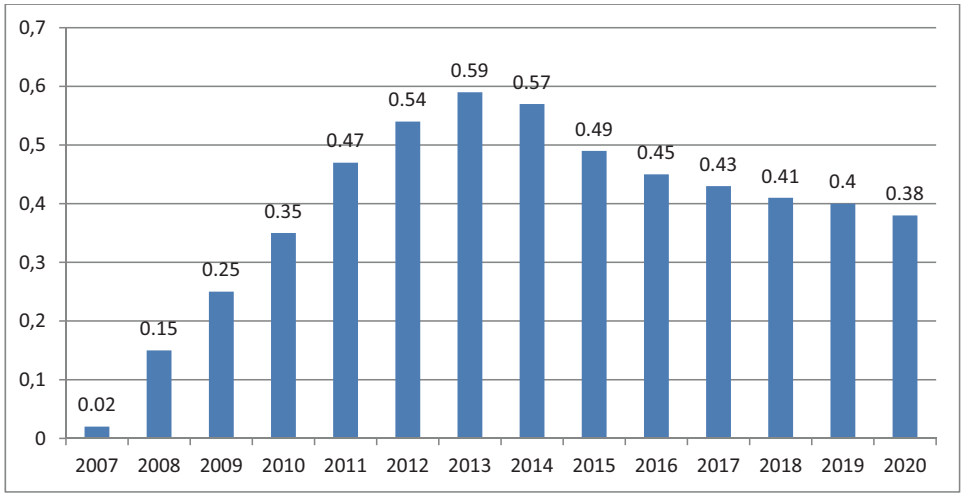
Similarly, as with the other macroeconomic indicators also in the case of productivity it is expected that the implementation of the RDP 2007-2013 will have a varied impact on this indicator in subsequent years. The increase in productivity measured as GDP per employee, compared to the baseline scenario would be higher in each year (Figure 3.3). The highest difference was expected in 2013, when the rate was to be about 0.59 percentage points higher than in the baseline scenario.

Figure 3.2. Unemployment rate in the baseline scenario and scenario with the RDP 2007-2013 in HERMIN




*Source: Zaleski et al. 2007, fig. 4.3.*

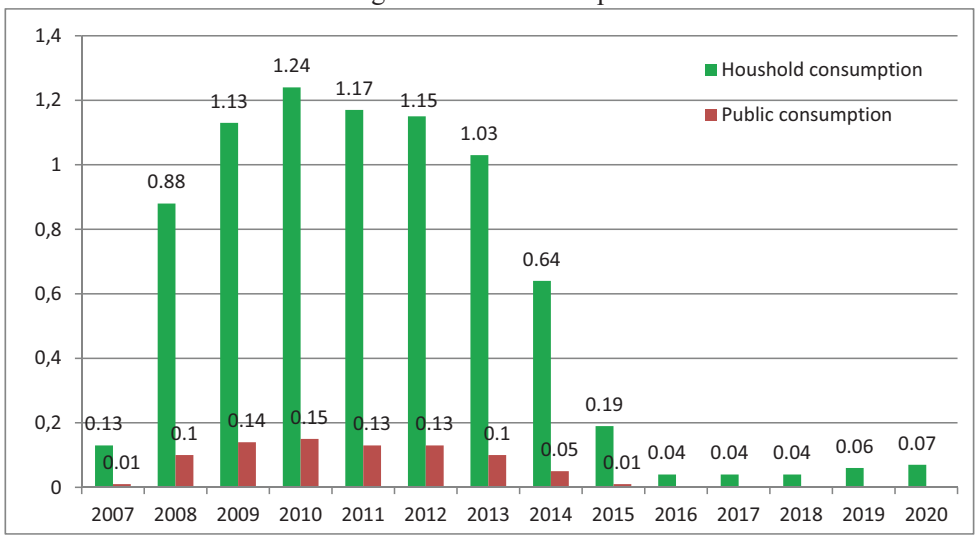
Figure 3.3. Impact of the RDP 2007-2013 the level of productivity




*Source: Zaleski et al. 2007, fig. 4.9.*

The HERMIN also determined how the implementation of the RDP 2007-2013 could influence the level of household consumption and government consumption relative to the baseline scenario (Figure 3.4). The biggest impact of the programme on the level of household consumption was expected in 2010, when it was to be 1.24 pp higher than in the baseline scenario. The impact of the RDP 2007-2013 on public consumption was supposed to be much smaller, but in 2010 it was to achieve the highest level compared to the one projected in the baseline scenario.

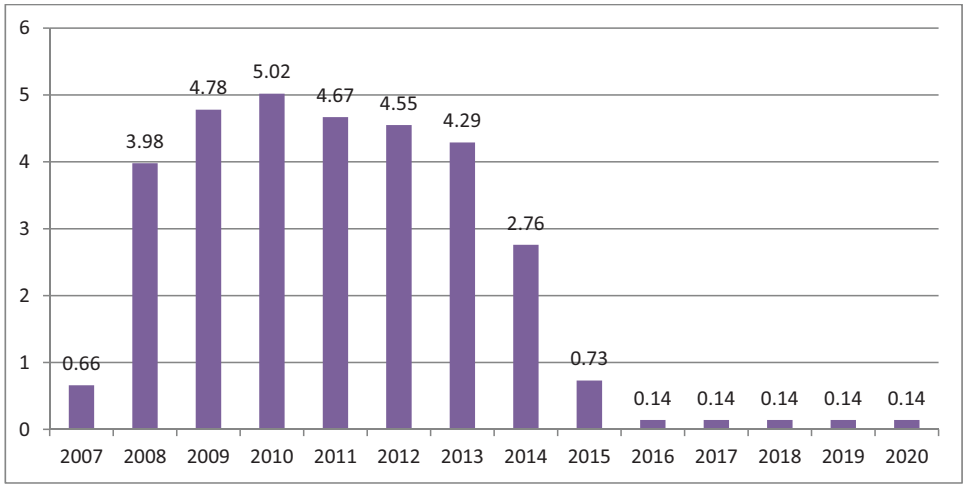
Figure 3.4. Impact of the RDP 2007-2013 the level of household and government consumption




*Source: Zaleski et al. 2007, fig. 4.10 and 4.11.*

Estimated on the basis of HERMIN impact of implementation of the RDP 2007-2013 on the level of investment would be greater than in the case of consumption (Figure 3.5). Again, the greatest impact of the RDP 2007-2013 was to be recorded in 2010.

Figure 3.5. Impact of the RDP 2007-2013 on the level of investment




*Source: Zaleski et al. 2007, fig. 4.12.*

Previous studies on the impact of the CAP on both Poland's development and the situation of the Polish agriculture are fragmentary referring to the tangible effects or are based on surveys that are not a good tool to estimate quantitative changes. Only a few studies used modelling based on general equilibrium models and an assessment of support during the given period and/or in respect to certain instruments.

An impact assessment of Rural Development Plan 2004-2006 and the Sectoral Operational Programme for agriculture and food economy was made by K. Zawalińska. The author applied a general equilibrium model called RegPOL examining the impact of support in terms of both national and regional level. Instruments of both of the programs were divided into four categories:

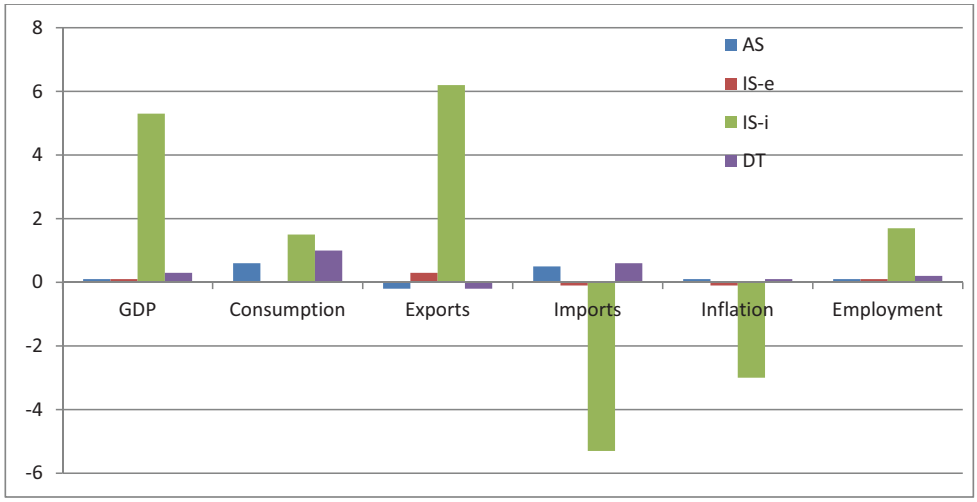
1. Direct transfers – early retirement, support for semi-subsistence farms, afforestation of agricultural land, support for producer groups, setting up of young farmers;
2. Area subsidies – support for LFAs , agri-environmental programs;
3. Investment subsidies for infrastructure – compliance with the EU standards, in-investment in agricultural holdings, improvement of processing and marketing, restoring forestry production potential, land consolidation, village renewal and cultural heritage, diversification into non-agricultural activities, water management, infrastructure development and technical support;
4. Investment subsidies for education – training, agricultural advisory, LEADER+.

The study was based on data on the absorption of support drawn at the end of 2007. The results show the percentage of the cumulative impact of implemented support for the analysed variables, the effect is expected within 5-8 years after the implementation of support.

As for the impact on the Polish economy, the largest effect was a result of subsidies for infrastructure investments and the smallest in the case of area subsidies. The subsidies for education had little impact on GDP, but they had a significant influence on the other variables analysed (Figure 3.6).

These effects were varied in the different provinces. However, it should also be kept in mind that the level of support measured by the share of GDP was different in different regions (Table 3.1).

Figure 3.6. Effectiveness of the instruments of rural development policy 2004-2006




AS – area subsidies; IS-e – investment subsidies for education; IS-i – investment subsidies for infrastructure; TB – direct transfers.

*Source: K. Zawalińska (2009), fig. 4.2.*

Table 3.1. The level of GDP and support for rural development in different provinces in 2004-2006

| Region | Average annual GDP in 2004-2006 | Support for rural development | Share* | Increase in GDP |
|---|---|---|---|---|
| | in million PLN | | in % | |
| Dolnośląskie | 75,080 | 594 | 0.8 | 2.6 |
| Kujawsko-pomorskie | 45,883 | 1,256 | 2.7 | 4.1 |
| Lubelskie | 37,823 | 1,398 | 3.7 | 3.4 |
| Lubuskie | 22,910 | 355 | 1.5 | 1.5 |
| Łódzkie | 59,977 | 1,228 | 2.0 | 2.4 |
| Małopolskie | 70,261 | 661 | 0.9 | 2.8 |
| Mazowieckie | 203,334 | 2,575 | 1.3 | 0.9 |
| Opolskie | 22,235 | 300 | 1.3 | 2.5 |
| Podkarpackie | 36,685 | 606 | 1.7 | 3.5 |
| Podlaskie | 22,518 | 1,420 | 6.3 | 7.8 |
| Pomorskie | 54,329 | 726 | 1.3 | 1.8 |
| Śląskie | 129,654 | 328 | 0.3 | 2.2 |
| Świętokrzyskie | 24,570 | 702 | 2.9 | 3.8 |
| Warmińsko-mazurskie | 27,715 | 999 | 3.6 | 4.9 |
| Wielkopolskie | 91,025 | 2,018 | 2.2 | 2.2 |
| Zachodniopomorskie | 39,715 | 570 | 1.4 | 1.7 |
| Poland | 963,714 | 15,736 | 1.6 | 5.8 |

*Source: Own elaboration based on K. Zawalińska (2009), tab. 4.2 and fig. 4.3.*

In 2011 the Institute for Structural Research conducted an impact assessment of the implementation of the Rural Development Programme 2007-2013 (RDP 2007--2013). Model EUImpactMOD III was applied, which is a model of the class of dynamic stochastic general equilibrium models. This model has a regional focus, enabling the identification of the impact of support on the development of various Polish regions. Support offered under RDP 2007-2013 was divided into three categories corresponding to the definitions commonly used in economics:

a) Transfers;

b) Investments;

c) Support of human resources.

Division of RDP 2007-2013 measures into these categories is presented in Table 3.2.

Table 3.2. Division of RDP 2007-2013 measures into intervention categories

| **TRANSFERS** |
|---|
| Early retirement |
| Participation of farmers in food quality schemes |
| Liabilities of the 2004-2006 for the measure 'Support for semi-subsistence farms' |
| Producer groups |
| Support for farming in mountainous areas and other areas less favoured areas (LFA) |
| Agri-environmantal measure |
| Afforestation of agricultural land and afforestation of non-agricultural land |
| Restoring forestry production potential damaged by natural disasters and introducing prevention instruments |
| Village renewal and development |
| **INVESTMENTS** |
| Setting up of young farmers |
| Modernisation of agricultural holdings |
| Adding value to agricultural and forestry production |
| Improving and developing infrastructure related to the development and adaptation of agriculture and forestry |
| Restoring agricultural production potential damaged by natural disasters and introducing appropriate prevention actions |
| Diversification into non-agricultural activities |
| Creation and development of micro-enterprises |
| Basic services for the economy and rural population |
| Implementation of the Local Development Strategy |
| Implementation of cooperation projects |
| **HUMAN RESOURCES** |
| Vocational training for persons employed in agriculture and forestry |
| Use of advisory services by farmers and forest owners |
| Information and promotion activities |
| Operation of the Local Action Group |

*Source: Own elaboration based on IBS 2011, tab. 1.*

Based on the data on the implementation of the RDP 2007-2013 by end of 2010 and changes in macroeconomic indicators, an estimate of the forecast impact of the programme on the scale of changes in the level of key macroeconomic indicators was made (Table 3.3). It seems that the planned economic growth and labour productivity increase will not be achieved. However, in the case of job creation study indicated a significant underestimation of the potential to achieve an increase in the number of jobs.

Table 3.3. Planned and forecast for 2015 of socio-economic indicators of the impact of the RDP 2007-2013

| Indicator | Target value of the indicator (according to RDP) | | Forcast value of the indicator (EUImpactMOD) | |
|---|---|---|---|---|
| | Total change | of which RDP | Total change | of which RDP |
| Economic growth | 50.1% | 0.41% | 42.8% | 1.6% |
| Creating jobs | 2.7% | 0.57% | 16.8% | 0.8% |
| Labour productivity | 47.8% | 0.49% | 22.8% | 0.4% |

*Source: IBS 2011, tab. 3.*

However, one must account for a high volatility of estimates related to the pace of RDP implementation and changes in the macroeconomic situation. Research based on EUImpactMOD III model was used to forecast the impact of the RDP 2007-2013 in two studies – in the mid-term evaluation of the RDP 2007-2013 conducted in 2010 and in the study of 2011. The results of both studies are shown in Table 3.4. The differences in both the changes in the overall economy and the role of the implementation of the RDP 2007-2013 are significant.

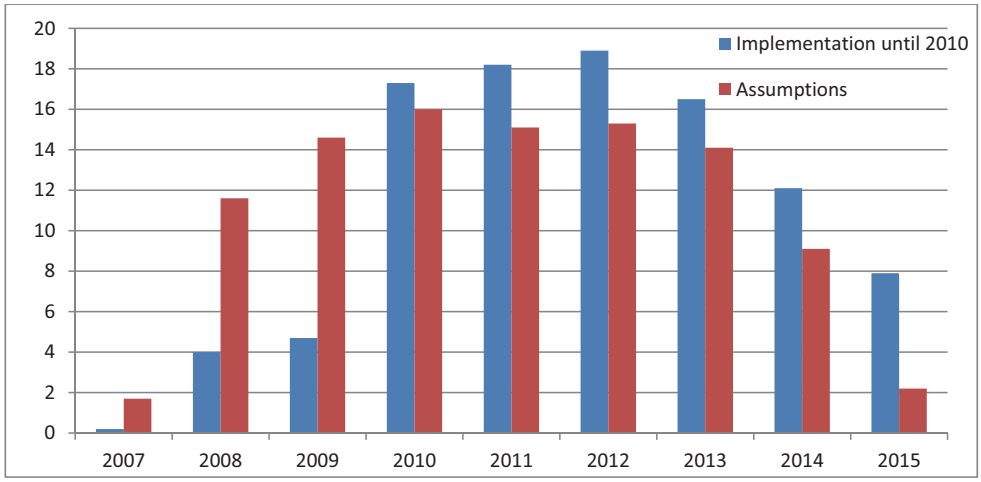
Table 3.4. Forecast for 2015 of the impact of the RDP 2007-2013 on socio-economic indicators estimated using the EUImpactMOD III model in 2010 and 2011

| Indicator | Forecast in 2010 indicator value | | Forecast in 2010 indicator value | |
|---|---|---|---|---|
| | Total change | of which RDP | Total change | of which RDP |
| Economic growth | 33.8% | 1.7% | 42.8% | 1.6% |
| Creating jobs | 18.5% | 1.5% | 16.8% | 0.8% |
| Labour productivity | 22.2% | 0.0% | 22.8% | 0.4% |

*Source: IBS 2011.*

It was also stated that the implementation of the RDP 2007-2013 will increase agricultural production. The projected increase in value added in agriculture is 2.6% in 2015 compared to the baseline scenario assuming no implementation. An interesting research problem, which was not a part of the IBS's study is the impact of the pace of programme's implementation on the Polish economy. The absorption of funds was lower than expected. According to the RDP 2007-2013 to the end of 2010 the expenditure was to reach almost 44% of the funds, and it was only 26% (Figure 3.7).

Figure 3.7. Absorption pace of the RDP 2007-2013




*Source: Own elaboration based on Zaleski et al. 2007 and IBS 2011.*

As the results of various types of research on the impact of EU funds on the development of Poland and Polish agriculture and rural areas, the actual role of these funds is difficult to unequivocal, quantitative determination. There is no doubt, however, that these measures stimulate quantitative and qualitative changes at the level of the whole economy and at the level of individual beneficiaries obtained support.

## 4. Analysis of the absorption rate of CAP support in the programming period 2007-2013

The absorption rate of funds by the EU Member States impacts the scale of the effects that can be achieved during the program period. Naturally, the faster support reaches the beneficiaries, the faster it is possible to obtain the expected direct results of the support and the faster multiplier effects can appear. Principles of transfer of CAP to the EU are very specific.

In the current programming period functioning of the European Agricultural Guarantee Fund is based on the Council Regulation (EC) No 79/2009, and in respect of the European Agricultural Fund for Rural Development support is implemented on the basis of the Council Regulation (EC) No 1698 /2005.

### 4.1. Absorption of EAFRD support

The absorption rate of the EAFRD support is directly related to how fast calls for applications are launched and measures implemented within rural development programmes. It also depends on whether the measures are very popular among target groups and on the structure of the program itself, because individual measures are of different nature (one-time bonuses, reimbursement of expenses or periodic benefits paid regularly for several years).

The amount of funds assigned for the Member States in the 2007-2013 programming period is a result of the capacity of the Community budget and the assessment of the development needs of rural areas in the EU regions. The total amount planned for rural development policy in this period was more than 88 billion (Table 4.1). Poland received the highest amount – more than 13 billion euro.

The planned allocation of funds for each year was marked by a slight variation of annual amounts both at the EU level and for individual countries. The exception was Bulgaria and Romania, where the increase in funds allocated to the tasks of rural development in 2007 was by more than one third lower than in 2013. Such a timetable for the implementation of programmes co-financed by the EAFRD in these countries due to the fact that in 2007 these two countries have accessed the Community and for the first time they had to deal with the implementation of rural development programs, although, like Poland and other new EU members, both of these countries have benefited from the pre-accession program SAPARD. Also in the case of Greece, the schedule of transfers differed from the EU average.

In the first year of implementation of the EU's financial perspectives for the period 2007-2013 the absorption of EAFRD budget did not exceed 50% (Table 4.2), which was directly related to the late adoption of the regulation on the functioning of the rural development policy, which resulted in an extension of the work on the final version of the national or regional rural development programmes. Therefore, most of the EAFRD support transferred in 2007 to the Member States was in the form of advances, and hardly any funds were transferred as reimbursement of expenses already incurred by EU countries.

In 2007 the new members of the Community, namely Bulgaria and Romania received no transfers of the EAFRD, like Denmark, Latvia and Malta. Whereas among the countries that gained EU membership in 2004, only Slovenia and Hungary received some funds on the basis of expenditure already incurred in the implementation of rural development programs, and not merely an advance on future expenses.

Table 4.1. Allocation of funds for the years 2007-2013 EAFRD (in euros )

| MS | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2007-2013 |
|---|---|---|---|---|---|---|---|---|
| Austria | 628154,610 | 594,709,669 | 550,452,057 | 557,557,505 | 541,670,574 | 527,868,629 | 511,056,948 | 3,911,469,992 |
| Belgium | 63,991,299 | 63,957,784 | 60,238,083 | 59,683,509 | 59,267,519 | 56,995,480 | 54,476,632 | 418,610,306 |
| Bulgaria | 244,055,793 | 337,144,772 | 437,343,751 | 399,098,664 | 398,058,913 | 397,696,922 | 395,699,781 | 2,609,098,596 |
| Cyprus | 26,704,860 | 24,772,842 | 22,749,762 | 23,071,507 | 22,402,714 | 21,783,947 | 21,037,942 | 162,523,574 |
| Czech Republic | 396,623,321 | 392,638,892 | 388,036,387 | 400,932,774 | 406,640,636 | 412,672,094 | 417,962,250 | 2,815,506,354 |
| Denmark | 62,592,573 | 66,344,571 | 63,771,254 | 64,334,762 | 63,431,467 | 62,597,618 | 61,588,551 | 444,660,796 |
| Estonia | 95,608,462 | 95,569,377 | 95,696,594 | 100,929,353 | 104,639,066 | 108,913,401 | 113,302,602 | 714,658,855 |
| Finland | 335,121,543 | 316,143,440 | 292,385,407 | 296,367,134 | 287,790,092 | 280,508,238 | 271,617,053 | 2,079,932,907 |
| France | 931,041,833 | 942,359,146 | 898,672,939 | 909,225,155 | 933,778,147 | 921,205,557 | 905,682,332 | 6,441,965,109 |
| Germany | 1,184,995,564 | 1,186,941,705 | 1,147,425,574 | 1,156,018,553 | 1,159,359,200 | 1,146,661,509 | 1,131,114,950 | 8,112,517,055 |
| Greece | 461,376,206 | 463,470,078 | 453,393,090 | 452,018,509 | 631,768,186 | 626,030,398 | 619,247,957 | 3,707,304,424 |
| Hungary | 570,811,818 | 537,525,661 | 498,635,432 | 509,252,494 | 547,603,625 | 563,304,619 | 578,709,743 | 3,805,843,392 |
| Ireland | 373,683,516 | 355,014,220 | 329,171,422 | 333,372,252 | 324,698,528 | 316,771,063 | 307,203,589 | 2,339,914,590 |
| Italy | 1,142,143,461 | 1,135,428,298 | 1,101,390,921 | 1,116,626,236 | 1,271,659,589 | 1,266,602,382 | 1,258,158,996 | 8,292,009,883 |
| Latvia | 152,867,493 | 147,768,241 | 142,542,483 | 147,766,381 | 148,781,700 | 150,188,774 | 151,198,432 | 1,041,113,504 |
| Lithuania | 260,974,835 | 248,836,020 | 236,928,998 | 244,741,536 | 248,002,433 | 250,278,098 | 253,598,173 | 1,743,360,093 |
| Luxembourg | 14,421,997 | 13,661,411 | 12,655,487 | 12,818,190 | 12,487,289 | 12,181,368 | 11,812,084 | 90,037,826 |
| Malta | 12,434,359 | 11,527,788 | 10,656,597 | 10,544,212 | 10,347,884 | 10,459,190 | 10,663,325 | 76,633,355 |
| Netherlands | 70,536,869 | 72,638,338 | 69,791,337 | 70,515,293 | 68,706,648 | 67,782,449 | 66,550,233 | 486,521,167 |
| Poland | 1,989,717,841 | 1,932,933,351 | 1,872,739,817 | 1,866,782,838 | 1,860,573,543 | 1,857,244,519 | 1,850,046,247 | 13,230,038,156 |
| Portugal | 562,210,832 | 562,491,944 | 551,196,824 | 559,018,566 | 565,142,601 | 565,192,105 | 564,072,156 | 3,929,325,028 |
| Romania | 741,659,914 | 1,023,077,697 | 1,319,261,544 | 1,236,160,665 | 1,234,244,648 | 1,235,537,011 | 1,232,563,266 | 8,022,504,745 |
| Slovakia | 303,163,265 | 286,531,906 | 268,049,256 | 256,310,239 | 263,028,387 | 275,025,447 | 317,309,578 | 1,969,418,078 |
| Slovenia | 149,549,387 | 139,868,094 | 129,728,049 | 128,304,946 | 123,026,091 | 117,808,866 | 111,981,296 | 900,266,729 |
| Spain | 1,012,456,383 | 1,030,880,527 | 1,006,845,141 | 1,013,903,294 | 1,057,772,000 | 1,050,937,191 | 1,041,123,263 | 7,213,917,799 |
| Sweden | 292,133,703 | 277,225,207 | 256,996,031 | 260,397,463 | 252,975,513 | 246,760,755 | 239,159,282 | 1,825,647,954 |
| UK | 263,996,373 | 283,001,582 | 274,582,271 | 276,600,084 | 273,334,332 | 270,695,626 | 267,364,152 | 1,909,574,420 |
| EU | 12,343,028,110 | 12,542,462,561 | 12,491,336,508 | 12,462,352,114 | 12,871,191,325 | 12,819,703,256 | 12,764,300,813 | 88,294,374,687 |

*Source: EC, C(2007)2274.*

Table 4.2. Level of funds transferred to Member States from EAFRD budget for 2007 as a percentage of funds allocated to them*

| MS | 4q 2006 | 2q 2007 | 3q 2007 | Advances | Total |
|---|---|---|---|---|---|
| Austria | 0.0 | 0.0 | 12.7 | 43.6 | 56.2 |
| Belgium | 0.0 | 0.0 | 60.4 | 25.7 | 86.1 |
| Bulgaria | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cyprus | 0.0 | 0.0 | 0.0 | 42.6 | 42.6 |
| Czech Republic | 0.0 | 0.0 | 0.0 | 49.7 | 49.7 |
| Denmark | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Estonia | 0.0 | 0.0 | 0.0 | 26.2 | 26.2 |
| Finland | 2.0 | 0.0 | 62.5 | 34.6 | 99.2 |
| France | 0.1 | 23.4 | 35.8 | 38.6 | 97.9 |
| Germany | 3.2 | 0.0 | 28.5 | 36.8 | 68.6 |
| Greece | 0.0 | 0.0 | 42.1 | 28.1 | 70.2 |
| Hungary | 0.0 | 0.0 | 0.3 | 46.7 | 46.9 |
| Ireland | 33.7 | 0.0 | 44.4 | 21.9 | 100.0 |
| Italy | 0.0 | 0.0 | 14.9 | 24.2 | 39.0 |
| Latvia | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lithuania | 0.0 | 0.0 | 0.0 | 46.8 | 46.8 |
| Luxembourg | 0.0 | 0.0 | 76.8 | 23.2 | 100.0 |
| Malta | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Netherlands | 0.3 | 21.3 | 4.2 | 48.3 | 74.1 |
| Poland | 0.0 | 0.0 | 0.0 | 46.5 | 46.5 |
| Portugal | 0.0 | 0.0 | 16.1 | 23.3 | 39.4 |
| Romania | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Slovakia | 0.0 | 0.0 | 0.0 | 22.7 | 22.7 |
| Slovenia | 0.0 | 0.0 | 20.1 | 42.1 | 62.2 |
| Spain | 0.0 | 0.0 | 0.4 | 0.4 | 0.8 |
| Sweden | 22.2 | 7.3 | 31.9 | 38.5 | 100.0 |
| UK | 10.5 | 0.0 | 35.8 | 19.0 | 65.3 |
| EU | 2.1 | 2.1 | 15.0 | 30.0 | 49.3 |

* rounded to 0.1.

*Source: Own elaboration based on: COM(2008)589 and C(2007)2274.*

In 2008 advances continued to be the largest part of the funds transferred to the Member States of the EAFRD budget (Table 4.3). Data on the rate of obtaining funds for rural development policy in 2008 shows that there is no close correlation between the speed of implementation of the programs co-financed by the EAFRD and experience the Member States in implementing them. The differences should rather be searched for in the structure of the adopted programmes, and especially the scale of the funds allocated for investment and other activities.

Table 4.3. Level of funds transferred to MS from EAFRD budget in 2008 as a percentage of funds allocated to them*

| MS | 4q 2006 | 3q 2007 | 4q 2007 | 1q 2008 | 2q 2008 | 3q 2008 | Advances | Total |
|---|---|---|---|---|---|---|---|---|
| Austria | 0.0 | 0.0 | 42.7 | 1.6 | 3.5 | 5.4 | 0.0 | 53.2 |
| Belgium | 0.0 | 0.0 | 10.8 | 5.1 | 18.5 | 32.2 | 17.7 | 84.3 |
| Bulgaria | 0.0 | 0.0 | 0.0 | 5.4 | 1.6 | 0.1 | 22.1 | 29.2 |
| Cyprus | 0.0 | 0.0 | 7.1 | 5.6 | 4.5 | 8.9 | 0.0 | 26.1 |
| Czech Republic | 0.0 | 0.0 | 13.9 | 0.5 | 15.6 | 5.9 | 0.0 | 35.9 |
| Denmark | 1.4 | 0.0 | 17.6 | 12.1 | 4.6 | 4.6 | 16.3 | 56.5 |
| Estonia | 0.0 | 0.0 | 1.1 | 4.3 | 2.0 | 7.1 | 15.1 | 29.5 |
| Finland | 0.0 | 0.0 | 2.4 | 0.9 | 0.7 | 64.3 | 9.2 | 77.6 |
| France | 0.0 | 0.0 | 23.5 | 7.8 | 13.0 | 35.5 | 9.3 | 89.1 |
| Germany | 0.0 | 1.0 | 17.1 | 3.9 | 3.3 | 17.6 | 8.4 | 51.4 |
| Greece | 0.0 | 0.0 | 3.8 | 2.0 | 9.2 | 22.3 | 21.6 | 58.8 |
| Hungary | 0.0 | 0.0 | 6.3 | 2.0 | 4.1 | 5.3 | 0.0 | 17.7 |
| Ireland | 0.0 | 9.1 | 20.3 | 12.9 | 12.5 | 22.1 | 23.1 | 100.0 |
| Italy | 0.0 | 0.1 | 8.8 | 1.1 | 1.7 | 4.5 | 13.2 | 29.4 |
| Latvia | 0.0 | 0.0 | 0.0 | 2.8 | 5.3 | 3.1 | 16.1 | 27.2 |
| Lithuania | 0.0 | 0.0 | 5.7 | 2.1 | 5.1 | 2.8 | 0.0 | 15.7 |
| Luxembourg | 0.0 | 0.0 | 15.5 | 6.5 | 36.6 | 6.8 | 21.7 | 87.1 |
| Malta | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.7 | 14.7 |
| Netherlands | 0.0 | 0.0 | 2.9 | 12.2 | 5.2 | 5.2 | 0.0 | 25.5 |
| Poland | 0.0 | 0.0 | 0.9 | 13.1 | 10.2 | 4.0 | 0.0 | 28.3 |
| Portugal | 0.0 | 0.0 | 2.9 | 12.5 | 4.0 | 8.0 | 15.5 | 42.9 |
| Romania | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 29.7 | 29.7 |
| Slovakia | 0.0 | 0.0 | 13.4 | 4.7 | 0.6 | 0.1 | 13.2 | 32.0 |
| Slovenia | 0.0 | 0.0 | 0.1 | 16.4 | 16.6 | 10.3 | 0.0 | 43.4 |
| Spain | 0.4 | 0.0 | 3.2 | 1.0 | 10.6 | 3.5 | 19.6 | 38.3 |
| Sweden | 0.0 | 0.0 | 15.3 | 9.8 | 6.0 | 31.9 | 5.5 | 68.4 |
| UK | 1.2 | 8.1 | 8.2 | 15.9 | 7.7 | 7.3 | 10.1 | 58.5 |
| EU | 0.1 | 0.6 | 8.1 | 5.4 | 6.2 | 8.6 | 11.8 | 40.9 |

*including the amount of previously unused resources and the budget for 2008; rounded to 0.1.
*Source: Own elaboration based on COM(2009)547.*

The amount that was submitted to the Member States of the EAFRD budget in 2009 was lower than a year before, which means that there was no acceleration in the implementation of rural development programmes (Table 4.4). Data relating to 2009 indicates that the pace of implementation was similar to that recorded in previous years.

Table 4.4. Level of funds transferred to MS from EAFRD budget in 2009 as a percentage of funds allocated to them*

| MS | 2q 2008 | 3q 2008 | 4q 2008 | 1q2009 | 2q 2009 | 3q 2009 | Total |
|---|---|---|---|---|---|---|---|
| Austria | 0.0 | 0.0 | 43.3 | 3.8 | 4.4 | 4.1 | 55.7 |
| Belgium | 0.0 | 3.6 | 14.0 | 9.8 | 28.3 | 22.7 | 78.3 |
| Bulgaria | 0.0 | 0.0 | 2.3 | 3.8 | 3.6 | 2.5 | 12.2 |
| Cyprus | 0.0 | 0.0 | 9.9 | 7.1 | 6.5 | 6.6 | 30.2 |
| Czech Republic | 0.0 | 0.0 | 14.0 | 14.1 | 10.4 | 4.7 | 43.1 |
| Denmark | 0.0 | 0.0 | 8.1 | 13.7 | 6.3 | 7.6 | 35.8 |
| Estonia | 0.0 | 0.0 | 11.0 | 19.2 | 6.3 | 7.1 | 43.6 |
| Finland | 0.0 | 0.0 | 3.5 | 1.6 | 2.1 | 43.0 | 50.2 |
| France | 0.0 | 0.0 | 24.5 | 10.2 | 8.6 | 30.7 | 74.0 |
| Germany | 0.0 | 0.5 | 19.1 | 5.3 | 4.3 | 18.2 | 47.4 |
| Greece | 0.0 | 0.0 | 2.8 | 4.1 | 9.7 | 7.2 | 23.9 |
| Hungary | 0.0 | 0.0 | 12.8 | 7.9 | 12.7 | 7.3 | 40.8 |
| Spain | 0.4 | 0.6 | 5.4 | 3.4 | 5.4 | 6.1 | 21.4 |
| Ireland | 0.0 | 27.5 | 21.7 | 16.1 | 14.5 | 15.1 | 94.9 |
| Italy | 0.0 | 0.0 | 2.8 | 1.3 | 2.6 | 6.0 | 12.7 |
| Lithuania | 0.0 | 0.0 | 5.9 | 8.4 | 15.1 | 13.4 | 42.9 |
| Luxembourg | 0.0 | 0.0 | 19.1 | 31.0 | 13.9 | 22.1 | 86.0 |
| Latvia | 0.0 | 0.0 | 4.3 | 5.8 | 8.8 | 2.9 | 21.7 |
| Malta | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.9 | 7.9 |
| Netherlands | 0.0 | 0.0 | 3.9 | 11.1 | 4.1 | 6.4 | 25.5 |
| Poland | 0.0 | 0.0 | 5.2 | 8.5 | 6.2 | 5.4 | 25.3 |
| Portugal | 0.0 | 0.0 | 8.7 | 1.1 | 0.1 | 11.3 | 21.1 |
| Romania | 0.0 | 0.0 | 3.9 | 2.2 | 5.1 | 8.9 | 20.0 |
| Slovakia | 0.0 | 0.0 | 18.2 | 5.1 | 10.4 | 11.7 | 45.4 |
| Slovenia | 0.0 | 0.0 | 11.3 | 7.8 | 15.6 | 6.1 | 40.7 |
| Spain | 0.4 | 0.6 | 5.4 | 3.4 | 5.4 | 6.1 | 21.4 |
| Sweden | 0.0 | 0.0 | 15.6 | 6.0 | 3.4 | 4.6 | 29.5 |
| UK | 0.0 | 0.0 | 10.8 | 9.4 | 5.4 | 7.5 | 33.0 |
| EU | 0.0 | 0.5 | 10.2 | 6.0 | 6.5 | 9.7 | 33.0 |

*including the amount of previously unused resources and the budget for 2009; rounded to 0.1.
*Source: Own elaboration based on COM(2010)497.*

In 2010, Member States received more than 11 billion (for comparison, in 2009, more than 8 billion) from the EAFRD budget, which represents a significant acceleration of the implementation of rural development programmes (Table 4.5). It should be noted that the acceleration is appeared virtually in all countries of the Community.

Table 4.5. Level of funds transferred to Member States from EAFRD budget for 2010 as a percentage of funds allocated to them*

| MS | 3q 2009 | 4q 2009 | 1q 2010 | 2q 2010 | 3q 2010 | Advances | Total |
|---|---|---|---|---|---|---|---|
| Austria | 0.0 | 44.5 | 4.3 | 4.4 | 3.7 | 0.8 | 57.6 |
| Belgium | 7.4 | 6.0 | 12.6 | 30.6 | 19.3 | 5.6 | 81.5 |
| Bulgaria | 0.0 | 0.8 | 7.5 | 8.3 | 4.2 | 0.2 | 20.9 |
| Cyprus | 0.0 | 9.5 | 6.7 | 4.9 | 5.3 | 0.2 | 26.6 |
| Czech Republic | 0.0 | 8.2 | 25.4 | 10.7 | 6.4 | 0.3 | 51.1 |
| Denmark | 0.0 | 12.4 | 6.1 | 4.6 | 5.1 | 5.1 | 33.2 |
| Estonia | 0.0 | 4.8 | 22.9 | 5.7 | 7.2 | 0.3 | 40.9 |
| Finland | 0.0 | 15.8 | 2.7 | 2.5 | 36.0 | 1.0 | 58.1 |
| France | 0.0 | 13.6 | 9.5 | 6.8 | 28.0 | 5.9 | 63.7 |
| Germany | 0.5 | 19.2 | 5.9 | 3.9 | 16.0 | 2.9 | 48.2 |
| Greece | 0.0 | 3.8 | 1.2 | 11.4 | 22.2 | 1.3 | 39.9 |
| Hungary | 0.0 | 8.0 | 10.4 | 7.2 | 9.4 | 2.3 | 37.4 |
| Ireland | 28.2 | 23.0 | 14.6 | 10.0 | 21.4 | 2.8 | 100.0 |
| Italy | 0.4 | 9.5 | 6.9 | 6.7 | 11.1 | 1.3 | 35.9 |
| Latvia | 0.0 | 6.4 | 8.6 | 4.9 | 9.7 | 0.2 | 29.8 |
| Lithuania | 0.0 | 10.4 | 12.6 | 9.7 | 8.5 | 0.3 | 41.4 |
| Luxembourg | 0.0 | 33.6 | 31.9 | 8.7 | 23.6 | 2.2 | 100.0 |
| Malta | 0.0 | 3.9 | 2.9 | 5.8 | 21.8 | 0.1 | 34.4 |
| Netherlands | 0.0 | 9.2 | 8.9 | 7.2 | 8.7 | 3.9 | 37.9 |
| Poland | 0.0 | 6.6 | 9.5 | 5.6 | 6.7 | 0.2 | 28.7 |
| Portugal | 0.0 | 3.0 | 2.3 | 9.4 | 15.8 | 0.6 | 31.0 |
| Romania | 0.0 | 1.6 | 1.8 | 7.6 | 9.5 | 0.2 | 20.7 |
| Slovakia | 0.0 | 25.1 | 12.4 | 11.8 | 11.8 | 0.3 | 61.5 |
| Slovenia | 0.0 | 15.4 | 4.6 | 12.9 | 6.7 | 0.4 | 40.0 |
| Spain | 0.1 | 6.0 | 4.0 | 10.9 | 7.9 | 1.6 | 23.6 |
| Sweden | 0.0 | 11.7 | 9.1 | 9.0 | 6.2 | 0.3 | 36.4 |
| UK | 0.0 | 4.7 | 2.1 | 3.4 | 6.3 | 1.3 | 17.9 |
| EU | 0.0 | 21.4 | 7.0 | 4.0 | 21.2 | 1.7 | 55.2 |

*including the amount of previously unused resources and the budget for 2010; rounded to 0.1.
*Source: Own elaboration based on COM(2011)672.*

In the next year of implementation of rural development programmes the level of transfers was maintained (Table 4.6). In 2010, advances accounted for a small proportion of transferred funds, and in 2011 they were not made. The level of absorption of the EAFRD in individual countries continued to differentiate. The state with the lowest level of spending was Bulgaria, in which case the level of spending did not exceed 10% of the funds made available so far.

Table 4.6. Level of funds transferred to Member States from EAFRD budget in 2011 as a percentage of funds allocated to them*

| MS | 3q 2010 | 4q 2010 | 1q 2011 | 2q 2011 | 3q 2011 | Total |
|---|---|---|---|---|---|---|
| Austria | 0.0 | 41.9 | 8.0 | 3.8 | 2.8 | 56.6 |
| Belgium | 7.5 | 22.6 | 10.4 | 31.8 | 11.7 | 84.0 |
| Bulgaria | 0.0 | 2.2 | 2.5 | 1.9 | 1.9 | 8.5 |
| Cyprus | 0.0 | 1.2 | 6.8 | 11.6 | 7.1 | 26.6 |
| Czech Republic | 0.0 | 16.2 | 22.1 | 9.6 | 6.1 | 54.0 |
| Denmark | 0.0 | 8.7 | 5.3 | 4.9 | 4.7 | 23.5 |
| Estonia | 0.0 | 6.2 | 23.2 | 6.8 | 8.4 | 44.7 |
| Finland | 0.0 | 14.0 | 3.4 | 2.5 | 35.6 | 55.4 |
| France | 0.0 | 11.5 | 6.4 | 7.4 | 19.2 | 44.5 |
| Germany | 1.1 | 19.4 | 5.7 | 3.6 | 14.8 | 44.7 |
| Greece | 0.0 | 10.4 | 3.1 | 13.1 | 5.3 | 32.0 |
| Hungary | 0.0 | 7.6 | 11.5 | 8.4 | 4.8 | 32.2 |
| Ireland | 9.3 | 36.4 | 16.2 | 6.9 | 30.1 | 99.0 |
| Italy | 0.0 | 12.2 | 4.0 | 3.8 | 4.8 | 24.8 |
| Latvia | 0.0 | 9.7 | 6.5 | 6.8 | 7.7 | 30.7 |
| Lithuania | 0.0 | 16.1 | 9.7 | 8.3 | 8.0 | 42.2 |
| Luxembourg | 2.0 | 33.3 | 41.0 | 14.7 | 9.0 | 100.0 |
| Malta | 0.0 | 1.9 | 7.1 | 3.0 | 5.2 | 17.1 |
| Netherlands | 0.0 | 12.3 | 1.6 | 5.7 | 7.0 | 26.6 |
| Poland | 0.0 | 9.2 | 7.8 | 8.5 | 6.7 | 32.3 |
| Portugal | 0.0 | 6.6 | 5.1 | 5.2 | 13.7 | 30.6 |
| Romania | 0.0 | 2.7 | 2.7 | 3.2 | 12.4 | 21.0 |
| Slovakia | 0.0 | 29.2 | 12.5 | 16.6 | 11.0 | 69.3 |
| Slovenia | 0.8 | 13.8 | 5.9 | 13.0 | 4.7 | 38.2 |
| Spain | 0.0 | 8.7 | 4.2 | 4.7 | 6.7 | 24.3 |
| Sweden | 0.0 | 15.9 | 7.1 | 5.0 | 25.4 | 53.4 |
| UK | 0.0 | 8.5 | 11.1 | 9.3 | 7.5 | 36.3 |
| EU | 0.2 | 11.6 | 6.6 | 6.4 | 9.6 | 34.4 |

*including the amount of previously unused resources and the budget for 2011; rounded to 0.1.
*Source: Own elaboration based on COM(2012)549.*

In 2012, Member States received more than 13 billion euro, an amount still exceeding the annual budget of the fund and constituting more than half of unspent in previous years (Table 4.7). Malta was still a country with the lowest level of spending, and Belgium still had the highest absorption rate of its budget for rural development.

Table 4.7. Level of funds provided to MS from EAFRD budget in 2012 as a percentage of funds allocated to them *

| MS | 2q 2010 | 3q 2010 | 4q 2010 | 1q 2011 | 2q 2011 | 3q 2011 | Total |
|---|---|---|---|---|---|---|---|
| Austria | 0.0 | 0.0 | 34.8 | 14.3 | 3.3 | 2.5 | 54.9 |
| Belgium | 0.3 | 16.5 | 12.8 | 13.6 | 29.3 | 3.9 | 76.3 |
| Bulgaria | 0.0 | 0.0 | 12.2 | 0.9 | 1.8 | 2.8 | 17.8 |
| Cyprus | 0.0 | 0.0 | 7.3 | 9.9 | 5.7 | 4.9 | 27.9 |
| Czech Republic | 0.0 | 0.0 | 16.8 | 21.6 | 9.1 | 5.2 | 52.8 |
| Denmark | 0.0 | 0.0 | 8.4 | 5.1 | 4.4 | 6.1 | 24.0 |
| Estonia | 0.0 | 0.0 | 10.0 | 26.3 | 8.9 | 8.4 | 53.6 |
| Finland | 0.0 | 0.0 | 15.4 | 3.8 | 4.2 | 34.7 | 58.0 |
| France | 0.0 | 0.0 | 17.7 | 6.2 | 4.4 | 15.1 | 43.5 |
| Germany | 0.0 | 0.1 | 19.7 | 7.2 | 4.0 | 15.5 | 46.4 |
| Greece | 0.0 | 0.0 | 2.1 | 2.2 | 5.9 | 11.2 | 21.3 |
| Hungary | 0.0 | 0.0 | 8.2 | 10.5 | 5.8 | 5.4 | 30.0 |
| Ireland | 0.0 | 1.0 | 34.0 | 13.2 | 8.7 | 34.6 | 91.5 |
| Italy | 0.0 | 0.0 | 13.4 | 3.7 | 4.3 | 6.0 | 27.4 |
| Latvia | 0.0 | 0.0 | 13.5 | 12.1 | 7.1 | 9.1 | 41.8 |
| Lithuania | 0.0 | 0.0 | 15.9 | 7.1 | 7.6 | 9.2 | 39.8 |
| Luxembourg | 0.0 | 7.5 | 23.2 | 37.3 | 5.9 | 4.1 | 78.0 |
| Latvia | 0.0 | 0.0 | 13.5 | 12.1 | 7.1 | 9.1 | 41.8 |
| Malta | 0.0 | 0.0 | 7.2 | 3.9 | 4.5 | 3.8 | 19.4 |
| Netherlands | 0.0 | 0.0 | 11.5 | 6.2 | 12.7 | 10.5 | 40.9 |
| Germany | 0.0 | 0.1 | 19.7 | 7.2 | 4.0 | 15.5 | 46.4 |
| Poland | 0.0 | 0.0 | 9.7 | 10.7 | 8.4 | 7.8 | 36.6 |
| Portugal | 0.0 | 0.0 | 11.5 | 5.0 | 9.4 | 14.2 | 40.1 |
| Romania | 0.0 | 0.0 | 9.8 | 4.3 | 4.5 | 4.7 | 23.3 |
| Slovakia | 0.0 | 0.0 | 25.7 | 7.2 | 17.4 | 13.4 | 63.7 |
| Slovenia | 0.0 | 0.0 | 12.5 | 8.4 | 14.6 | 5.3 | 40.7 |
| Spain | 0.0 | 0.0 | 7.3 | 4.1 | 4.0 | 3.6 | 19.0 |
| Sweden | 0.0 | 0.0 | 14.6 | 8.2 | 6.1 | 27.6 | 56.5 |
| UK | 0.0 | 0.0 | 10.4 | 11.3 | 9.2 | 9.6 | 40.6 |
| EU | 0.0 | 0.1 | 12.9 | 7.2 | 6.2 | 9.0 | 35.4 |

*including the amount of previously unused resources and the budget for 2012; rounded to 0.1.
*Source: Own elaboration based on COM(2013)695.*

The level of absorption of annual budgets each year better shows the variability of the pace of implementation of rural development programmes in different years and countries (Table 4.8). Particularly interesting seems to be the case of Malta, which in 2007 did not use a single euro, and in the next two years absorbed less than 30% of the amount available within annual budgets. However, in 2010 it absorbed more than 156% of the annual budget.

Table 4.8. Level of absorption of the EAFRD budget in relation to annual budget for each MS (in percent)

| MS | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | Total |
|---|---|---|---|---|---|---|---|
| Austria | 56.2 | 77.8 | 94.8 | 100.5 | 100.8 | 98.2 | 87.4 |
| Belgium | 86.1 | 96.0 | 92.7 | 100.0 | 102.4 | 90.7 | 94.8 |
| Bulgaria | 0.0 | 41.4 | 27.8 | 67.3 | 31.0 | 77.1 | 43.2 |
| Cyprus | 42.6 | 42.2 | 67.5 | 68.2 | 80.2 | 91.2 | 64.2 |
| Czech Republic | 49.7 | 54.2 | 83.2 | 106.2 | 110.2 | 101.5 | 84.6 |
| Denmark | 0.0 | 84.0 | 79.9 | 71.0 | 54.8 | 63.4 | 62.8 |
| Estonia | 26.2 | 51.2 | 94.1 | 89.0 | 102.2 | 118.7 | 81.6 |
| Finland | 99.2 | 78.3 | 62.0 | 93.1 | 94.6 | 102.7 | 88.3 |
| France | 97.9 | 90.9 | 82.3 | 79.8 | 63.4 | 76.2 | 80.8 |
| Germany | 68.6 | 67.5 | 77.3 | 86.2 | 84.4 | 93.8 | 80.2 |
| Greece | 70.2 | 76.3 | 36.1 | 84.9 | 62.3 | 49.4 | 62.3 |
| Hungary | 46.9 | 27.7 | 94.3 | 86.0 | 79.0 | 78.4 | 68.5 |
| Ireland | 100.0 | 100.0 | 94.9 | 104.9 | 99.0 | 92.5 | 98.6 |
| Italy | 39.0 | 42.0 | 30.1 | 52.9 | 78.6 | 91.9 | 56.8 |
| Latvia | 0.0 | 41.1 | 69.5 | 103.0 | 107.4 | 142.0 | 71.9 |
| Lithuania | 46.8 | 24.4 | 99.0 | 95.2 | 100.3 | 94.0 | 76.5 |
| Luxembourg | 100.0 | 87.1 | 97.4 | 115.2 | 100.0 | 78.0 | 96.4 |
| Malta | 0.0 | 22.4 | 29.8 | 156.7 | 71.2 | 85.5 | 53.2 |
| Netherlands | 74.1 | 31.9 | 49.0 | 83.7 | 61.7 | 106.5 | 69.8 |
| Poland | 46.5 | 43.8 | 52.9 | 74.4 | 94.2 | 109.1 | 69.6 |
| Portugal | 39.4 | 67.9 | 40.3 | 77.0 | 83.8 | 115.8 | 70.9 |
| Romania | 0.0 | 49.0 | 37.7 | 54.3 | 65.9 | 81.1 | 51.7 |
| Slovakia | 22.7 | 58.2 | 102.3 | 141.7 | 131.5 | 99.2 | 90.7 |
| Slovenia | 62.2 | 61.0 | 73.8 | 83.9 | 90.1 | 102.7 | 77.9 |
| Spain | 0.8 | 63.1 | 46.8 | 61.9 | 79.9 | 65.4 | 55.0 |
| Sweden | 100.0 | 68.4 | 39.1 | 104.9 | 99.1 | 105.5 | 86.5 |
| UK | 65.3 | 65.7 | 49.0 | 72.6 | 80.3 | 97.6 | 72.9 |
| EU | 49.3 | 58.3 | 65.7 | 77.5 | 81.9 | 89.9 | 71.1 |

*Source: Own elaboration based on COM(2013)695.*

Varied rate of absorption of the EAFRD in individual years and countries in the period 2007-2012 is shown in Table 4.9, which presents the share of transfers made in the each quarter to the total amount allocated. As you can be seen, the table is dominated by quarterly transfers not exceeding 10% of the total funds transferred. The most diverse structure of transfers is recorded in the case of Bulgaria and Malta, which were characterized by an extremely low level of absorption in the first years of implementation of the RDP 2007-2013.

Table 4.9. Share of EAFRD budget transferred during each quarter to a total of EAFRD funds allocated to each Member State

| MS | 2006 | 2007 | | | | 2008 | | | | | 2009 | | | | 2010 | | | | | 2011 | | | | 2012 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4 | 2 | 3 | 4 | P | 1 | 2 | 3 | 4 | P | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | P | 1 | 2 | 3 | 4 | 1 | 2 | 3 |
| Austria | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Belgium | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bulgaria | | | | | | | | | | | | | | | | | | | | | | | **20** | | | |
| Cyprus | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Czech Republic | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Denmark | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Estonia | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Finland | | | | | | | | | | | | | | | | | | | | | | | | | | |
| France | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Germany | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Greece | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hungary | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ireland | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Italy | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Latvia | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lithuania | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Luxembourg | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Malta | | | | | | | | | | | | | | | | | **26** | | | | | | | | | |
| Netherlands | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Portugal | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Romania | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Slovakia | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Slovenia | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spain | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sweden | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UK | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EU | | | | | | | | | | | | | | | | | | | | | | | | | | |

Legend:

To: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

*Source: Own elaboration.*

It is also interesting to look at the level of absorption of the various measures of rural development programmes. A comparison of absorption of allocated funds at the Community's and Poland's level is presented in Table 4.10. Naturally allocation for each measure and axes in the case of Polish and EU is different, but the degree of absorption of these funds does not depend only on the scale of the budget provided for its implementation. Therefore, on this basis it can be concluded how well each of the measures was implemented in Poland. It is worth paying attention to the "Modernization of agricultural holdings". Poland allocated to this measure an amount corresponding to about one fifth of the total amount allocated for this activity in the EU-27, and the level of absorption of this support in Poland reached 70%, whereas in the EU only 13%, which means that Poland played a key part in the absorption of the funds allocated for this measure and this indicates that, compared with other countries Poland pre-

sented high absorption capacity. An open question, however, remains the issue of whether in Poland the effects of this measure's implementation are durable, optimal and exceed the results obtained in other countries.

Table 4.10. Absorption of resources for RDP 2007-2013 to 2012 in the EU and Poland

| Measures | | EU | | Poland | |
|---|---|---|---|---|---|
| | | Expenditure until 3q 2012 | | Expenditure until the end of 2012 | |
| No | Name | 1 | 2 | 1 | 2 |
| 111 | Vocational training and information actions | 261.8 | 0.7% | 9.0 | 38.0% |
| 112 | Setting up of young farmers | 1,312.4 | 3.3% | 298.9 | 93.4% |
| 113 | Early retirement | 1,371.7 | 3.5% | 1,281.7 | 71.0% |
| 114 | Use of advisory services | 38.3 | 0.1% | 14.3 | 23.4% |
| 115 | Setting up of management, relief and .... | 10.6 | 0.0% | 0.0 | |
| 121 | Modernisation of agricultural holdings | 5,040.4 | 12.7% | 1,181.3 | 70.0% |
| 122 | Improvement of the economic value of forest | 121.3 | 0.3% | 0.0 | |
| 123 | Adding value to agricultural and forestry... | 1,649.9 | 4.2% | 304.8 | 42.2% |
| 124 | Cooperation for development of new products | 39.6 | 0.1% | 0.0 | |
| 125 | Infrastructure related to the development … | 1,189.3 | 3.0% | 91.3 | 18.1% |
| 126 | Restoring agricultural production potential | 184 | 0.5% | 34.2 | 43.2% |
| 131 | Meeting standards based on Community... | 49.9 | 0.1% | 0.0 | |
| 132 | Participation of farmers in food quality… | 31.9 | 0.1% | 2.9 | 12.4% |
| 133 | Information and promotion activities | 26.9 | 0.1% | 0.5 | 6.3% |
| 141 | Semi-subsistence farming | 472 | 1.2% | 400.6 | 99.1% |
| 142 | Producer groups | 81.3 | 0.2% | 63.7 | 56.6% |
| 143 | Direct Payment (BG + RO) | 2.3 | 0.0% | 0.0 | |
| 144 | Holdings undergoing restructuring | 68.4 | 0.2% | 0.0 | |
| | **Axis 1** | **4,274.40** | **30.2%** | **3,683.2** | **64.2%** |
| 211 | Natural handicap payments to farmers in ... | 4,160.90 | 10.5% | 1,556.4 | 78.7% |
| 212 | Payments to farmers in areas with handicaps... | 4,325.50 | 10.9% | | |
| 213 | Natura 2000 payments and payments linked .. | 85.5 | 0.2% | 0.0 | |
| 214 | Agri-environment payments | 12,030.1 | 30.4% | 1,036.8 | 54.7% |
| 215 | Animal welfare payments | 207.9 | 0.5% | 0.0 | |
| 216 | Non-productive investments | 124.0 | 0.3% | 0.0 | |
| 221 | First afforestation of agricultural land | 829.1 | 2.1% | 128.9 | 36.4% |
| 222 | First establishment of agroforestry systems... | 0.0 | 0.0% | 0.0 | |
| 223 | First afforestation of non-agricultural land | 65.5 | 0.2% | 0.0 | |
| 224 | Natura 2000 payments | 11.9 | 0.0% | 0.0 | |
| 225 | Forest-environment payments | 20.3 | 0.1% | 0.0 | |
| 226 | Restoring forestry potential and … | 559.1 | 1.4% | 32.6 | 29.9% |
| 227 | Non-productive investments | 185.5 | 0.5% | 0.0 | |
| | **Axis 2** | **6,041.9** | **57.0%** | **2,754.7** | **63.6%** |

Table 4.10 (cont.)

| | | | | | |
|---|---|---|---|---|---|
| 311 | Diversification into non-agricultural activities | 339.0 | 0.9% | 153.6 | 57.2% |
| 312 | Business creation and development | 373.7 | 0.9% | 143.0 | 17.9% |
| 313 | Encouragement of tourism activities | 225.3 | 0.6% | 0.0 | |
| 321 | Basic services for the economy and rural … | 771.5 | 1.9% | 581.8 | 45.8% |
| 322 | Village renewal and development | 1,148.8 | 2.9% | 272.5 | 59.9% |
| 323 | Conservation and upgrading of the rural.... | 339.7 | 0.9% | 0.0 | |
| 331 | Training and information | 29.9 | 0.1% | 0.0 | |
| 341 | Skills acquisition, animation and implement... | 51.7 | 0.1% | 0.0 | |
| | **Axis 3** | **2,028.0** | **8.3%** | **1,150.8** | **41.2%** |
| 411 | Implementing local development strategies... | 53.4 | 0.1% | 0.0 | |
| 412 | Implementing local development strategies... | 5.8 | 0.0% | 0.0 | |
| 413 | Implementing local development strategies.... | 552.8 | 1.4% | 122.3 | 23.5% |
| 421 | Implementing cooperation projects | 12.4 | 0.0% | 0.9 | 7.2% |
| 431 | Running the local action group, acquiring ... | 132.0 | 1.0% | 47.1 | 37.6% |
| | **Axis 4** | **713.8** | **2.2%** | **170.3** | **25.9%** |
| 511 | Technical Assistance | 463.0 | 1.2% | 76.9 | 36.9% |
| 611 | BG RO Direct Payments | 437.8 | 1.1% | 0.0 | |
| | **Total** | **13,236.9** | **100.0%** | **7,835.9** | **57.2%** |

1 – in euro; in the case of Poland the conversion into euro was made using the exchange rate 3.9877, average of the annual average exchange rates from the years 2007-2012;
2 – absorption of the EAFRD in 2007-2013.
*Source: Own elaboration based on data from COM(2013)695 and MRiRW(2013).*

## 4.2. Absorption of EAGF support

Payments within EAGF are carried each month. In accordance with Regulation (EC) no. 1290/2005, the European Commission makes monthly payments based on expenditure, which are made by the accredited paying agencies of the Member States in the reference month, meaning that the transfer of funds takes place no later than on the third working day of the second month following the month in which the expenses were incurred.

Monthly payments are a reimbursement of net expenditure (after deducting income) that have already been incurred and are made available on the basis of monthly declarations of Member States. It should be borne in mind that payments will become final after verification by the Commission based on the decisions resulting from conformity clearance, which leads in some cases to the necessity of making returns of the money already transferred.

The highest amount of transfers is noted in February, which corresponds to the expenditure incurred by Member States in December of the previous year (Table 4.11). On average in February there were more than 50 % of all transfers. Only in 2010 the rate was lower and transfers in January amounted to almost one third of the total amount transferred in this year.

Table 4.11. Structure of the transfers of funds to the Member States from EAGF budget in 2007-2012 (in percent)

| Month | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| I | 12.82 | 2.72 | 1.83 | 31.20 | 19.78 | 24.34 |
| II | 52.77 | 67.71 | 65.73 | 41.89 | 56.63 | 52.48 |
| III | 4.40 | 5.29 | 5.25 | 3.71 | 2.54 | 6.31 |
| IV | 8.43 | 6.85 | 4.37 | 3.02 | 4.45 | 3.86 |
| V | 3.28 | 0.86 | 2.28 | 7.83 | 4.16 | 3.66 |
| VI | 3.50 | 3.80 | 2.22 | 1.91 | 2.88 | 1.87 |
| VII | 4.19 | 3.12 | 1.43 | 1.64 | 1.72 | 0.94 |
| VIII | 6.12 | 5.96 | 10.66 | 4.38 | 2.92 | 2.85 |
| IX | 1.10 | 1.03 | 1.38 | 1.32 | 0.83 | 0.60 |
| X | 0.91 | 1.16 | 1.19 | 0.84 | 0.94 | 0.18 |
| XI | 1.74 | 0.65 | 2.03 | 0.68 | 1.45 | 1.25 |
| XII | 0.76 | 0.85 | 1.63 | 1.60 | 1.70 | 1.50 |
| Supplementary payments | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 |

*Source: Own elaboration based on data from Tables 4.12-4.17.*

In 2007, under Pillar I of the CAP EC transferred to the Member States almost 40 billion euro (Table 4.12). The biggest beneficiary was France, which received more than 8.8 billion euro. Regarding the level of monthly transfers, they were highest in February – more than 21 billion euro and the lowest in November – only 69 million euro. In the case of supplementary payments a negative result was recorded. The highest recorded amount refunded was observed in the case of Germany – about 230 million euro, with more than 5.2 billion received by this country out of EAGF.

Transfers of EAGF in 2008 exceeded 38.8 billion euro and were particularly concentrated in February, when more than 26 billion euro was transferred to Member States (Table 4.13). However, in May and the last four months of 2008, transfers to the Member States did not exceed 400 million per month. In this year the biggest beneficiary was also France, although it received about 0.5 billion less than the year before, i.e. 8.5 billion euro. The largest returns of the funds were again made Germany, where net returns exceeded 470 million euro.

In 2009 transfers of EAGF support to Member States exceeded 43 billion euro (Table 4.14). The largest share of transfers was made in February with over 28 billion euro paid to MSs. More than 10%, over 4.6 billion euro, of the transferred sum was paid in August. This was a unique situation in the whole analysed period. Traditionally a country that obtained the highest aggregate amount of EAGF support was France, which gained over 9 billion euro. Once again the highest returns had to be made by Germany and they exceeded 400 million.

The next year, the amount transferred to Member States under Pillar I exceeded 42.3 billion euro (Table 4.15). This time, more than 70% of the money obtained by the Member States was paid in January and February. France received almost 8.7 billion

euro. In 2010, the United Kingdom had the highest level of returns that exceeded 210 million euro.

In 2011, transfers of EAGF support to Member States exceeded 43.1 billion euro (Table 4.16). Traditionally, the largest amount was transferred in February this year it was more than 24.4 billion euro. France received the highest amount among all countries – more than 8.7 billion euro, while the highest returns had to be made by Greece and they exceeded 118 million euro.

In the last year of the analysis of transfers from the EAGF budget they reached over 42.8 billion euro (Table 4.17). The highest amount was paid in February – 22.9 billion euro and more than 10.6 billion euro in January. The biggest beneficiary of EAGF was France receiving nearly 8.6 billion euro. Like in 2011, the highest amount of refunds had to be made by Greece, where they exceeded 106 million euro.

As can be seen, unlike in the case of the EAFRD, transfers from EAGF budget are very cyclical and concentrated in the months when the EC is obliged to reimburse the expenditure incurred by Member States for direct payments. Other instruments of Pillar I are of minor importance and therefore do not have much impact on the distribution of transfers from this fund.

Table 4.12. EAGF spending in 2007 (monthly data in million euro*)

| MS | 1.2007 | 2.2007 | 3.2007 | 4.2007 | 5.2007 | 6.2007 | 7.2007 | 8.2007 | 9.2007 | 10.2007 | 11.2007 | 12.2007 | Supplementary payments* | Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Austria | -16.73 | 606.26 | 2.54 | 82.36 | -24.15 | 3.71 | 9.2 | 24.93 | 1.71 | 0.92 | 2.81 | -2.56 | -9,057 | 690,990,943 |
| Belgium | 99.07 | 407.47 | 23.92 | 20.74 | 26.41 | 20.99 | 16.17 | 53.63 | 28.07 | 9.89 | 14.22 | 15.57 | 2,708 | 736,152,708 |
| Bulgaria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.17 | 7,176 | 177,176 |
| Cyprus | 0.21 | 8.23 | 9.73 | 1.24 | 0.76 | 0.35 | 0.17 | 4.65 | 0.35 | 0.20 | 0.34 | 0.66 | 80 | 26,890,080 |
| Czech Republic | -0.57 | 278.92 | 39.73 | 8.76 | -28.57 | 1.61 | 1.86 | 3.29 | 1.03 | 1.55 | 0.88 | 2.11 | 4,993 | 310,604,993 |
| Denmark | 19.39 | 840.43 | 72.81 | 45.51 | 14.24 | 10.03 | 18.05 | 2.95 | 8.29 | 4.19 | 3.46 | 1.79 | -992,594 | 1,040,147,406 |
| Estonia | 0.61 | 30.01 | 3.48 | 0.71 | 0.87 | 0.62 | 0.59 | 0.29 | 0.26 | 0.25 | 0.15 | 0.04 | 8,956 | 37,888,956 |
| Finland | 18.06 | 501.30 | 1.11 | 2.99 | -7.43 | 20.90 | 14.07 | 6.90 | 2.01 | 1.52 | 16.09 | 0.28 | 3,603 | 577,803,603 |
| France | 3,400.29 | 4,487.61 | 189.99 | -65.23 | 49.98 | 117.93 | 78.06 | 238.84 | 61.4 | 63.54 | 158.24 | 79.01 | 51,514 | 8,859,711,514 |
| Germany | 1.37 | 5,287.35 | 60.26 | 38.25 | -229.14 | 14.41 | 4.91 | -4.31 | 6.09 | 28.28 | 44.66 | 7.19 | 3,042 | 5,259,323,042 |
| Greece | 584.43 | 51.73 | 63.68 | -10.29 | 192.68 | 402.99 | 417.95 | 494.9 | 60.29 | 26.72 | 66.24 | 22.82 | 9,977 | 2,374,149,977 |
| Hungary | 32.95 | 310.60 | -68.77 | 128.31 | 5.43 | 49.25 | 9.12 | 21.74 | 4.55 | 0.28 | -35.10 | -22.92 | -14,756 | 435,425,244 |
| Ireland | 571.38 | 596.11 | 31.15 | 14.09 | 44.23 | 15.40 | 12.86 | 53.89 | 11.31 | 8.78 | 22.99 | 5.56 | 1,816 | 1,387,751,816 |
| Italy | -1.52 | 1,698.71 | 212.40 | 905.50 | 515.56 | 113.74 | 237.01 | 645.37 | 75.31 | 708.10 | 51.45 | 82.85 | 4,902 | 4,607,194,902 |
| Latvia | 17.05 | 3.25 | 5.51 | 1.94 | 15.20 | 4.42 | 0.88 | 0.21 | 0.39 | 0.30 | 0.40 | 0.09 | 5,335 | 49,645,335 |
| Lithuania | 46.96 | 48.01 | 20.76 | 19.76 | 2.99 | 5.18 | 3.95 | 2.12 | 2.08 | 3.25 | 2.16 | 2.09 | 807 | 159,310,807 |
| Luxembourg | 16.45 | 0.01 | 0.02 | 0.00 | 13.24 | 0.46 | 0.01 | 4.91 | 0.19 | 0.33 | -0.01 | 0.03 | 577 | 35,644,577 |
| Malta | 0.00 | 0.02 | 0.33 | 0.07 | 0.19 | 0.04 | 0.00 | 1.08 | 0.00 | 0.04 | 0.01 | 0.18 | 933 | 1,953,933 |
| Netherlands | 86.67 | 639.94 | 52.41 | -48.56 | 77.65 | 32.39 | 40.28 | 45.66 | 42.25 | 15.77 | 24.07 | 5.81 | 3,940 | 1,014,343,940 |
| Poland | -39.46 | 386.07 | 395.50 | 211.68 | -61.07 | 41.38 | 19.80 | 20.25 | 7.36 | 11.59 | 9.40 | 7.70 | 6,734 | 1,010,206,734 |
| Portugal | 68.67 | 131.26 | 6.38 | 272.65 | 42.90 | 50.89 | 38.26 | 50.61 | 7.27 | 8.08 | 35.58 | 4.67 | -10,555 | 717,209,445 |
| Romania | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.89 | 0.00 | 0.00 | 0.00 | 0.00 | 3,688 | 6,893,688 |
| Slovakia | 0.54 | 114.78 | 5.59 | 10.43 | -16.74 | 1.58 | 2.60 | 1.49 | 3.15 | 6.81 | 7.03 | 2.43 | 7,349 | 139,697,349 |
| Slovenia | 1.05 | 16.05 | -1.22 | 2.50 | -3.50 | 0.41 | 0.21 | 28.17 | 0.33 | 0.10 | 1.12 | 0.37 | -14,222 | 45,575,778 |
| Spain | 98.58 | 2,935.48 | 136.48 | 478.76 | 490.66 | 314.69 | 340.86 | 522.79 | 71.05 | 56.47 | 137.73 | 109.44 | 8,642 | 5,692,998,642 |
| Sweden | 9.63 | 641.26 | 38.36 | 12.83 | 0.70 | 3.90 | 4.89 | 15.89 | 1.44 | 2.09 | 11.27 | 0.73 | 9,118 | 742,999,118 |
| UK | 98.19 | 1,028.23 | 451.23 | 1,227.65 | 183.32 | 167.33 | 398.40 | 194.47 | 40.95 | 39.82 | 119.16 | -21.79 | -1,623 | 3,926,958,377 |
| EU | 5,113.28 | 21,049.09 | 1,753.38 | 3,362.65 | 1,306.41 | 1,394.60 | 1,670.16 | 2,441.61 | 437.13 | 361.57 | 69.44 | 304.32 | -896,918 | 39,887,650,082 |

* data in the last two columns in euro.

*Source: COM(2008)587.*

Table 4.13. EAGF spending in 2008 (monthly data in million euro*)

| MS | 1.2008 | 2.2008 | 3.2008 | 4.2008 | 5.2008 | 6.2008 | 7.2008 | 8.2008 | 9.2008 | 10.2008 | 11.2008 | 12.2008 | Supplemantary payments | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Austria | -44.04 | 599.16 | 1.60 | 76.25 | -36.68 | 4.36 | 5.65 | 35.96 | 3.83 | 3.13 | 5.61 | 1.66 | 6,254 | 656,496,254 |
| Belgium | 43.59 | 459.39 | 30.51 | 92.41 | -51.85 | 9.84 | 11.78 | 42.94 | 29.48 | 16.97 | 4.56 | 16.58 | 1,151 | 1,857 |
| Bulgaria | 0.00 | 0.01 | 58.61 | 103.72 | -2.74 | 0.32 | 0.00 | 9.33 | 0.49 | 1.79 | 1.48 | 0.25 | 2,003 | 173,262,003 |
| Cyprus | 0.09 | 19.08 | 1.33 | 0.65 | 0.03 | 0.59 | 0.11 | 4.11 | 0.21 | 0.08 | 0.75 | 0.75 | 541 | 27,774,541 |
| Czech Republic | -22.79 | 335.21 | 33.68 | 9.25 | -37.14 | 3.43 | 8.65 | 45.44 | 0.97 | 0.30 | 1.82 | 3.81 | 8,180 | 382,638,180 |
| Denmark | -22.37 | 864.98 | 53.25 | 26.83 | -29.84 | 11.82 | 27.96 | 16.83 | 10.43 | 7.54 | 6.65 | 6.47 | 55,638 | 980,605,638 |
| Estonia | 0.07 | 40.38 | 0.01 | 0.14 | 0.03 | 0.08 | 0.04 | 0.43 | 0.00 | 0.26 | 0.09 | 0.00 | 7,243 | 41,537,242 |
| Finland | 2.38 | 492.95 | 2.56 | 0.85 | -9.48 | 26.69 | 2.36 | 29.69 | 2.62 | 2.73 | 13.31 | 0.54 | 799 | 567,200,799 |
| France | 688.99 | 6,910.85 | 145.88 | 132.14 | -289.21 | 101.87 | 68.59 | 203.37 | 65.44 | 112.02 | 136.52 | 47.94 | 4,949 | 8,324,404,949 |
| Germany | -147.39 | 5,310.15 | 61.79 | -95.30 | -232.39 | 44.39 | 15.52 | 27.51 | 18.82 | 29.00 | 63.26 | 5.77 | 3,812 | 5,101,133,812 |
| Greece | -7.17 | 1,698.17 | 62.43 | 7.54 | 144.77 | 285.00 | 38.30 | 228.30 | 18.48 | 22.12 | -41.12 | 3.92 | 5,905 | 2,460,745,905 |
| Hungary | -68.49 | 304.98 | 111.28 | 51.73 | -37.72 | 60.69 | -0.55 | 52.60 | 7.15 | 2.11 | 6.82 | 1.86 | -72,419 | 492,387,581 |
| Ireland | 583.39 | 627.15 | 20.14 | 98.91 | 55.77 | 4.83 | 2.84 | 43.44 | 3.55 | 3.87 | 4.63 | 1.80 | 7,500 | 1,450,327,500 |
| Italy | -20.47 | 1,617.57 | 126.16 | 1,281.23 | 441.80 | 207.60 | 140.80 | 391.32 | 66.37 | 57.04 | -130.12 | 84.83 | 2,180 | 4,264,132,180 |
| Latvia | -3.14 | 32.15 | 9.69 | 3.16 | 12.23 | 2.63 | 0.83 | 31.23 | 0.34 | 0.12 | 7.39 | 0.13 | 416 | 96,760,416 |
| Lithuania | -3.07 | 88.91 | 5.68 | 14.92 | -1.36 | 26.11 | 12.52 | 8.94 | 1.36 | 0.75 | 0.74 | 0.49 | 6,896 | 155,996,896 |
| Luxembourg | -0.19 | 32.62 | 0.02 | 0.35 | 1.19 | 0.03 | 0.16 | -0.85 | 0.41 | 0.02 | 0.02 | 0.02 | 841 | 33,787,841 |
| Malta | 0.00 | 0.01 | 0.25 | -0.07 | 0.20 | 0.01 | 0.00 | 1.54 | 0.10 | 0.19 | 0.22 | 0.04 | 342 | 2,472,342 |
| Netherlands | 9.80 | 258.24 | 122.22 | 58.56 | 173.91 | 61.83 | 38.91 | 54.22 | 18.10 | 23.20 | 14.28 | 22.97 | 2,768 | 856,242,768 |
| Poland | -67.18 | 334.73 | 155.85 | 241.68 | -69.34 | 110.40 | 295.27 | 101.74 | 29.49 | 16.87 | 10.88 | 11.84 | 2,662 | 1,172,232,662 |
| Portugal | 20.93 | 331.89 | 16.83 | 59.84 | 88.74 | 40.09 | 5.72 | 110.15 | 5.94 | 20.91 | 13.63 | 5.42 | 4,154 | 720,094,154 |
| Romania | 0.00 | 0.00 | 5.63 | -2.14 | -5.23 | 42.54 | 124.39 | 227.58 | 17.39 | 31.82 | 16.42 | 3.47 | 850 | 461,870,850 |
| Slovakia | -8.67 | 132.53 | 0.66 | 15.05 | -11.14 | 0.92 | 1.04 | 31.66 | 0.62 | 0.98 | 4.32 | 1.79 | 8,427 | 169,768,427 |
| Slovenia | -2.25 | 0.16 | 0.03 | 0.75 | 2.11 | 33.14 | 14.95 | 36.25 | 0.86 | 0.80 | 6.05 | 0.30 | 2,579 | 93,152,579 |
| Spain | 165.68 | 3,321.83 | 306.37 | 189.93 | 159.49 | 289.70 | 254.20 | 420.39 | 63.17 | 61.31 | 144.61 | 98.94 | 1,557 | 5,475,621,557 |
| Sweden | -10.53 | 625.25 | 42.58 | 25.61 | -11.82 | 4.40 | 3.29 | 13.89 | 2.61 | 12.71 | 3.30 | 2.57 | 9,554 | 713,869,554 |
| UK | -33.30 | 1,835.18 | 678.29 | 265.70 | 78.83 | 101.48 | 135.64 | 145.40 | 31.17 | 22.59 | -43.56 | 5.77 | -17,901 | 3,223,172,099 |
| EU | 1,053.87 | 26,273.52 | 2,053.33 | 2,659.69 | 333.16 | 1,474.78 | 1,208.97 | 2,313.41 | 399.40 | 451.23 | 252.56 | 329.93 | 56,878 | 3,880,388,9878 |

* data in the last two columns in euro.

*Source: COM(2009)548.*

Table 4.14. EAGF spending in 2009 (monthly data in million euro*)

| MS | 1.2007 | 2.2007 | 3.2007 | 4.2007 | 5.2007 | 6.2007 | 7. 2007 | 8. 2007 | 9.2007 | 10.2007 | 11.2007 | 12. 2007 | Supplemantary payments | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Austria | -39.80 | 611.55 | 3.29 | 77.02 | -17.90 | 3.89 | 0.64 | 55.70 | 1.48 | 3.47 | 5.69 | 3.54 | 1,648 | 708,571,648 |
| Belgium | 33.15 | 469.51 | 19.04 | 25.18 | -18.85 | 13.46 | -1.04 | 185.91 | 18.45 | 7.99 | 6.31 | 28.28 | 8,267 | 787,398,267 |
| Bulgaria | -2.88 | 81.35 | 0.07 | 35.79 | 47.33 | 32.08 | 0.10 | 14.51 | 0.14 | 4.10 | 3.58 | 4.82 | 5609 | 220,995,609 |
| Cyprus | -0.66 | 23.78 | 0.70 | -0.17 | 0.41 | 1.13 | 1.89 | 2.26 | 3.26 | 1.10 | 1.78 | 1.12 | 98 | 36,606,098 |
| Czech Republic | -24.76 | 400.06 | 37.86 | 77.36 | -11.83 | 5.94 | 3.90 | 1.88 | 1.09 | 2.53 | 6.06 | 6.09 | 5,268 | 506,185,268 |
| Denmark | -10.52 | 841.70 | 41.52 | 37.23 | 5.57 | 16.99 | -80.03 | 51.42 | 4.44 | 7.60 | 4.51 | 3.87 | 9,000 | 924,309,000 |
| Estonia | 0.06 | 50.54 | -0.03 | 0.06 | 0.48 | 0.13 | 0.18 | 0.98 | 0.62 | 0.23 | 0.25 | 1.03 | 2,997 | 54,532,997 |
| Finland | 4.12 | 496.74 | 1.55 | 26.09 | -2.46 | 27.59 | 3.77 | 16.54 | -3.71 | 10.95 | 15.34 | 3.16 | 5,952 | 599,685,952 |
| France | 661.73 | 7,154.20 | 61.19 | 41.14 | -121.00 | 16.68 | 50.85 | 720.81 | 56.12 | 117.50 | 166.06 | 111.89 | 2,968 | 9,037,172,968 |
| Greece | 1.73 | 1,902.63 | 9.83 | -117.40 | 314.66 | 6.37 | 15.85 | 139.69 | 12.81 | 33.30 | 114.86 | 8.92 | 28,831 | 2,443,278,831 |
| Germany | -242.81 | 5,406.14 | 24.16 | 22.37 | -167.12 | 7.87 | 15.73 | 668.83 | 8.87 | 34.95 | 85.62 | 23.40 | 6,608 | 5,888,016,608 |
| Hungary | -19.18 | 448.14 | 42.54 | 157.55 | 29.37 | 63.07 | 10.34 | 172.01 | 12.48 | 5.21 | 4.92 | 3.98 | 4,926 | 930,434,926 |
| Ireland | 575.92 | 641.48 | 10.54 | 6.67 | 32.17 | 3.96 | 4.27 | 9.20 | 10.22 | 4.95 | 6.15 | 13.45 | 5,522 | 1,318,985,522 |
| Italy | -83.57 | 1,444.75 | 569.11 | 730.05 | 321.80 | 292.36 | 252.85 | 619.28 | 141.19 | 88.98 | 105.14 | 246.12 | 3,868 | 4,728,063,868 |
| Latvia | 26.37 | 1.75 | 3.25 | 53.24 | 6.21 | 14.31 | 1.14 | 0.58 | 0.82 | 1.65 | 0.46 | 0.19 | 5,523 | 109,975,523 |
| Lithuania | -4.24 | 30.51 | 48.52 | 32.03 | 56.77 | 30.22 | 2.03 | 17.81 | 1.76 | 1.17 | 1.96 | 3.17 | 5,676 | 221,715,676 |
| Luxembourg | -0.53 | 33.48 | 0.17 | 0.17 | 0.20 | 0.04 | 0.01 | 0.83 | 0.05 | 0.14 | 0.12 | 0.02 | 250 | 34,693,250 |
| Malta | 0.00 | 0.00 | 0.00 | 0.03 | 0.01 | 0.02 | 0.20 | 2.39 | 0.00 | 0.49 | 0.36 | 0.07 | 387 | 3,564,387 |
| Netherlands | 3.02 | 579.99 | 89.58 | 51.01 | -11.37 | 37.88 | 36.76 | 144.10 | 14.75 | 33.83 | 47.96 | 18.86 | 35 | 1,046,370,035 |
| Poland | -71.95 | 782.33 | 248.11 | 238.79 | 182.06 | 73.15 | 19.18 | 306.21 | 55.45 | 6.54 | 8.41 | 6.96 | 5,584 | 1,855,245,584 |
| Portugal | 44.37 | 361.48 | 21.64 | 14.38 | 31.06 | 63.08 | 9.14 | 83.67 | 5.17 | 28.97 | 31.27 | 29.38 | 1,901 | 723,611,901 |
| Romania | -3.77 | 9.14 | 0.46 | 0.81 | -7.58 | 86.35 | 5.95 | 410.83 | 29.20 | 29.87 | 6.49 | 8.18 | 420 | 575,930,420 |
| Slovakia | -10.81 | 169.59 | 0.09 | 31.45 | 22.44 | 5.44 | 2.16 | 17.88 | 1.10 | 8.00 | 4.65 | 0.91 | 1,886 | 252,901,886 |
| Slovenia | 2.16 | 0.24 | 1.09 | 61.98 | 14.00 | 3.52 | 4.41 | 5.77 | 1.61 | 0.63 | 4.37 | 2.83 | 3,790 | 102,613,790 |
| Spain | 13.62 | 3,547.93 | 460.07 | 120.58 | 185.81 | 91.00 | 209.00 | 826.42 | 190.41 | 43.78 | 216.50 | 162.38 | 13,907 | 6,067,513,907 |
| Sweden | -9.86 | 630.02 | 45.77 | -5.05 | 4.99 | 6.78 | 2.66 | 25.10 | 1.35 | 12.94 | 4.55 | 5.03 | 1,824 | 724,281,824 |
| UK | -48.29 | 2,273.06 | 528.88 | 168.81 | 86.82 | 56.47 | 44.89 | 104.53 | 28.73 | 21.34 | 22.25 | 7.19 | 8,039 | 3,294,688,039 |
| EU | 792.63 | 28,392.10 | 2,269.00 | 1887.16 | 984.05 | 959.78 | 616.82 | 4605.13 | 597.86 | 512.20 | 875.62 | 704.84 | 140,785 | 43,197,343,785 |

* data in the last two columns in euro.

*Source: COM(2010)502.*

Table 4.15. EAGF spending in 2010 (monthly data in million euro*)

| MS | 1.2010 | 2.2010 | 3.2010 | 4.2010 | 5.2010 | 6.2010 | 7.2010 | 8.2010 | 9.2010 | 10.2010 | 11.2010 | 12.2010 | Supplementary payments | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Austria | 405.30 | 193.24 | 6.83 | 76.51 | 6.61 | 0.95 | 3.35 | 16.15 | 1.38 | 1.88 | 4.35 | 3.91 | 9,404 | 720,469,404 |
| Belgium | 374.30 | 148.46 | 4.32 | 17.57 | 42.40 | 10.04 | 13.00 | 4.65 | 0.77 | 6.79 | 5.19 | 19.59 | 216 | 647,080,216 |
| Bulgaria | -1.04 | 199.42 | 4.35 | 26.55 | 29.61 | 9.37 | 5.04 | 1.18 | 1.43 | 5.75 | 2.67 | 1.82 | 3,300 | 286,153,300 |
| Cyprus | -0.21 | 21.55 | 6.43 | 0.72 | 4.26 | 0.33 | 1.05 | 2.25 | 1.05 | 0.29 | 0.90 | 3.71 | 173 | 42,334,173 |
| Czech Republic | 338.78 | 170.94 | 28.53 | 7.08 | 2.17 | 3.71 | 2.60 | 13.19 | 13.98 | 4.43 | 2.61 | 2.93 | 6,536 | 590,956,536 |
| Denmark | 476.58 | 436.89 | 18.38 | 13.05 | 18.23 | 2.46 | -2.51 | 13.04 | 1.59 | 1.06 | -2.18 | 0.55 | 5,839 | 977,145,839 |
| Estonia | 0.11 | 60.70 | 0.48 | 0.30 | 0.35 | 0.29 | 1.68 | 3.01 | 0.23 | 0.09 | -0.88 | 0.11 | 6,119 | 66,476,119 |
| Finland | 0.06 | 513.59 | 3.64 | 4.19 | 3.46 | 34.86 | 14.14 | 11.79 | 2.20 | 2.46 | 1.32 | 2.10 | 3,483 | 593,813,483 |
| France | 5,211.27 | 2,346.98 | 47.99 | 74.05 | 58.67 | 53.82 | 31.42 | 448.78 | 88.04 | 113.65 | 110.30 | 86.96 | -18,005 | 8,671,911,995 |
| Germany | -114.26 | 5,376.89 | 26.18 | 12.29 | 28.56 | 37.60 | 3.33 | 98.89 | 18.80 | 24.03 | 36.62 | 16.50 | 5,173 | 5,565,435,173 |
| Greece | -8.96 | 2.40 | 1.34 | 6.90 | 2,178.99 | -2.03 | -21.50 | 118.47 | 11.98 | 35.63 | 7.66 | 20.20 | 4,630 | 2,351,084,630 |
| Hungary | 500.52 | 159.82 | 8.90 | 21.57 | 30.05 | 45.91 | 65.78 | 27.00 | 37.68 | 12.25 | 11.24 | 8.77 | -36,231 | 929,453,769 |
| Ireland | 867.98 | 395.68 | 5.23 | 7.38 | 16.15 | 4.13 | 2.47 | 4.61 | 1.24 | -17.21 | 0.76 | 4.88 | 8,383 | 1,293,308,383 |
| Italy | 2,326.14 | 864.99 | 218.57 | 185.44 | 230.83 | 146.21 | 223.82 | 183.05 | 114.56 | 40.75 | 88.39 | 205.82 | 7,844 | 4,828,577,844 |
| Latvia | 51.30 | 3.21 | 0.24 | 21.55 | 15.19 | 2.08 | 3.37 | 0.14 | 0.06 | 0.00 | 1.89 | 0.29 | 2,635 | 99,322,635 |
| Lithuania | 55.39 | 9.02 | 20.58 | 117.89 | 24.77 | 11.12 | 8.96 | 2.97 | 1.00 | 0.38 | 0.83 | 7.45 | 2,769 | 260,362,769 |
| Luxembourg | 23.77 | 9.50 | 0.14 | 0.46 | 0.76 | 0.17 | -0.32 | 0.23 | 0.02 | 0.15 | -0.82 | 0.02 | -1,319 | 34,083,681 |
| Malta | 0.02 | 0.00 | 1.46 | 0.00 | 1.55 | 0.10 | 0.23 | 0.19 | 0.13 | 0.26 | 0.19 | 0.02 | 442 | 4,151,442 |
| Netherlands | 288.98 | 280.60 | 71.46 | 57.28 | 50.69 | 27.72 | 24.60 | 10.36 | 9.49 | 12.51 | 16.94 | 43.83 | 13,110 | 894,473,110 |
| Poland | -64.51 | 944.02 | 412.36 | 326.65 | 128.51 | 64.21 | -65.97 | 79.18 | 29.40 | 19.89 | 24.70 | 6.54 | 1,824 | 1,904,981,824 |
| Portugal | 21.17 | 396.32 | 1.27 | 25.11 | 19.51 | 65.05 | 44.78 | 74.03 | 11.52 | 6.98 | 29.46 | 42.22 | 1,400 | 737,421,400 |
| Romania | 303.35 | 8.06 | 0.50 | 3.13 | 31.51 | 76.25 | 52.75 | 131.10 | 15.09 | 28.92 | 4.70 | 8.45 | 1,605 | 663,811,605 |
| Slovakia | -5.14 | 224.74 | 0.10 | 15.25 | 6.54 | 1.72 | 1.43 | 7.93 | 10.90 | 1.50 | 2.74 | 2.02 | 2,365 | 269,732,365 |
| Slovenia | 0.09 | 12.66 | 56.26 | 1.86 | 3.47 | 7.79 | 3.27 | 1.70 | 0.56 | 0.51 | 0.64 | 2.57 | 5,408 | 91,385,408 |
| Spain | 2,200.29 | 1,889.55 | 156.88 | 70.75 | 247.36 | 102.97 | 234.13 | 503.47 | 177.00 | 50.30 | 109.99 | 182.55 | -268,643 | 5,924,971,357 |
| Sweden | -9.88 | 600.66 | 50.24 | 26.11 | 25.40 | 15.75 | 0.15 | 2.15 | 1.95 | 0.76 | 7.60 | 3.13 | 8,341 | 724,028,341 |
| UK | -38.87 | 2,455.92 | 416.13 | 159.35 | 106.49 | 85.10 | 43.80 | 91.91 | 5.31 | 0.47 | -182.09 | -1.36 | -6,720 | 3,142,153,280 |
| EU | 13,202.52 | 17,725.80 | 1,568.80 | 1,278.99 | 3,312.09 | 807.68 | 694.86 | 1,851.42 | 557.36 | 354.48 | 285.73 | 675.59 | -229,918 | 42,315,080,082 |

* data in the last two columns in euro.

*Source: COM(2011)673.*

Table 4.16. EAGF spending in 2011 (monthly data in million euro*)

| MS | 1.2011 | 2.2011 | 3.2011 | 4.2011 | 5.2011 | 6.2011 | 7.2011 | 8.2011 | 9.2011 | 10. 2011 | 11. 2011 | 12. 2011 | Supplementary payments | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Austria | 2.43 | 608.87 | 1.12 | 76.11 | 10.81 | 30.1 | 0.97 | 4.71 | 1.38 | 3.8 | 2.97 | 2.51 | 3,095 | 745,783,095 |
| Belgium | 135.28 | 415.56 | 4.54 | 4.06 | 24.93 | -0.52 | 6.41 | -0.25 | 6.49 | 8.9 | 10.97 | 18.42 | 8,583 | 634,798,583 |
| Bulgaria | 0.34 | 11.54 | -4.8 | 1.03 | 182.43 | 87.18 | 16.63 | 0.78 | 0.71 | 2.25 | 0.51 | 3.06 | 7,954 | 301,667,954 |
| Cyprus | -0.06 | 1.77 | 9.40 | 13.54 | 1.69 | 0.24 | 1.44 | 5.86 | 0.78 | 1.67 | 4.58 | 1.16 | 610 | 42,082,610 |
| Czech Republic | 1.33 | 587.9 | 36.86 | 20.43 | -1.76 | -3.46 | 1.54 | 12.44 | 2.55 | 2.81 | 4.93 | 1.93 | 3,043 | 667,503,043 |
| Denmark | -2.57 | 897.46 | 19.89 | 11.78 | 16.57 | -2.04 | 1.04 | 0.62 | 3.67 | 4.19 | 3.36 | 4.06 | 3,357 | 958,033,357 |
| Estonia | 0.1 | 71.69 | -0.15 | -1.93 | -0.72 | 0.72 | 0.56 | 1.83 | 0.45 | 0.29 | 0.65 | 1.06 | 3,780 | 74,553,780 |
| Finland | 1.52 | 514.5 | 1.12 | -9.97 | -4.44 | -12.81 | 0.3 | 2.11 | 2.52 | 0.52 | 2.64 | 0.66 | 2,934 | 498,672,934 |
| France | 3,163.75 | 4,537.27 | 71.15 | 60.71 | 298.38 | 40.36 | 79.95 | 217.54 | 61.57 | 89.53 | 71.61 | 62.49 | -1,639,069 | 8,752,670,931 |
| Germany | 13.8 | 5,227.46 | 76.99 | -16.83 | -1.91 | -19.23 | 15.29 | 56.61 | 29.86 | 42.13 | 63.62 | 32.75 | 3,083 | 5,520,543,083 |
| Greece | 980.99 | 990.33 | -85.13 | 189.41 | 5.26 | 67.43 | 9.87 | -33.96 | 10.34 | 64.75 | 7.2 | 22.4 | -16,970 | 2,228,873,030 |
| Hungary | 423.7 | 435.12 | 11.87 | 3.9 | 42.47 | 17.55 | 17.48 | 60.5 | 10.82 | 6.82 | 22.41 | 10.61 | 87,563 | 1,063,337,563 |
| Ireland | 553.66 | 573.69 | 51.12 | 61.55 | 12.94 | 3.82 | 9.64 | 3.3 | 5.95 | 4.52 | 3.9 | 25.18 | 3,415 | 1,309,273,415 |
| Italy | 1,420.79 | 1,476.74 | 130.73 | 241.2 | 208.45 | 231.53 | 168.26 | 375.05 | 70.29 | 57 | 94.53 | 272.06 | 4,761 | 4,746,634,761 |
| Latvia | 36.88 | 15.53 | 1.41 | 30.07 | 16.46 | 4.63 | 2.28 | 2.12 | 0.52 | 0.1 | 1.47 | 0.53 | 6,965 | 112,006,965 |
| Lithuania | 55.35 | 58.33 | 105.61 | 15.95 | 13.4 | 11.28 | 6.57 | 4.84 | 2.09 | 2.21 | 1.67 | 0.6 | 899 | 277,900,899 |
| Luxembourg | 16.925 | 16.612 | 0.273 | 0.212 | 0.147 | 0.005 | 0.059 | 0.221 | 0.017 | 0.061 | 0.018 | 0.015 | 674 | 34,565,674 |
| Malta | 0 | 0.027 | 0.003 | 0.072 | 3.468 | 0.106 | 0.092 | 0.033 | 0.04 | 0.114 | 0.041 | 0.105 | 335 | 4,101,335 |
| Netherlands | 3.54 | 219.49 | 61.71 | 170.37 | 118.72 | 128.58 | 40.45 | 62.64 | 17.9 | 3.26 | 4.5 | 45.64 | 62 | 876,800,062 |
| Poland | 23.85 | 750.41 | 350.04 | 599.29 | 321.44 | 189.72 | 61.27 | 54.66 | 31.99 | 20.97 | 125.48 | 8.45 | 7,480 | 2,537,577,480 |
| Portugal | 17.04 | 482.59 | 27.76 | 45.9 | 38.74 | 6.93 | 27.19 | 41.36 | 6.88 | 18.56 | 14.74 | 22.08 | 4,181 | 749,774,181 |
| Romania | 172.51 | 177.14 | -12.1 | 125.8 | 110.46 | 34.86 | 58.43 | 47.21 | 15.16 | 16.24 | 13.61 | 9.65 | 3,165 | 768,973,165 |
| Slovakia | 2.72 | 247.4 | 4.37 | 12.46 | 6.9 | 2.48 | 4.23 | 5.17 | 2.76 | 4.5 | 3.81 | 1.36 | 5,180 | 298,165,180 |
| Slovenia | 0.19 | 12.33 | 49.77 | 21.17 | 2.81 | 11.42 | 1.19 | 0.66 | 0.98 | 0.16 | 0.64 | 3.07 | 7,622 | 104,397,622 |
| Spain | 1,490.96 | 2,899.59 | 34.26 | 92.95 | 225.84 | 284.91 | 111.79 | 246.67 | 50.47 | 40.96 | 151.21 | 177.29 | -506,772 | 5,806,393,228 |
| Sweden | 3.33 | 662.76 | 5.89 | 2.7 | 19.79 | 4.44 | -1.47 | 0.69 | -0.58 | 0.63 | 5.2 | 2.18 | 5,200 | 705,565,200 |
| UK | 9 | 2517.33 | 142.55 | 146.43 | 117.81 | 121.6 | 101.78 | 84.95 | 21.78 | 9.64 | 7.91 | 4.14 | 1,472 | 3,284,921,472 |
| EU | 8,527.36 | 24,409.44 | 1,096.26 | 1,918.37 | 1,791.09 | 1,241.83 | 743.24 | 1,258.37 | 357.38 | 406.58 | 624.18 | 733.46 | -1,987,398 | 43,105,570,602 |

* data in the last two columns in euro.

*Source: COM(2012)484.*

Table 4.17. EAGF spending in 2012 (monthly data in million euro*)

| MS | 1.2012 | 2.2012 | 3.2012 | 4.2012 | 5.2012 | 6.2012 | 7.2012 | 8.2012 | 9.2012 | 10.2012 | 11.2012 | 12.2012 | Supplementary payments | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Austria | -4.42 | 620.13 | 1.30 | 1.26 | 89.06 | 12.75 | 2.24 | 0.58 | 0.88 | 2.55 | 1.55 | 3.42 | 872 | 731,300,872 |
| Belgium | 291.59 | 250.20 | 1.95 | 19.70 | 17.94 | 6.35 | 18.22 | 1.96 | 0.18 | 16.31 | 3.50 | 15.36 | 8,110 | 643,268,110 |
| Bulgaria | 1.18 | 16.43 | 324.88 | 19.73 | 1.69 | 18.66 | 1.61 | -5.84 | 3.45 | 1.73 | 12.86 | 13.00 | 2,531 | 409,382,531 |
| Cyprus | -0.05 | 15.93 | 5.89 | 4.63 | 0.71 | 0.35 | 3.65 | 0.30 | 0.20 | 1.99 | 3.15 | 0.30 | 115,682 | 37,185,682 |
| Czech Republic | 0.80 | 650.93 | 54.07 | 35.03 | 3.78 | 1.80 | 0.75 | 0.68 | 0.83 | 2.24 | 1.94 | 3.39 | 12,288,458 | 768,528,458 |
| Denmark | -6.66 | 868.49 | 19.73 | 16.70 | 8.82 | 5.68 | 2.59 | 1.29 | 1.31 | 0.18 | 0.18 | 2.07 | 39,782 | 920,419,782 |
| Estonia | 0.03 | 81.62 | 0.13 | 0.16 | 0.03 | 0.17 | 0.06 | 0.17 | 1.48 | 1.18 | -0.45 | 0.07 | 6,590,138 | 91,240,138 |
| Finland | 0.82 | 514.24 | 1.50 | 2.43 | 1.87 | 14.21 | 1.89 | 2.73 | 2.18 | 6.72 | 1.50 | 0.14 | 1,344 | 550,231,344 |
| France | 3,860.83 | 3,848.65 | 78.46 | 91.30 | 211.47 | 48.38 | 49.80 | 205.02 | 50.73 | -27.29 | 112.74 | 43.82 | 3,710 | 8,573,913,710 |
| Germany | 9.63 | 5,230.02 | 25.20 | 20.69 | 16.55 | 8.99 | 13.06 | 44.30 | 12.06 | 24.47 | 9.36 | 20.11 | 2,721 | 5,434,442,721 |
| Greece | 980.11 | 1,002.49 | -106.31 | 2.38 | 220.75 | 89.80 | 4.57 | 52.75 | 3.61 | 3.99 | 4.35 | 33.13 | 1,207 | 2,291,621,207 |
| Hungary | 493.16 | 19.95 | 456.37 | 55.90 | 21.09 | 40.27 | 10.58 | 15.96 | 12.77 | 3.04 | 19.13 | 7.98 | -52,318 | 1,156,147,682 |
| Ireland | 575.18 | 618.47 | 41.50 | 24.05 | 6.18 | 9.25 | 1.25 | 2.02 | 4.56 | 0.81 | 1.47 | -1.07 | -6,058 | 1,283,663,942 |
| Italy | 1,631.39 | 1,210.64 | 236.10 | 373.01 | 114.26 | 230.38 | 57.07 | 323.73 | 71.13 | 9.63 | 108.78 | 208.08 | 9,767 | 4,574,209,767 |
| Latvia | 46.92 | 44.69 | 4.02 | 20.16 | 2.47 | 1.02 | 1.25 | 0.36 | 5.18 | 0.14 | 0.24 | 0.15 | 211,516 | 126,811,516 |
| Lithuania | 92.79 | 68.68 | 4.18 | 101.13 | 35.58 | 8.76 | 1.21 | 3.12 | 0.98 | 5.12 | 0.75 | 1.09 | 3,182,047 | 326,572,047 |
| Luxembourg | 16.00 | 16.33 | 0.37 | 0.24 | 0.17 | 0.01 | 0.05 | 0.20 | 0.05 | 0.03 | 0.13 | 31.00 | 33,608,834 | 98,186,668 |
| Malta | 0.00 | 0.04 | 1.07 | 0.22 | 0.95 | 1.81 | 0.03 | 0.11 | 0.10 | 0.02 | -0.06 | 0.65 | 288,134 | 5,225,134 |
| Netherlands | 153.17 | 430.50 | 66.89 | 101.87 | 43.75 | 14.52 | 9.74 | 10.47 | 12.00 | 1.70 | 3.38 | 18.72 | 115,682 | 37,185,682 |
| Poland | 24.58 | 824.50 | 782.48 | 381.70 | 381.24 | 131.85 | 71.17 | 82.96 | 37.01 | 17.77 | 70.22 | 14.18 | 12,451,657 | 2,832,111,657 |
| Portugal | 112.09 | 388.14 | -0.58 | 22.40 | 23.54 | 20.58 | 22.46 | 90.20 | 10.27 | 7.85 | 36.75 | 17.85 | -1,282,858 | 750,267,142 |
| Romania | 419.44 | 2.39 | 416.01 | 50.46 | 16.77 | 5.64 | 3.66 | 18.17 | 1.36 | 2.63 | 15.38 | 39.39 | 594 | 991,300,594 |
| Slovakia | 0.56 | 288.21 | 0.52 | 13.43 | 1.77 | 3.72 | 4.42 | 8.83 | 3.18 | 1.34 | 0.87 | 1.29 | 3,637,830 | 331,777,830 |
| Slovenia | 1.31 | 9.36 | 67.73 | 22.75 | 0.89 | 8.23 | 5.95 | 0.57 | 0.29 | 1.26 | 1.71 | 4.33 | 397,027 | 124,777,027 |
| Spain | 1,914.21 | 2,652.35 | 12.66 | 139.14 | 271.28 | 84.75 | 79.75 | 348.28 | 8.94 | -13.96 | 129.68 | 157.74 | 278,764 | 5,785,098,764 |
| Sweden | 2.39 | 583.07 | 14.13 | 14.11 | 7.03 | 5.62 | 1.30 | 1.50 | 4.28 | 0.22 | 1.62 | 4.52 | 9,725 | 639,799,725 |
| UK | 8.13 | 2,653.78 | 244.15 | 150.83 | 98.23 | 41.48 | 40.37 | 34.05 | 12.40 | 8.37 | 4.15 | 12.48 | 6,423 | 3,308,426,423 |
| EU | 10,625.18 | 22,910.23 | 2,754.40 | 1,685.41 | 1,597.87 | 815.03 | 408.70 | 1,244.47 | 261.41 | 80.04 | 544.89 | 653.19 | 71,911,321 | 42,823,096,155 |

* data in the last two columns in euro.

*Source: COM(2013)657.*

## 5. Impact assessment of the EU "agricultural budget" for 2014-2020 on the financial situation of national agriculture and the entire Polish economy

***Methodological aims and assumptions of the analysis***

This study makes an attempt to quantify the macro-economic effects of expenditure allocated to the agricultural sector under the Community budget for 2014--2020. The financial situation shall mean the influence of the European funds on the growth in GDP and employment in the agricultural sector and in the economy as a whole.

In line with the decisions taken by the European Council in February 2013. the funds for direct payments in Poland will, over this period. amount to a total of EUR 18,739 million, while funds for the Rural Development Programme (RDP) to EUR 9,724.2 million. As far as the general criteria of awarding payments and their expected results are known. at the present programming stage it is yet unclear how the funds will be divided into individual measures under the RDP. What we do know are the measures initially proposed by the Ministry of Agriculture and Rural Development. These include the following measures:

- "Transfer of knowledge and innovation"
- "Advisory services"
- "Quality schemes for agricultural products and foodstuffs"
- "Modernisation of agricultural holdings"
- "Processing and marketing of agricultural products"
- "Land reparcelling"
- "Restoring agricultural production potential damaged by natural disasters and catastrophic events and introduction of appropriate prevention actions"
- "Premium for young farmers"
- "Restructuring of small agricultural holdings"
- "Support for starting-up non-agricultural activities"
- "Basic services and village renewal in rural areas"
- "Afforestation and creation of woodland"
- "Setting up of producer groups"
- "Agri-environment-climate programme"
- "Organic farming"
- "Payments for LFA"
- "Cooperation"
- "LEADER"

Please note that the majority of the aforementioned measures overlap with those implemented under RDP 2007-2013. The new ones are "Transfer of knowledge and innovation". "Restructuring of small agricultural holdings" and "Cooperation". Thus RDP structure remains practically unchanged as compared to the previous program-

ming period. This. in turn. implies that for the needs of this analysis it may be assumed that also the structure of spending under RDP will remain very similar. The above premise is vital since it makes it possible to estimate the part of funds set out in the RDP budget that will be allocated to trainings. private investments or investments in public infrastructure. which. on the other hand. allows for adopting in the analysis the approach applied earlier by Rokicki and Socha (2008) or Cieślik and Rokicki (2013).

This methodology is based on supply approach which differs from the majority of analyses devoted to the assessment of the effects of structural intervention in Poland. It assumes two-level analysis of the European funds impact on the economy. The first stage, covers a simultaneous estimation of a system of two equations consisting of a modified regional Cobb-Douglas production function and regional labour demand function derived on the basis of the former. Whereas on the second stage, the elasticities of individual production factors estimated at the first stage are used to make an estimation of the percentage change in production and employment in effect of a change in the resources of the given production factor.

In order to acquire a sufficient number of observations to estimate the elasticity of the production function in the agriculture sector, the estimations are made based on the data from the voivodeship level. Consequently the modified regional Cobb-Douglas production function takes in this case the following form:

$$Y_{ijt} = A_{it}^{\theta} \underset{pr}{K}_{ijt}^{\alpha} \underset{pu}{K}_{ijt}^{\beta} H_{it}^{\delta} L_{ijt}^{\phi} \qquad (5.1)$$

where *I* stands for region. *j* stands for PKD (Polish Classification of Activities) section. and *t* stands for the year.

As in the work of Cieślik and Rokicki (2013) the size of regional product (Y) is thus determined by the advancement level (A), private capital resources ($K_{pr}$), public capital resources ($K_{pu}$), employment size (L) as well as human capital resources (H). Because the agricultural budget does not provide for investments in road infrastructure. this factor was omitted herein unlike in the above-quoted work of Cieślik and Rokicki (2013). Moreover, bearing in mind the specificity of the agricultural sector it was assumed that the advancement level is fixed. This means that in a dynamic version of the equation (1), which is estimated under the analysis. this parameter equals 0. The estimated parameters attendant to individual production factors $\alpha, \beta, \chi, \delta,$ and $\phi$ measure elasticity of the size of regional product against a given production factor.[1] For example, 1% of the private capital resource will translate into α% of growth in the size of regional product assuming that the amount of the remaining production factors remains unchanged.

The second estimated equation is the equation determining labour demand (L) as the function of marginal product of labour and real wages (neoclassical approach).

[1] When estimating the regional production functions, just like de la Fuente (2002), we accept the possibility that the returns to scale will be alternating. In other words, we do not restrict the sum of individual parameters with a statement that it must equal one.

Comparison of the marginal value of labour and real wages in the region enables to derive the regional labour demand function, which after transformation in relation to L allows for calculation of the employment size in the state of equilibrium, as a function of the regional advancement level (A), private capital resources ($K_{PR}$), public capital resources ($K_{PU}$), public infrastructure resources (P), human capital resources (H) as well as regional wages (W):

$$L^*_{ijt} = \left( \frac{\phi A_{it}^{\theta} \, K_{pr\,ijt}^{\alpha} \, K_{pu\,ijt}^{\beta} \, H_{it}^{\delta}}{W_{ijt}} \right)^{1/(1-\phi)} \tag{5.2}$$

***Estimation results at the first stage of the analysis***

The estimation of the theoretical model uses a set of annual panel data for 16 voivodeships (corresponding to the NUTS2 classification level) that cover the 2003--2010 period and refer to the agriculture section, in line with the 2-digit classification of PKD section. Most of the statistical data comes from the Central Statistical Office (gross value added, employment, investments), Labour Force Survey (education). The choice of the 2003-2010 period is related to changes that took place in the Polish agricultural sector after our accession to the EU. It is assumed that the production function parameters should be considerably different from those recorded before 2003 (this year is the reference point for dynamics analysis).

Table 5.1 shows the results of estimation of the above-described system of equations. These results point to a positive correlation between production in the agricultural sector and employment. fixed assets in the private sector and education of the employees. However, growth in capital assets in the public sector is, at the same time, negatively correlated with the production size, which, after all, is most probably a consequence of a drop in the significance of producers included in the public sector with simultaneous growth in production in agriculture. In the case of an equation describing the labour market, the estimation results point to a positive correlation between employment growth and the size of capital resources in the private sector, with simultaneous negative correlation with a growth in wages and the level of wages and employment in the previous year (which is in line with the expectations). It should be noted that there is no direct correlation between employment growth and the production level in the previous year. This may, on the one hand, be related to lack of certainty among employers as regards further increase in production. On the other, it may point to existing reserves in the work efficiency of the already employed workers.

The results of the estimation show that the funds allocated to investments in the private sector should translate both into employment growth in agriculture and production growth. Hence both direct and indirect effects are referred to here. Measures aimed at increasing the human capital of persons employed in agriculture should also bring a positive direct effect. The estimates showing the size of EU funds impact on

production and employment in the agriculture sector are done under the next stage of the analysis.

Table 5.1. Results of the production function estimation and labour demand equation in 1995-2007

| **Specification** | **All regions together** | |
|---|---|---|
| Dependent variable | Production | Employment |
| employment | 0.576*<br>(1.74) | - |
| wages | - | -0.373***<br>(-5.13) |
| fixed assets<br>(public sector) | -0.159***<br>(-5.88) | 0.003<br>(0.23) |
| fixed assets<br>(private sector) | 0.103***<br>(2.60) | 0.090***<br>(3.19) |
| human capital | 1.097**<br>(2.47) | -0.124<br>(-0.70) |
| log wages | - | -0.419***<br>(-5.21) |
| log production | - | -0.064<br>(-1.59) |
| log employment | - | -0.696***<br>(-6.59) |
| observations | 112 | 112 |

*Source: Author's own calculations. Significance levels: .01 - ***; .05 - **; .1 - *; statistics in brackets. $R^2$ is not given since it does not have explanatory value in the estimation done with the use of 3sls method.*

***Results of estimations under the second stage of the analysis***

Under the second stage. the elasticities of production factors estimated at the first stage were respectively multiplied by increases in logarithms of the size of resources for each of production factors. These increases should be the effect of measures implemented from the funds of the agricultural budget for 2014-2020. As it has been already mentioned. the performed analysis considers both direct and indirect results of intervention. Direct effects follow from a change in the size of the resources of a given production factor, while indirect effects follow from a change in the employment size. Since the growth of employment size leads also to a production growth then the cumulated effect is a total sum of direct and indirect effect.

Given the fact that at present the division of funds from the agricultural budget between individual measures suggested in the draft RDP is not yet known. the estimates made are based on the following assumptions. First of all. it is assumed that the division of funds between the main types of intervention in 2014-2020 will be similar to that in 2007-2013. Thus, basing on the planned allocation of funds under the cur-

rently applicable financial perspective it has been calculated what part of funds will be allocated to the investments in agriculture (public and private sector) and measures aimed at increasing the human capital resources. It turns out that that the sum of funds allocated to investments in the private sector constitute only 15.3%, in the public sector 3.7% and outlays on trainings 0.2% of total funds. Other measures either do not have an investment character (early retirement) or are related to rural development and not directly to agriculture.

Bearing in mind that according to the Council decision the amount of funds allocated to RDP for 2014-2020 was fixed at the level of EUR 9724.2 million. it needs to be assumed that the outlays on investments in the private sector will amount to EUR 1487.4 million. The outlays on investments in the public sector reach the amount of EUR 355.9 million while funds for trainings EUR 22.3 million. What is important. the estimates at the second stage of the analysis considered also the potential impact of direct payments. In this respect. the study based on the Czubak and Jędrzejak (2011) paper, according to which 25% of funds received by farmers under direct payments is allocated to investments. In line with the above this study assumes that if the planned outlays on payments in 2014-2020 amount to EUR 18,739 million. the investment in the private sector should amount to EUR 4,684.7 million. In order to estimate the effects of agricultural budget impact the above values were converted into PLN adopting the current exchange rate at the level of 4.3 PLN/EUR.

Table 5.2 shows the results of estimates of the EU agricultural budget for 2014--2020 on production and employment in the agricultural sector. To this end, it was necessary to additionally calculate the change in the given production factor resources owing to the funds received from the Community budget. These estimates were based on data concerning the resources of a given factor in 2011 (last available data). Thus it is assumed that the actual change in the resources caused by private investments funded from direct payments and measures under RDP will be slightly lower. However. the difference should not significantly impact the results of the analysis.

As it is clear from Table 5.2, the direct increase in production caused by an increase in the human capital and physical capital resources should amount to less than 0.6%. The direct effect caused by employment will be slightly higher – 0.88%. On the whole. the production growth in the agricultural sector following from the impact of the agricultural budget for 2014-2020 should amount to less than 1.5%. Whereas the employment growth in the sector should be slightly higher, i.e. ca. 1.8%.

Given the fact that the value added produced in the agricultural sector in 2012 amounted to only slightly above 4%. it needs to be assumed that on the scale of the entire economy the agricultural budget impact on production and employment will be minimal. At least considering the supply approach to macro-economic analysis. Since it is obvious that in the short-run the inflow of significant funds from external sources should cause positive supply effect. This was not the object of the following analysis. though.

Table 5.2. Impact of funds included in the Community Support Framework 2004-2006 on production and employment in the agricultural sector

| Production factor | Change in the resources of the factor owing to the EU agricultural budget | Production elasticity | Direct production growth | Employment elasticity | Employment growth | Indirect production growth | Total production growth |
|---|---|---|---|---|---|---|---|
| Human capital | 0.001 | 1.097 | 0.001 | statistically insignificant | 0 | 0 | 0.001 |
| Private physical capital | 0.199 | 0.103 | 0.020 | 0.090 | 0.018 | 0.009 | 0.020 |
| Public physical capital | 0.096 | -0.159 | -0.015 | statistically insignificant | 0 | 0 | -0.015 |
| Employment | - | 0.493 | - | - | - | - | - |
| Total | - | - | 0.58% | - | 1.79% | 0.88% | 1.46% |

*Source: Author's own calculations.*

But in order to estimate the potential opportunities for production and employment growth in the agriculture sector, an analysis of 7 alternative scenarios was conducted. These scenarios assumed increase in private investments without simultaneous decrease in outlays for human capital or public investments.

The first scenario assumes an increase in the share of investments in the funds obtained under direct payments from 25% adopted in the baseline scenario to 50%. The second scenario makes a premise that 50% of funds paid for LFA will be allocated to investments. The third scenario provides for an increase in funds for private investments under the RDP by 25%. The fourth scenario is a scenario assuming cumulating of effects adopted under scenarios 1-3. The fifth scenario makes a premise that 25% of RDP funds will be moved to direct payments (according to the latest announcements of the minister of agriculture), and simultaneously all other assumptions of the baseline scenario remain valid. Thus an increase in funds for direct payments would be done at the expense of e.g. early retirement. The sixth scenario constitutes an analysis of the fifth scenario, but with the postulation that 50% of payments will be allocated to investments. Finally, the seventh scenario cumulates the effects of scenarios: 2, 3 and 6, i.e. moving 25% of funds from the RDP to direct payments, an increase in private investments under the RDP by 25% and adoption of a premise that 50% of funds from direct payments and LFA will be allocated to investments. Table 5.3 shows the results of the analysis.

Table 5.3. Impact of funds included in the Community Support Framework 2004-2006 on production and employment in the agricultural sector - alternative scenarios

| Specification | S. 1 | S. 2 | S. 3 | S. 4 | S. 5 | S. 6 | S. 7 |
|---|---|---|---|---|---|---|---|
| Employment growth | 2.94% | 1.97% | 1.89% | 3.18% | 1.95% | 3.22% | 3.45% |
| Direct production growth | 1.90% | 0.78% | 0.69% | 2.18% | 0.76% | 2.22% | 2.48% |
| Indirect production growth | 1.45% | 0.97% | 0.93% | 1.57% | 0.96% | 1.59% | 1.70% |
| Total production growth | 3.35% | 1.75% | 1.62% | 3.75% | 1.72% | 3.80% | 4.19% |

*Source: Author's own calculations.*

As it is clear from Table 5.3, all scenarios that are conductive to investment growth in the private sector should. Simultaneously, cause production and employment growth as compared to the baseline scenario. The assumption that the share of investment in the funds received by farmers under direct payments will increase from 25% to 50% has a particularly significant impact. The results of scenario 5 are also tremendously interesting, according to that results the movement of 25% of funds from RDP to direct payments (without simultaneous decrease in the size of funds allocated to private investments under RDP) would lead to an increase in production and employment as compared to the baseline scenario. Such a situation would take place even if the present amount of investments funded from direct payments at the level of 25% would be kept.

The results of the last scenario should be also noted as it cumulates all the positive assumptions on the possibilities of making private investments. A comparison of the results of this scenario with the results of the baseline scenario shows that employment growth could be two times higher, and the production growth even three times higher in the case of an alternative scenario.

## 6. Impact assessment of the EU "agricultural budget" for 2014-2020 on the financial situation of the Polish farms

Annual national envelope for direct payments intended for Poland in the years 2015-2020 is higher than in the period 2007-2013, but due to the introduction of new payment system the amount received by individual farms can vary considerably as it will be made up of several different payment titles for different types of eligibility criteria and rates per 1 ha UAA.

Based on the consensus concerning the reform of the CAP there can be considered three options of the total amount that can be spent on direct payments. In this chapter, however, the analysis is limited to only two of them, considering that the allocation of part of Pillar I budget to Pillar II is impossible in Poland due to the low level of the rates of direct payments compared to the EU average. Therefore, analysed were only the option, in which direct payments are executed only within the national enveloped allocated for Poland and the one, in which the Polish envelope is increased by a quarter funds allocated to Poland for development of rural areas (Table 6.1).

Table 6.1. Polish national envelope earmarked for direct payments in the years 2015-2020 (in euro)

| Option | Option 1 (only national envelop) | Option 2 (envelop + 25% from Pillar II) |
|---|---|---|
| 2015 | 2,970,020,000 | 3,205,447,646 |
| 2016 | 2,987,267,000 | 3,222,385,034 |
| 2017 | 3,004,501,000 | 3,239,303,059 |
| 2018 | 3,021,602,000 | 3,256,081,586 |
| 2019 | 3,041,560,000 | 3,275,711,220 |
| 2020 | 3,061,518,000 | 3,295,323,448 |
| Total | 18,086,468,000 | 19,494,251,992 |

*Source: Own elaboration based on data in Tables 1.3 and 1.4.*

Average rate per 1 ha of arable land in Poland would reach more than 211 euro in option 1 and more than 230 euros in option 2 (Table 6.2). The Table highlights the rate in 2019. since according to the projected regulation on direct payments this rate would be used to calculate the rates of certain payments covered by this analysis ( in such cases the national envelope for 2019 would be divided by the number of hectares covered by payments in 2015).

It should be noted that the average rates are not the rates that actually will be received by all beneficiaries of direct payments in Poland. but they are only the averaged total amount of payment per 1 ha obtained the Polish farmers. Due to the introduction of a new system of direct payments average rate will vary and depend on eligibility of a given beneficiary to receive different types of payments.

Table 6.2. Average payment rate per 1 ha UAA (in euro)

| Option | 2015 | 2016 | 2017 | 2018 | **2019** | 2020 |
|---|---|---|---|---|---|---|
| Option 1 (only national envelope) | 211.8 | 213.0 | 214.2 | 215.5 | **216.9** | 218.3 |
| Option 2 (envelope + 25% from Pillar II) | 239.8 | 229.8 | 231.0 | 232.2 | **233.6** | 235.0 |

*Source: Own elaboration.*

## 6.1. Payment for young farmers

As it was mentioned in the first chapter, additional payments for young farmers are an obligatory element of new direct payments scheme. Up to 2% of the envelope can be assigned for these payments. In the case of Poland the maximum annual total budget available for these payments amounts to app. 60 million euro (Table 6.3).

According to the regulation proposal the rate of payments can reach only 25% of the average rate per 1 ha. Therefore. in Poland it can reach 54.2 euro in option 1 and 58.4 euro in option 2. Taking into account the total budget for these payments in Poland. the area covered by these payments could exceed 1 million ha UAA (Table 6.4).

Table 6.3. Maximum amount that can be transferred within the Polish national envelope for payments for young farmers (in millions of euros)

| Year | Option 1 (only national envelope) | Option 2 (envelope + 25% from Pillar II) |
|---|---|---|
| 2015 | 59.4 | 67.2 |
| 2016 | 59.7 | 64.4 |
| 2017 | 60.1 | 64.8 |
| 2018 | 60.4 | 65.1 |
| 2019 | 60.8 | 65.5 |
| 2020 | 61.2 | 65.9 |
| 2015-2020 | 361.7 | 393.0 |

*Source: Own elaboration.*

Table 6.4. Maximum area of UAA covered by payments for young farmers in Poland (in ha)

| Year | Option 1 (only national envelope) | Option 2 (envelope + 25% from Pillar II) |
|---|---|---|
| 2015 | 1,095,530 | 1,151,609 |
| 2016 | 1,101,892 | 1,103,655 |
| 2017 | 1,108,249 | 1,109,449 |
| 2018 | 1,114,557 | 1,115,196 |
| 2019 | 1,121,919 | 1,121,919 |
| 2020 | 1,129,280 | 1,128,636 |

*Source: Own elaboration.*

In the current proposal there are two methods of calculating the support for young farmers. First is to calculate payments based on the farm size. thus the received amount would be a product of the payment rate per 1 ha and the number of the hectares eligible for payments. However, in this option Member States must introduce a limitation of the maximum number of hectares supported. The limit must be within the range 25-90 ha UAA depending on the average farm size in the Member State. In Poland the maximum is 25 ha and the total payment would amount to app. 1 356 euro in the option 1 and to app. 1 460 euro in the option 2. The second method of payment calculation is a lump sum payment. The amount of the lump sum would be determined by multiplying the payment rate and the average number of hectares reported by young farmers in 2015.

## 6.2. Small farms

The introduction of a special payment system aimed at small farms is a voluntary element of new system for direct payments. Any farmer eligible for direct payments can declare in 2015 the participation in this system. replacing all other titles for direct payments. At the same time, however, beneficiaries eligible for a total direct payment lower than the ones within the system for small farms will be automatically included in

this system. In this case, the farmer who does not want to participate in this system must declare it.

Two calculation methods of the amount of payment are projected. The first one is based on the average amount of support received by the beneficiaries in the country. Participants of the system would receive 25% of the average amount determined by dividing the national envelope of 2019 by the number of beneficiaries who submitted applications for payment in 2015. In Poland payment calculated in this way would amount to 560 euro (option 1) or 603 euro (option 2).

The second calculation method is multiplying the number of hectares of arable land eligible for payment by the average national direct payment per hectare. which is the amount determined by dividing the national envelope of 2019 by the number of hectares of arable land covered by payments in 2015. With this method. the Member State must specify the maximum number of hectares for which this payment is eligible. whereby it cannot be more than 5 ha. Using this method in Poland payments for small farms would reach:

1. Option 1: from 216.9 (1 ha) to 1 084.5 euro (5 ha);
2. Option 2: from 233.6 (1 ha) to 1 168.0 euro (5 ha).

In the case of farmers with up to 2.3 ha (option 1) or 2.1 ha (option 2) the received payment would be lower than 500 euros, which means that it would have to be increased to 500 euro. because this is the minimum amount of payment in this system. Due to the minimal amount of payments a farmer holding a 1 ha would be granted the same amount as the one holding 2 ha, which could lead to fragmentation of holdings of 2 ha for two smaller ones. To prevent such behaviour. payment will not be granted to farmers who artificially divided their farms after 18.10.2011.

It is also possible to calculate the amount of payment using a different method. The amount would be the sum of total payment eligible in a given year or in 2015. In these cases, the minimum payment of 500 euro does not apply, although it may be introduced by the member State.

Financing system for small farms is to be done by deducting from the amount allocated to other payment titles the sums eligible for beneficiaries of small farm system. If the total amount obtained in this way is too small to cover the whole amount claimed. one of the following sources can be used:

a) national reserve/regional;
b) funds for payments to young farmers, which were not used in a given year;
c) linear reduction in all payments.

If the system of small farms was to be implemented in Poland and the amount of payments was determined using the first method. this system would be beneficial for holdings of about 3 ha. Given the number of farms in Poland of this size, the amount to be set aside for these payments would exceed 240 million euro per year (option 1) or 260 million euro a year (option 2).

According to the regulation proposal the obligations related to payments for agricultural practices beneficial for the climate and the environment. small farms would practically be exempt from fulfilling these obligations. This means that the key benefit of entering into this would lose raison d'être. However, for the smallest farms inclusion into this system would mean a much higher amount of payments.

Implementation of the system for small farms in Poland would be detrimental. because the system rewards possession of the smallest farms of the size of 1-2 ha. This is not beneficial for the Polish agriculture, as it would encourage owners of the smallest farms to keep them, although there are virtually no opportunities to develop them and make them competitive. Therefore, the still unfavourable agricultural structure would be preserved and the restructuring process would be slowed down.

From the point of view of the administration the benefit of the small farm system would be exemption from controlling the fulfilment of practices related to greening. However, with the planned form of these commitments controls on small farms will be much easier than in large farms, which will reduce their cost. At the same time the cost of introducing a separate system can completely offset the benefit from the reduction of the control costs.

Based on the calculations regarding the payment rates for the smallest farms and the potential cost of implementing a separate subsystem of direct payments, it seems that the payment system for small farms should not be implemented in Poland. especially if redistributive payments are implemented. that offers additional support for the smallest entities.

### 6.3. Redistributive payment

Redistributive payment belongs to the optional categories of direct payments within the new system. It may be introduced either for the whole 2015-2020 period or for each year. The Member States shall inform the Commission about the introduction of this payment until August 1 of the year in which they apply it.

For these payments can be spent up to 30% of the annual national envelope. The rate of payment may not exceed 65% of the national average determined by dividing the amount of the national envelope in 2019 and the total number of hectares of arable land declared for direct payments in 2015. Member States may vary the rate depending on to which a hectare of arable farm the payment relates. This means that under the maximum limit of 30 ha for which payment may be eligible, it is possible to introduce higher or lower rates.

In Poland the maximum payment rate is about 141 euro/ha in option 1 or approximately 152 euros/ha in option 2. The introduction of redistributive payments using uniform maximum rate and allocating the maximum possible part of the Polish national envelope would mean that the total area of arable land subject to this form of payments would exceed 6.3 million ha (Table 6.5).

Table 6.5. Maximum area of arable land subject to redistributive payments in Poland at the rate of 65% of the national average (ha)

| Year | Option 1 (only national envelope) | Option 2 (envelope + 25% from Pillar II) |
|---|---|---|
| 2015 | 6,320,367 | 6,643,899 |
| 2016 | 6,357,069 | 6,367,239 |
| 2017 | 6,393,744 | 6,400,668 |
| 2018 | 6,430,136 | 6,433,821 |
| 2019 | 6,472,608 | 6,472,608 |
| 2020 | 6,515,080 | 6,511,361 |

*Source: Own elaboration.*

It should be noted that in the case of the introduction of redistributive payments it is not necessary to cut of at least 5% of the total amount of payments above 150 thousand euro received by a farm. In the case of Poland based on the national average payment rate determined in accordance with the regulation proposal such a reduction would apply to approximately 1 000 farms having more than 690 ha.

Assuming a uniform rate corresponding to 65% of the national average and the maximum amount that can be spent on these payments in Poland. this support would be awarded to approximately 4.7 ha in each farm eligible for direct payments. However, given the fact that not all farm operate on more than 4.7 ha, the actual area covered by such payments would be slightly larger than 7.5 ha (option 1 in 2015).

Poland may pay redistributive payments up to 30 hectares. To cover such an area in each farm the rate per 1 ha would be 82-85 euro/ha (option 1) or 89-93 euro/ha (option 2) (Table 6.6).

Table 6.6. Redistributive payment rate per 1 ha in Poland for coverage of the first 30 ha (in euros )

| Option | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Option 1 (only national envelope) | 82.2 | 82.7 | 83.2 | 83.7 | 84.2 | 84.8 |
| Option 2 (envelope + 25% from Pillar II) | 93.1 | 89.2 | 89.7 | 90.2 | 90.7 | 91.2 |

*Source: Own elaboration.*

Taking into account the cost of operation and simplicity of the system it would be more appropriate not to impose redistributive payments. No such payment means equal treatment of farms regardless of their size. which would mean the payment system as close as possible to the existing one.

The introduction of redistributive payments means different treatment of each hectare of arable land belonging to the farm, which in turn leads to the fact that from the perspective of the annual premium for possession of arable land, as the payments can be seen, especially in the case of farms with limited agricultural activity, which does not produce for the market, smaller parcels generate a much larger profit than bigger ones. Thus, the smallest farms that do not have the potential to increase their

competitiveness would have an additional reason to maintain the farm. which would lead to freezing unfavourable agrarian structure.

The amount of additional support is too small to provide capital enabling a substantial modernisation of a farm and only in some cases can provide additional support to the implementation of the development plan and raising the competitiveness. This support could be particularly important for small farms that are trying to move to the group of economic size 25-50 thousand euro (FADN classification). In the Polish FADN population such aspiring farms have on average almost 16 hectares, which means that they could gain more than 1 050 euro in direct payments (option 1 in 2015), which is about 38% more than in 2011 (assuming that the average amount paid for other payment titles does not decrease). Thus. redistributive payments would contribute to supporting farms with growth potential if they are properly applied.

To increase the effect of the implementation of redistributive payments, it would be beneficial to differ the rate and introduce two rates: one for the first 10 ha and the other – the land between 10 and 30 ha. This would also reduce the negative impact on these payments on the land market. Both rates should differ significantly from each other. The rate for the first 10 ha should be at least two times lower than the rate allocated for the next 20 ha, i.e. 60 and 136 euro respectively (option 1 in 2015).

The introduction of redistributive payments in Poland seems to be beneficial, if this instrument is considered as a means for facilitating the withdrawal of LFA payments in most areas now covered by them. LFA support was to provide the opportunity to pursue farming activity in areas with handicaps for production and was primarily targeted to small farms that could not make use of the economies of scale and at least in part reduce the impact of these adverse conditions.

### 6.4. Level of support for certain categories of farms in Poland within the selected scenarios

In order to present the expected level of support in different farm types. one must refer to the level of rates for greening and "basic payments". The main deduction from the national envelope is 30% of its value, which must be allocated for greening. In the case of Poland the rate of this payment would amount to 62-72 euros/ha depending on the year and option of the total budget for payments (Table 6.7).

Table 6.7. Payment rates for greening in Poland (in euro)

| Option | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Option 1 (only national envelope) | 63.5 | 63.9 | 64.3 | 64.6 | 65.1 | 65.5 |
| Option 2 (envelope + 25% from Pillar II) | 71.9 | 68.9 | 69.3 | 69.7 | 70.1 | 70.5 |

*Source: Own elaboration.*

Only payments to young farmers and greening payments are mandatory. After deducting the necessary funds for these two categories of payments (assuming the maximum possible budget for payments to young farmers). the rate of "basic"

payment would be 144-163 euro/ha depending on the year and option budget payments (Table 6.8.).

Table 6.8. Rate of payment per 1 ha after deduction of payments beneficial for the climate and the environment. and the maximum amount of payment for young farmers (in euro)

| Option | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Option 1 | 144.0 | 144.8 | 145.7 | 146.5 | 147.5 | 148.4 |
| Option 2 | 163.0 | 156.2 | 157.1 | 157.9 | 158.8 | 159.8 |

*Source: Own elaboration.*

If redistributive payment with the maximum amount earmarked for this purpose were introduced, i.e. 30% of the national envelope. the "basic" payment rate would amount to 81-91 euros/ha depending on the year and option of the total budget for payments (Table 6.9).

Table 6.9. Rate of payment per 1 ha after deduction of payments beneficial for the climate and the environment. and the maximum amount of payment for young farmers and the maximum amount of payment redistributive (in euro)

| Option | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Option 1 (only national envelope) | 80.5 | 80.9 | 81.4 | 81.9 | 82.4 | 83.0 |
| Option 2 (envelope + 25% from Pillar II) | 91.1 | 87.3 | 87.8 | 88.2 | 88.8 | 89.3 |

*Source: Own elaboration.*

In the next section of this chapter the calculation of the amount of direct payments available to different farm sizes is presented. The calculations are made only for the year 2015.

In the case of small farms with a size of 1 ha the number of scenarios presented is particularly high, as it should also consider the introduction of a payment system for small farms. For such farms, the best scenario would be the implementation of payment system for small farms with the rate calculated using method 1. In this case these farms would receive 560 or 604 euro. depending on the size of the budget for direct payments (Table 6.10). The least favourable scenario would be the introduction of redistributive payments with varying rates lower for the first 10 ha, as in this scenario these farms would receive only 205 or 233 euro.

In the case of farms with 2 ha the system for small farms is not the most beneficial (Table 6.11). A slightly higher amount would be received by these farms under the scenario with redistributive payments with maximum rate for the first hectares of land. The other scenarios without payment system for small farms would be less favourable.

Table 6.10. Amount of support for the farm with an area of 1 ha in 2015 under various scenarios (rounded to 1 euro)*

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario | Small farm – calculation method 1 | 560 | 604 |
| Scenario M2 | Small farm – calculation method 1 | 500 | 500 |
| Scenario 1 | Greening | 64 | 72 |
| | "Basic" payment without redistribution | 144 | 163 |
| | **Total** | **208** | **235** |
| Scenario 2 | Greening | 64 | 72 |
| | "Basic" payment with maximum redistribution | 81 | 91 |
| | Redistribution maximum rate | 141 | 152 |
| | **Total** | **286** | **315** |
| Scenario 3 | Greening | 64 | 72 |
| | "Basic" payment with maximum redistribution | 81 | 91 |
| | Redistribution with flat rate for 30 ha | 82 | 93 |
| | **Total** | **227** | **256** |
| Scenario 4 | Greening | 64 | 72 |
| | "Basic" payment with maximum redistribution | 81 | 91 |
| | Redistribution with diverse rate for 30 ha | 60 | 70 |
| | **Total** | **205** | **233** |

* applies to all Tables in this chapter

*Source: Own elaboration.*

Table 6.11. Amount of support received by farms with an area of 2 ha in 2015 under various scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario M1 | Small farm – calculation method 1 | 560 | 604 |
| Scenario M2 | Small farm – calculation method 1 | 500 | 500 |
| Scenario 1 | Greening | 128 | 144 |
| | "Basic" payment without redistribution | 288 | 326 |
| | **Total** | **416** | **470** |
| Scenario 2 | Greening | 128 | 144 |
| | "Basic" payment with maximum redistribution | 162 | 182 |
| | Redistribution maximum rate | 282 | 304 |
| | **Total** | **562** | **630** |
| Scenario 3 | Greening | 128 | 144 |
| | "Basic" payment with maximum redistribution | 162 | 182 |
| | Redistribution with flat rate for 30 ha | 164 | 186 |
| | **Total** | **454** | **512** |
| Scenario 4 | Greening | 128 | 144 |
| | "Basic" payment with maximum redistribution | 162 | 182 |
| | Redistribution with diverse rate for 30 ha | 120 | 140 |
| | **Total** | **410** | **466** |

*Source: Own elaboration.*

For the farm size of 3 ha there are even more favourable scenarios than the system of small farms, even if the payment in this system is calculated using the second method (Table 6.12). The most beneficial scenario is the one with redistributive payment with the maximum rate. It should be noted that for these farms the least favourable scenario would be payments under the system for small farms with the amount determined using the first method.

Table 6.12. Amount of support received by farms with an area of 3 ha in 2015 under different scenario

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario M1 | Small farm – calculation method 1 | 560 | 604 |
| Scenario M2 | Small farm – calculation method 1 | 651 | 701 |
| Scenario 1 | Greening | 192 | 216 |
| | "Basic" payment without redistribution | 432 | 489 |
| | **Total** | **624** | **705** |
| Scenario 2 | Greening | 192 | 216 |
| | "Basic" payment with maximum redistribution | 243 | 273 |
| | Redistribution maximum rate | 423 | 456 |
| | **Total** | **858** | **945** |
| Scenario 3 | Greening | 192 | 216 |
| | "Basic" payment with maximum redistribution | 243 | 273 |
| | Redistribution with flat rate for 30 ha | 246 | 279 |
| | **Total** | **681** | **768** |
| Scenario 4 | Greening | 192 | 216 |
| | "Basic" payment with maximum redistribution | 243 | 273 |
| | Redistribution with diverse rate for 30 ha | 180 | 210 |
| | **Total** | **615** | **699** |

*Source: Own elaboration.*

The next step is to analyse these scenarios for the average farm size for each of the eight basic farm types distinguished within the FADN. The smallest average farms are the ones specializing in horticulture – 5.3 ha.

As in the case of farms with 3 ha, the most favourable scenario is the one with redistributive payments with maximum rate for the first few hectares of arable land (Table 6.13). The smallest amount these farms would gain in the scenario with redistributive payment with two rates. Even scenario without redistributive payment would be better than the one with diverse redistributive payment rates.

In the case of an average farm specializing in permanent crops situation is exactly the same as for horticulture farms. The average farm engaged in permanent crop production has 9.1 ha of arable land, which is why most favourable scenario is the one with redistributive payment with maximum rate and the least favourable the one with varied rates (Table 6.14).

Table 6.13. Amount of support received by an average farm specializing in horticultural crops in 2015 under different scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario 1 | Greening | 339 | 382 |
| | "Basic" payment without redistribution | 763 | 864 |
| | **Total** | **1102** | **1246** |
| Scenario 2 | Greening | 339 | 382 |
| | "Basic" payment with maximum redistribution | 429 | 482 |
| | Redistribution maximum rate | 705 | 806 |
| | **Total** | **1474** | **1670** |
| Scenario 3 | Greening | 339 | 382 |
| | "Basic" payment with maximum redistribution | 429 | 482 |
| | Redistribution with flat rate for 30 ha | 435 | 493 |
| | **Total** | **1203** | **1357** |
| Scenario 4 | Greening | 339 | 382 |
| | "Basic" payment with maximum redistribution | 429 | 482 |
| | Redistribution with diverse rate for 30 ha | 318 | 371 |
| | **Total** | **1087** | **1235** |

*Source: Own elaboration.*

Table 6.14. Amount of support received by an average farm specializing in permanent crops in 2015 under different scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario 1 | Greening | 582 | 655 |
| | "Basic" payment without redistribution | 1311 | 1484 |
| | **Total** | **1893** | **2139** |
| Scenario 2 | Greening | 582 | 655 |
| | "Basic" payment with maximum redistribution | 737 | 828 |
| | Redistribution maximum rate | 1128 | 1216 |
| | **Total** | **2448** | **2699** |
| Scenario 3 | Greening | 582 | 655 |
| | "Basic" payment with maximum redistribution | 737 | 828 |
| | Redistribution with flat rate for 30 ha | 746 | 837 |
| | **Total** | **2066** | **2321** |
| Scenario 4 | Greening | 582 | 655 |
| | "Basic" payment with maximum redistribution | 737 | 828 |
| | Redistribution with diverse rate for 30 ha | 546 | 637 |
| | **Total** | **1866** | **2120** |

*Source: Own elaboration.*

The average farm of mixed type within the FADN database owns 16.1 ha. For such an entity the best scenario would be the redistributive payment with varied rates, which is lower for the first 10 ha and higher for a further 20 ha (Table 6.15). The least favourable one would be scenario without redistributive payment.

Table 6.15. Amount of support received by an average farm of mixed type of production in 2015 under different scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario 1 | Greening | 1030 | 1159 |
| | "Basic" payment without redistribution | 2318 | 2624 |
| | **Total** | **3349** | **3784** |
| Scenario 2 | Greening | 1030 | 1159 |
| | "Basic" payment with maximum redistribution | 1304 | 1465 |
| | Redistribution maximum rate | 1128 | 1216 |
| | **Total** | **3463** | **3840** |
| Scenario 3 | Greening | 1030 | 1159 |
| | "Basic" payment with maximum redistribution | 1304 | 1465 |
| | Redistribution with flat rate for 30 ha | 1320 | 1497 |
| | **Total** | **3655** | **4122** |
| Scenario 4 | Greening | 1030 | 1159 |
| | "Basic" payment with maximum redistribution | 1304 | 1465 |
| | Redistribution with diverse rate for 30 ha | 1430 | 1609 |
| | **Total** | **3764** | **4233** |

*Source: Own elaboration.*

Farms specializing in grazing livestock (apart from milk cows; called "other grazing livestock" in FADN system) have an average area of 18.0 ha. In this case the most preferable option for recipients of direct payments would also be the implementation of redistributive payment with varied rates and the least beneficial the one without such payment (Table 6.16).

Table 6.16. Amount of support received by an average farm specializing in grazing livestock in 2015 under different scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario 1 | Greening | 1152 | 1296 |
| | "Basic" payment without redistribution | 2592 | 2934 |
| | **Total** | **3744** | **4230** |
| Scenario 2 | Greening | 1152 | 1296 |
| | "Basic" payment with maximum redistribution | 1458 | 1638 |
| | Redistribution maximum rate | 1128 | 1216 |
| | **Total** | **3738** | **4150** |
| Scenario 3 | Greening | 1152 | 1296 |
| | "Basic" payment with maximum redistribution | 1458 | 1638 |
| | Redistribution with flate rate for 30 ha | 1476 | 1674 |
| | **Total** | **4086** | **4608** |
| Scenario 4 | Greening | 1152 | 1296 |
| | "Basic" payment with maximum redistribution | 1458 | 1638 |
| | Redistribution with diverse rate for 30 ha | 1688 | 1892 |
| | **Total** | **4298** | **4826** |

*Source: Own elaboration.*

In the case of farms specializing in granivores the average arable area is 20.0 hectares. Although these farms are only 2 ha larger than the previous type. the difference slightly changes the assessment of individual scenarios. Still the highest level of support would be available under the scenario with varied rates of redistributive payment. but the worst would be the one with the maximum rate of redistributive payment. which is the one that allows you to support only the first 8 ha (Table 6.17).

Table 6.17. Amount of support received by an average farm specializing in granivores in 2015 under different scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario 1 | Greening | 1280 | 1440 |
| | "Basic" payment without redistribution | 2880 | 3260 |
| | **Total** | **4160** | **4700** |
| Scenario 2 | Greening | 1280 | 1440 |
| | "Basic" payment with maximum redistribution | 1620 | 1820 |
| | Redistribution maximum rate | 1128 | 1216 |
| | **Total** | **4028** | **4476** |
| Scenario 3 | Greening | 1280 | 1440 |
| | "Basic" payment with maximum redistribution | 1620 | 1820 |
| | Redistribution with flat rate for 30 ha | 1640 | 1860 |
| | **Total** | **4540** | **5120** |
| Scenario 4 | Greening | 1280 | 1440 |
| | "Basic" payment with maximum redistribution | 1620 | 1820 |
| | Redistribution with diverse rate for 30 ha | 1960 | 2190 |
| | **Total** | **4860** | **5450** |

*Source: Own elaboration.*

The average farm specializing in dairy cows is only slightly larger than the average farm with granivores. and its area is 20.9 hectares of arable land. Exactly as in the case of farms with granivores the highest level of support would be offered under the scenario with varied rate of redistributive payment and the worst one with maximum rate of redistributive payment (Table 6.18).

Farms specialising in fieldcrops are on average the largest in terms of the possessed arable land. On average. farms of this type have 50.5 ha. Like in the case of the two previously discussed types of farms. the worst scenario would be the one with maximum rate of redistributive payment and the most favourable scenario would be the one with varied rate of this payment (Table 6.19). However, the difference between this scenario and the scenario without redistributive payment is small and amounts only to about 140 euro (option 1) or 44 euro (option 2).

In order to have a fuller presentation of how each scenario affects the amount of payment obtained, depending on the area of agricultural land owned by a farm, there were also calculations made for farms with an area of 100 ha (Table 6.20). In this case,

the difference between the most and the least favourable scenario is significant and reaches about one quarter of the amount obtained in the most preferable scenario. The highest support for farms of this size would be available under the scenario without redistributive payments and the lowest under the one with maximum rate of redistributive payment.

Table 6.18. Amount of support received by the average farm specializing in dairy cows in 2015 under different scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario 1 | Greening | 1338 | 1505 |
| | "Basic" payment without redistribution | 3010 | 3407 |
| | **Total** | **4347** | **4912** |
| Scenario 2 | Greening | 1338 | 1505 |
| | "Basic" payment with maximum redistribution | 1693 | 1902 |
| | Redistribution maximum rate | 1128 | 1216 |
| | **Total** | **4159** | **4623** |
| Scenario 3 | Greening | 1338 | 1505 |
| | "Basic" payment with maximum redistribution | 1693 | 1902 |
| | Redistribution with flat rate for 30 ha | 1714 | 1944 |
| | **Total** | **4744** | **5350** |
| Scenario 4 | Greening | 1338 | 1505 |
| | "Basic" payment with maximum redistribution | 1693 | 1902 |
| | Redistribution with diverse rate for 30 ha | 2082 | 2324 |
| | **Total** | **5113** | **5731** |

*Source: Own elaboration.*

Table 6.19. Amount of support received by the average farm specializing in fieldcrops in 2015 under different scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario 1 | Greening | 3232 | 3636 |
| | "Basic" payment without redistribution | 7272 | 8232 |
| | **Total** | **10504** | **11868** |
| Scenario 2 | Greening | 3232 | 3636 |
| | "Basic" payment with maximum redistribution | 4091 | 4596 |
| | Redistribution maximum rate | 1128 | 1216 |
| | **Total** | **8451** | **9448** |
| Scenario 3 | Greening | 3232 | 3636 |
| | "Basic" payment with maximum redistribution | 4091 | 4596 |
| | Redistribution with flat rate for 30 ha | 2460 | 2790 |
| | **Total** | **9783** | **11022** |
| Scenario 4 | Greening | 3232 | 3636 |
| | "Basic" payment with maximum redistribution | 4091 | 4596 |
| | Redistribution with diverse rate for 30 ha | 3320 | 3680 |
| | **Total** | **10643** | **11912** |

*Source: Own elaboration.*

Table 6.20. Amount of support for farms with an area of 100 ha in 2015 under different scenarios

| Scenario | Option | Option 1 | Option 2 |
|---|---|---|---|
| Scenario 1 | Greening | 6400 | 7200 |
| | "Basic" payment without redistribution | 14400 | 16300 |
| | **Total** | **20800** | **23500** |
| Scenario 2 | Greening | 6400 | 7200 |
| | "Basic" payment with maximum redistribution | 8100 | 9100 |
| | Redistribution maximum rate | 1128 | 1216 |
| | **Total** | **15628** | **17516** |
| Scenario 3 | Greening | 6400 | 7200 |
| | "Basic" payment with maximum redistribution | 8100 | 9100 |
| | Redistribution with flat rate for 30 ha | 2460 | 2790 |
| | **Total** | **16960** | **19090** |
| Scenario 4 | Greening | 6400 | 7200 |
| | "Basic" payment with maximum redistribution | 8100 | 9100 |
| | Redistribution with diverse rate for 30 ha | 3320 | 3680 |
| | **Total** | **17820** | **19980** |

*Source: Own elaboration.*

Depending on the scenario under consideration the amount of the average payment rate per 1 ha significantly varies (Table 6.21). Only in the case of scenario without redistributive payment the rates per hectare are the same regardless of the farm size. In the case of the introduction of redistributive payments the rate per 1 ha becomes particularly varied depending on the size of the farm. Among the three considered scenarios the introduction of such payments leads to the greatest variability in rates on 1 ha under the scenario with the maximum rate of redistribution payment. In this scenario beneficiary farms with up to 8 ha of arable land would be granted 286 euro (option 1) or 315 euro (option 2) per 1 ha. In this case a farm with 100 ha would receive 156 euro or 177 euro. respectively.

Table 6.21. Average rate of total payments in Poland per 1 ha under different scenarios of payment system (in euros)

| Size | Option 1 | | | | Option 2 | | | |
|---|---|---|---|---|---|---|---|---|
| | S. 1 | S. 2 | S. 3 | S. 4 | S. 1 | S. 2 | S. 3 | S. 4 |
| 1-8 ha | 208 | 286 | 227 | 205 | 235 | 315 | 256 | 233 |
| 9.1 ha | 208 | 269 | 227 | 205 | 235 | 297 | 255 | 233 |
| 16.1ha | 208 | 215 | 227 | 256 | 235 | 239 | 256 | 263 |
| 18 ha | 208 | 208 | 227 | 239 | 235 | 231 | 256 | 268 |
| 20 ha | 208 | 201 | 227 | 243 | 235 | 224 | 256 | 273 |
| 20.9 ha | 208 | 199 | 227 | 245 | 235 | 221 | 256 | 274 |
| 50.5 ha | 208 | 167 | 194 | 211 | 235 | 187 | 218 | 236 |
| 100 ha | 208 | 156 | 170 | 178 | 235 | 177 | 190 | 200 |

*Source: Own elaboration.*

Even greater differences in the amounts obtained for 1 ha would occur in the event of the implementation of the payment system for small farms (Table 6.22). It is clear that the implementation of this system would be most beneficial to farms with 1 ha. In this system. the rate of payment for the participants would not be even several times higher than the rate for farms with developmental potential. At the same time the rate for 1 ha would be twice the size of the one for 2 ha farms and more than two times higher for farms with 3 ha.

Table 6.22. Average rate of payments per 1 ha in the system for small farms (in euro)

| Area | Calculation method 1 | | Calculation method 2 | |
|---|---|---|---|---|
| | Option 1 | Option 2 | Option 1 | Option 2 |
| 1 ha | 560 | 604 | 500 | 500 |
| 2 ha | 280 | 302 | 250 | 250 |
| 3 ha | 187 | 201 | 217 | 234 |

*Source: Own elaboration.*

Looking at the differences in the rates presented in this chapter it is clear that. by way of shaping the direct payment system an active agricultural policy supporting particular groups of farms can be conducted. Given the agrarian structure in Poland and developmental potential of individual groups of farms new payment system could support the enlargement of the group able to compete on the EU market. In order to support this group redistributive payments would need to be implemented with the lowest possible rate for the first 10 or 16 ha and the highest possible rate for the remaining hectares to 30 ha. Lack of a redistributive payment is also a good alternative, because it does not lead to discrimination against any group of farms, which means that it gives a chance for further development to all farms that want to develop.

When it comes to the amount of funds earmarked for direct payments option 1 should be chosen. Option 2 represents only a slight increase in payment rates and a very substantial loss of funds allocated for the RDP 2014-2020, which would significantly shrink the availability of funds for supporting investment on farms.

The analysis of possible scenarios of direct payment system in Poland does not cover all the possibilities arising from the proposal of the EU regulation. Analysed were only the systems with required types of payments and the optional ones which would apply to the largest group of beneficiaries of basic direct payments. The most important category of payments that were not included in the analysis are payments linked to production. The introduction of such payments could be of importance for the diversification of the financial situation of farms depending on their type of production.

In order to assess how different shape of the payment system would impact on the condition of different types of farms. a relation of direct payments to the selected basic financial data collected by FADN was calculated. The following data for 2011 was used:

• single area payment (SE632);
• income from the family farm (SE420);
• cash flow (1) (SE526);
• cash flow (2) (SE530).

Cash flow (1) shows the ability of a farm to self-finance its own business and create savings in operating activities. It is calculated as the sum of sales, sold animals and other revenues less total costs and the cost of purchasing animals, and then increased by the balance of payments and taxes on operating activities and the balance of payments and taxes on investment.

Cash flow (2) also reflects the ability of a farm to self-finance its operations and create savings, however, it takes into account not only operating activities, but also investment and financing activities. This ratio is calculated by increasing the value of the cash flow ratio (1) with the sale of fixed assets and net liabilities at the end of the year and decreased by purchases and investment.

To simplify the analysis an unchanged exchange rate of the Polish zloty against the euro was applied (i.e. 1 euro = 4.1206 zł; rate applied in the FADN data for 2011) and the unchanged level of all other components of income and cash flows of both types. which means that the only variable was the level of direct payments.

All types of farms achieved a higher ratio of direct payments to the chosen financial data than in the base year. Horticulture farms are not only the smallest in terms of area. but also have the lowest level of obtained subsidies to financial data analysed (Table 6.23). All scenarios would lead to an increase in the relationship between payments and examined financial data. which is particularly visible in the case of income.

Table 6.23. Amount of payments in relation to selected financial ratios for an average farm specializing in horticulture under different scenarios of payments (in percent)

| Option | | SAP*/Income | SAP/Cash flow (1) | SAP/Cash flow (2) |
|---|---|---|---|---|
| | | SE632/SE420 | SE632/SE526 | SE632/SE530 |
| Currently | | 9.5 | 6.2 | 8.3 |
| Option 1 | S.1 | 11.5 | 7.5 | 10.0 |
| | S.2 | 14.8 | 9.8 | 13.0 |
| | S.3 | 12.4 | 8.2 | 10.9 |
| | S.4 | 11.3 | 7.4 | 9.9 |
| Option 2 | S.1 | 12.8 | 8.4 | 11.2 |
| | S.2 | 16.4 | 11.0 | 14.5 |
| | S.3 | 13.8 | 9.1 | 12.1 |
| | S.4 | 12.7 | 8.4 | 11.1 |

*SAP – single area payment.

*Source: Own elaboration based on FADN data and tab. 6.13.*

Currently in farms specializing in permanent relation of direct payments to income ratio reaches 12.7% (Table 6.24). The introduction of the new payment system would increase this ratio to 15.0-20.1 % depending on option and scenario. In the case

of other financial indicators there would also be a significant increase in the ratio of payments to other financial indicator.

Table 6.24. Amount of payments in relation to selected financial ratios for an average farm specializing in permanent crops under different scenarios (in percent)

| Option | | SAP*/Income | SAP/Cash flow (1) | SAP/Cash flow (2) |
|---|---|---|---|---|
| | | SE632/SE420 | SE632/SE526 | SE632/SE530 |
| Currently | | 12.7 | 8.7 | 13.4 |
| Option 1 | S.1 | 15.0 | 10.3 | 15.9 |
| | S.2 | 18.6 | 12.9 | 19.6 |
| | S.3 | 16.2 | 11.1 | 17.1 |
| | S.4 | 14.8 | 10.2 | 15.7 |
| Option 2 | S.1 | 16.7 | 11.5 | 17.6 |
| | S.2 | 20.1 | 14.1 | 21.2 |
| | S.3 | 17.8 | 12.3 | 18.8 |
| | S.4 | 16.5 | 11.4 | 17.4 |

*Source: Own elaboration based on FADN data and tab. 6.14.*

Farms with mixed production are characterized by much higher relation of direct payments to income than previously presented categories of farms (Table 6.25). Currently. this ratio exceeds one third, and in the case of both cash flow indicators the situation is similar. Regardless of the scenario and option the relation of payments to the financial data increases from a few to as many as 10 percentage points.

Table 6.25. Amount of payments in relation to selected financial ratios for an average mixed type farm under different scenarios (in percent).

| Option | | SAP*/Income | SAP/Cash flow (1) | SAP/Cash flow (2) |
|---|---|---|---|---|
| | | SE632/SE420 | SE632/SE526 | SE632/SE530 |
| Currently | | 36.5 | 30.0 | 38.7 |
| Option I | S.1 | 40.9 | 34.1 | 43.2 |
| | S.2 | 41.7 | 34.8 | 44.0 |
| | S.3 | 43.0 | 36.1 | 45.3 |
| | S.4 | 43.8 | 36.8 | 46.0 |
| Option 2 | S.1 | 43.9 | 36.9 | 46.2 |
| | S.2 | 44.3 | 37.2 | 46.5 |
| | S.3 | 46.0 | 38.9 | 48.3 |
| | S.4 | 46.7 | 39.5 | 49.0 |

*Source: Own elaboration based on FADN data and tab. 6.15.*

Direct payments have the largest share of income in farms specialising in other livestock (Table 6.26). The implementation of each of the scenarios would lead to the ration direct payments/income exceeding 50%. The ratio for the two indicators of cash

flow would be very high. which would translate to a large dependence of these farms from the public support.

Table 6.26. Amount of payments in relation to selected financial ratios for an average farm specializing in other livestock under different scenarios (in percent)

| Option | | SAP*/Income | SAP/Cash flow (1) | SAP/Cash flow (2) |
|---|---|---|---|---|
| | | SE632/SE420 | SE632/SE526 | SE632/SE530 |
| Currently | | 48.4 | 39.5 | 52.2 |
| Option 1 | S.1 | 53.0 | 44.0 | 56.8 |
| | S.2 | 53.0 | 44.0 | 56.8 |
| | S.3 | 55.2 | 46.2 | 59.0 |
| | S.4 | 56.5 | 47.5 | 60.2 |
| Option 2 | S.1 | 56.1 | 47.1 | 59.8 |
| | S.2 | 55.6 | 46.6 | 59.3 |
| | S.3 | 58.2 | 49.2 | 61.8 |
| | S.4 | 59.3 | 50.4 | 62.9 |

*Source: Own elaboration based on FADN data and tab. 6.16.*

The farms specialising in granivores have a share of direct payments to income exceeding 22% (Table 6.27). The introduction of each of the analysed scenarios would mean an increase in the importance of the support of a few percentage points for each of the three financial indicators.

The same is the situation of farms specializing in dairy cows (Table 6.28). Currently. direct payments account for more than one quarter of their income, in the case of the introduction of redistributive payments with varied rate I option 2 of the budget the share of payments in income would exceed one third.

Table 6.27. Amount of payments in relation to selected financial ratios for an average farm specializing in granivores under different scenarios (in percent)

| Option | | SAP*/Income | SAP/Cash flow (1) | SAP/Cash flow (2) |
|---|---|---|---|---|
| | | SE632/SE420 | SE632/SE526 | SE632/SE530 |
| Currently | | 22.3 | 19.2 | 26.4 |
| Option 1 | S.1 | 25.7 | 22.3 | 30.2 |
| | S.2 | 25.1 | 21.8 | 29.6 |
| | S.3 | 27.4 | 23.9 | 32.1 |
| | S.4 | 28.8 | 25.1 | 33.6 |
| Option 2 | S.1 | 28.1 | 24.5 | 32.9 |
| | S.2 | 27.1 | 23.6 | 31.8 |
| | S.3 | 29.9 | 26.1 | 34.8 |
| | S.4 | 31.2 | 27.4 | 36.2 |

*Source: Own elaboration based on FADN data and tab. 6.17.*

Table 6.28. Amount of payments in relation to selected financial ratios for an average farm specializing in dairy cows under different scenarios (in percent)

| Option | | SAP*/Income | SAP/Cash flow (1) | SAP/Cash flow (2) |
|---|---|---|---|---|
| | | SE632/SE420 | SE632/SE526 | SE632/SE530 |
| Currently | | 25.2 | 22.2 | 31.1 |
| Option 1 | S.1 | 28.9 | 25.6 | 35.2 |
| | S.2 | 28.0 | 24.8 | 34.2 |
| | S.3 | 30.7 | 27.3 | 37.3 |
| | S.4 | 32.3 | 32.3 | 39.0 |
| Option 2 | S.1 | 31.5 | 28.0 | 38.1 |
| | S.2 | 30.2 | 26.8 | 36.7 |
| | S.3 | 33.3 | 29.8 | 40.1 |
| | S.4 | 34.9 | 31.2 | 41.8 |

*Source: Own elaboration based on FADN data and tab. 6.18.*

In the case of farms specializing in field crops share of direct payments in their income exceeds 40% (Table 6.29). In relation to this category of farms the implementation of the scenario with maximum rate of redistributive payments would lead to a decline in the relation of direct payments the examined financial data, which arises from the fact that the amount of the payment would be approximately 1 000 zł lower than it is currently. However, in the case of other scenarios there would be an increase in the direct payments' share in income and cash flow.

Table 6.29. Amount of payments in relation to selected financial ratios for an average farm specializing in field crops under different scenarios (in percent)

| Option | | SAP*/Income | SAP/Cash flow (1) | SAP/Cash flow (2) |
|---|---|---|---|---|
| | | SE632/SE420 | SE632/SE526 | SE632/SE530 |
| Currently | | 41.2 | 33.1 | 45.4 |
| Option 1 | S.1 | 45.8 | 37.4 | 50.1 |
| | S.2 | 40.5 | 32.5 | 44.7 |
| | S.3 | 44.0 | 35.7 | 48.4 |
| | S.4 | 46.1 | 37.7 | 50.5 |
| Option 2 | S.1 | 48.8 | 40.3 | 53.2 |
| | S.2 | 43.2 | 34.9 | 47.5 |
| | S.3 | 47.0 | 38.5 | 51.3 |
| | S.4 | 48.9 | 40.4 | 53.3 |

*Source: Own elaboration based on FADN data and tab. 6.19.*

As shown in the analysis of the relation of direct payments to certain basic financial data characterizing the different types of Polish farms, the new payment system will lead to an increase in the received direct payments, thus, other things being equal. the financial viability of the farms will be strengthened. However, not to make Polish agriculture dependent on public support. it is necessary to catalyse the

development of farms and encourage the ones with developmental potential to compete in the European and world markets. It seems that for many farms to become competitive it is necessary to increase the area of their arable land. Therefore, the payment system should be shaped in such a way that it does not hinder changes in the agrarian structure.

## 7. The Implications of Multiannual Financial Framework in Hungary for the years 2014-2020[2]

### 7.1. Introduction

The budget of the European Union (EU) is based on a multiannual financial framework (MFF) negotiated by the Member States and agreed upon at the level of European Union institutions. Conventionally the negotiations of the MFFs have been highlighted in the academic literature and media as tortuous battles where agreements are reached only at the last minute (Kölling, 2012). Since the EU budget represents only about 1 per cent of the total Community Gross National Income (GNI), the negotiations of the MFFs are more than purely financial negotiations, they represent the manifestation of political goals and institutional influence of different actors in the decision making process besides the debate on the budgetary exercise.

However, for Hungary and Poland as well as other Central and Eastern European countries the outcome of negotiations, measures by allocations of EU funds, is of great importance to their economies. Therefore, a closer cooperation of Czech. Hungarian. Polish and Slovak interests has been manifested in the Visegrad Group countries (V4). This cooperation is not easy because of the different domestic political and economic contexts in all four countries. but these countries have been attempting. with varying degrees of success. to bring their positions closer together (Kalan *et al.*, 2012). Nevertheless, the cooperation of V4 members with the aim of optimisation of their net revenue positions contributed in some extent to obtain the second and third position in the case of Poland and Hungary respectively on the list of net revenue after the negotiation process ended.

The MFF of the EU for the period 2014 and 2020 has decreased by ca. 4.5% in real terms comparative to the previous MFF. This is the first time when the financial resources of the EU are decreasing in real terms considering a budget structure tailored previously for 15 Member States with new challenges and new common policies agreed in Lisbon Treaty (for example intensifying migration pressure and food security concerns. or new dimensions of common foreign and security policy). Therefore the total appropriations for commitment of the MFF are EUR 960 billion (in 2011 prices)

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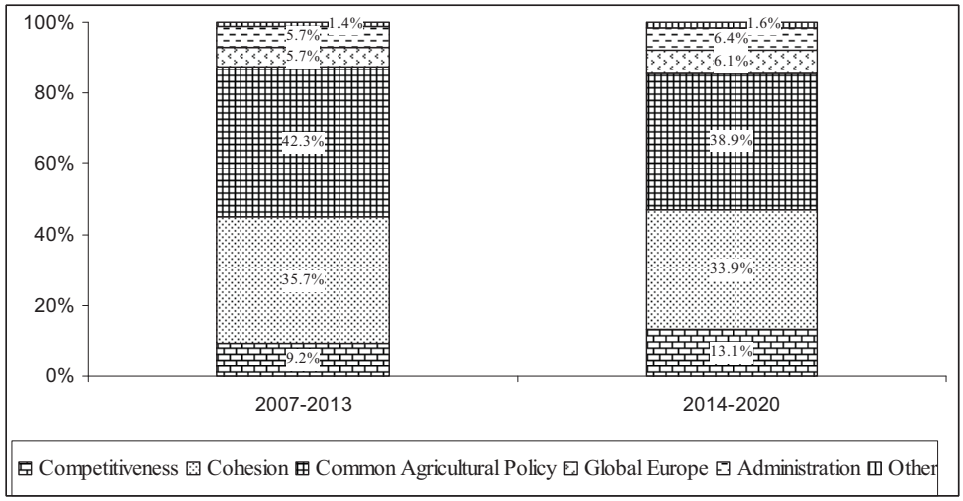
for the years 2014-2020, but the total appropriations for payment are expected only EUR 908.4 billion (CEU, 2013) mainly due to the special agreement with the United Kingdom.

The decreasing of total commitment appropriations in MFF has resulted in changes in the structure of commitments. The most important programs financed in the MFF are competitiveness (1a). cohesion (1b) and Common Agricultural Policy representing 85.9% in the total budget commitments. The shares of commitment appropriations for cohesion and agricultural policy have decreased by 2% and 3% respectively and for competitiveness have increased by 4% comparative to previous MFF (Figure 7.1), in a period when total commitment appropriations have decreased by 4.5% in real terms.

Figure 7.1. The changes in the structure of MFF




*Source: EC (2013) and CEU (2013).*

The Hungarian interests during the negotiations of the MFF for years 2014--2020 are summarised by Jámbor (2012). In the case of Pillar I the most important objective was to avoid the reduction of the commitment appropriations for direct payments. This is followed by the possibility of more equitable distribution of direct payments. changing the application of greening component. administrative simplification of direct payments, maintaining the structural diversity and coupled direct payments.

In the case of Pillar II the Hungarian priorities were the following: maintaining the level of rural development subsidies, the possibilities of applying integrate rural development practices, the possibility of defining new priorities and of promotion sustainable productivity.

The aim of this chapter is to present the implications of the new MFF agreement on the Hungarian economy and agricultural economy. In the first part of the

chapter the most important commitment appropriations (competitiveness, cohesion and agricultural policy), budget revenue situation of the MFF and net payment situation of Hungary are presented. In the second part the major changes in Hungarian agricultural subsidy system in the new MFF are explained.

### 7.2. The Hungarian results of MFF negotiations

The Member States receive different amounts of financial resources from specific headings of the EU budget and contribute to a different extent to its financing. Although these national net returns do not reflect the whole benefits of EU integration. EU Member States have traditionally concentrated on optimisation of net returns in order to determine their negotiation position. In this section the results of Hungarian negotiation process specifically the changes of the most important commitment appropriations. revenue side of MFF, and the net return for Hungary are presented.

In the competitiveness heading of the MFF EUR 125.6 billion are allocated. Even if this is lower comparative to the European Commission proposal of EUR 156 billion. this amount exceeds EUR 91 billion the commitment appropriation of actual MFF. These financial resources are not allocated previously for the Member States like cohesion and agricultural funds. The access of these funds is assured on competitive basis; the funds are allocated to the best projects. The experiences show that this commitment appropriations are used in general by more developed Member States (Hetényi, 2013).

The commitment appropriations for competitiveness contain the financial resources for research and development projects (Horizon 2020) and the increased financial recourses for student mobility (Erasmus). Unfortunately, the Hungarian participation in these projects is very modest.

In the last stages of negotiations the cohesion policy deal has received a special attention because of the financial allocation attributed to each Member State and the conditions defined for spending these funds. The heading of cohesion policy was an important item in balancing the MFF. Therefore the final agreement on cohesion commitment appropriations has decreased to EUR 325.2 billion from EUR 348.9 billion in the actual MFF.

There are many interpretations regarding the outcome of Hungarian negotiations resulted in about EUR 20.56 billion commitment appropriations allocation from the Cohesion Fund during the 2014-2020 MFF. The Commission proposal based on the projections of very low economic growth data of 2008-2011 represented only EUR 18.34 billion that had been increased by 12 per cent until the end of negotiation process. On the other hand the allocated found is lower by 20 per cent comparative to the EUR 25.73 billion allocated to Hungary in the MFF 2007-2013. This cohesion fund is overestimated in the actual MFF because the Commission projection is based on higher economic growth data of 2003-2005, so this can be considered only a virtual sum as the economic growth did not reach the projected value. After making the corrections

the real commitment appropriations represents EUR 20.95 billion, which can be considered as a benchmark for the outcome of negotiations (Heténi, 2013). Also after corrections the allocation to Hungarian cohesion policy for 2014-2020 is lower by 2.1% comparative to actual MFF, but taking into account that the total commitment appropriations for cohesion policy decreased by 8.4 per cent, the negotiation process can be considered successful.

Two very important conditions for spending the cohesion funds were accepted to not change. Although the Commission proposed to keep the co-financing rate at 85%. the net contributor countries to the EU budget wanted to reduce this rate to 75%. This reduction of co-financing rate by 10 per cent would increase the Hungarian budgetary allocation for co-financing by EUR 350 million. Keeping the original co-financing rate is a favourable agreement for Hungary. The other condition for spending these founds is connected to the accountability of value added tax (VAT). The Commission proposal as well as the net contributor countries wanted to end the accountability of VAT for the projects financed from cohesion policy funds arguing that the beneficiary countries receive a direct financial transfer to their national budget if the accountability of VAT is allowed. The acceptance of this proposal would increase the Hungarian budgetary allocation by another EUR 350 million.

The negotiations regarding the financing of the Common Agricultural Policy represented another very important topic for Hungary. The headings of direct payments and rural development in the MFF have decreased by 18 per cent and 13 per cent respectively comparative to 2013. This reduction of direct payments has significant effect on those Member States where direct payments per hectare are higher than the EU average. As the direct payments per hectare in Hungary are similar to the EU average, the reduction of commitment appropriations for direct payment has no effect on Hungary. The Hungarian direct payments in the new MFF are expected to decrease from EUR 260 per hectare in 2013 to EUR 250, but the total commitment appropriations from EAGF are increasing from EUR 6.3 billion to EUR 7.9 billion in the years 2014-2020.[3]

The commitment appropriations for rural development in EU decreased by 13.5% leading to the reduction of expected financial resources at constant 2011 prices for Hungarian rural development from EUR 3.9 billion to EUR 3.1 billion in the MFF 2014-2020. Compensating the reduction of rural development commitment appropriations 14 Member States received compensation except Hungary where the highest increase of commitment appropriations for cohesion policy was achieved.

The revenue side of the MFF has not changed considerably during the negotiations. Hungary was not implied in these discussions because we were focusing on the expenditure side, namely cohesion and agriculture funds. The Hungarian contribution to the MFF is decreasing from EUR 9.3 billion in the 2007-2013 MFF to EUR 7.2 billion due to the pessimistic forecasting of the Gross National Income (GNI). Anyway,

[3] This increase is to be explained by the phasing in of direct payments during the period 2007-2013.

the payment of national contribution is paid based on the achieved GNI growth, which implies that the contribution to the MFF will be higher in the case of Hungary than is projected in the MFF.

The net revenue for a Member State in the MFF can be estimated ex ante. but uncertainty concerns may exist as the expenditures are differing form the commitment appropriations or the national contribution is changing as GNI growth differs from the projected value. The Hungarian net revenue in the years 2014-2020 is expected about EUR 25 billion, the third position in the EU ranking following Romania and Poland. Moreover. the net revenue per person in Hungary is increasing from EUR 2.333 to EUR 2.513 per person in the years 2014-2020.

### 7.3. The Common Agricultural Policy

The new design of the Common Agricultural Policy (CAP) will provide options for the EU Member States to further increase the complexity of their existing direct support schemes for the years 2014-2020 (Potori *et al.*, 2013b). The new direct payment scheme is based on basic payment which can be introduced already in 2015 or at least from 2018. The basic payment is a decoupled, area based support measure, created and distributed as basic payment entitlements in the first year of introduction of the system.

Redistributive payment can be introduced for all farmers except those receiving the simplified support for small farmers over the basic payment (or SAPS) up to 30% of the Pillar I of CAP budget (about EUR 380 million in Hungary). This support can be paid for a farmer up to 30 hectares and at most 65 per cent of the national average payment from the Pillar I (about EUR 165). Potori *et al.* (2013b) estimated that the reduction of direct payments as an alternative to the Redistributive Payment is beneficial for the mid-sized (100-500 hectares) family farms in their impact assessment of the new system of direct payments in Hungary.

A greening component of direct payment has to be introduced up to 30 per cent of the Pillar I financial resources in 2015. which supplements the basic payment (or SAPS). The greening payment is subject to diversification of crop production, preservation of permanent grass and pasture areas, and setting ecological area. The introduction of greening component does not have negative impact on the income of Hungarian farmers. A preliminary estimation published by Popp *et al.* (2012) indicates that the decrease of income due the setting ecological area is fully compensated by the supplemental greening payment.

Support of areas with natural constraints and supplementary payments for young farmers are also elements of new direct payment system supported from the Pillar I of the CAP budget.

Voluntary coupled support payment may be granted up to 13% of the direct payment (Pillar I) envelope of Hungary stimulating agricultural production in some areas where these agricultural products have important economic, environmental and

social role (milk production, goat, sheep, cattle breeding, and production of durum wheat, rice, vegetables and fruits) with a further 2 per cent paid specifically to protein crop producers.

Simplified support scheme for small farmers can be introduced based on a lump sum ranging between EUR 500-1.250 replacing all other direct payments (Potori *et al.*, 2013a). The introduction of payment for small farmers as opposed to the implementation of the Redistributive Payment, clearly points towards lower administrative costs. but a subsidy level set too high may distort the risk awareness and reduce efficiency of smallholders.

The reduction of direct payments by the minimum amount in the new design of CAP would have no significant impact on large farms (Potori *et al.*, 2013b). The reduction of direct payments above EUR 150.000 by 5 per cent in Hungary would affect only 225 of the 176.3 thousand farms which received direct payments in 2011. The total of direct payments that could thus be transferred to Pillar II would sum about EUR 2 million. or EUR 8.8 thousand per farm.

The elaboration of the Hungarian Rural Development Plan for the years 2014--2020 is still in progress after the determination of the financial recourses allocated in Pillar II of EUR 3.5 billion in current prices for Hungary. The planning activity is still in progress, the strategic objectives of the Plan are based on National Rural Strategy 2012-2020 assuring the linkage with Sectoral Operational Programmes. The development of agriculture and rural areas can be carried out by stimulating innovation for increasing value added, market access, cooperation and improvement of professional skills (Biró *et al.*, 2012).

The Hungarian Rural Development Plan for the next MFF is expected to focus on two thematic sub-programs (young smallholders and short supply chain) and six programme priorities:

1. Knowledge transfer and innovation stimulation in agriculture. forestry and rural areas;
2. Increasing the competitiveness of agricultural production and improving the viability of smallholders;
3. Promoting the organization and risk management in food and non-food supply chains;
4. Restoring. preserving and improving agricultural and forestry ecosystems,
5. Supporting the improvement of resource allocation efficiency, low carbon emission and adaptability to climate change in agriculture, food industry and forestry.
6. Promoting social inclusion, reduction of poverty and economic development of rural areas.

The success or failure of the rural development programmes for the years of 2014--2020 will significantly depend on what type of transaction costs (coordination costs, information costs, learning costs) and incentive systems will be initiated within the programming system (Mantino, 2013).

### 7.4. Conclusions

The outcome of Hungarian negotiation process regarding the MFF for years 2014-2020 is positive. The estimated net revenue of EUR 25 billion and the increasing of the estimated net revenue per person from EUR 2.333 in the period 2007-2013 to the EUR 2.513 are evidences supporting the favourable agreement for Hungary of the new MFF. Instead of major cuts on the new MFF affecting Cohesion Policy and Common Agricultural Policy, Hungarian allocation decreased by lower rate due to the wide areas eligible for these areas and good negotiation performance.

The agricultural implications in Hungary of the MFF for years 2014-2020 can be appreciated also positive. Although the Hungarian direct payments in the new MFF are expected to decrease to EUR 250 per hectare from EUR 260 per hectare in 2013, the total commitment appropriations from the EAGF are increasing between 2014 and 2020 to EUR 7.9 billion, 25 per cent more at 2011 constant prices than between 2007 and 2013. The new design of the Common Agricultural Policy (CAP) will provide options for Hungary better shaping the direct support scheme to the national political wisdoms in the years 2014-2020.

The reduction of rural development funds from the EAFRD in EU by 13.5% has led to a reduction of Hungarian rural development financial resources by 21% at constant 2011 prices from EUR 3.9 billion to EUR 3.1 billion in the MFF 2014-2020. This major reduction of Hungarian rural development funds increases the necessity of elaborating a more focused Rural Development Plan to avoid the dispersion of the available funds for too many programme priorities. The possibility of transferring funds from the Pillar I to the Pillar II offer the possibility for Member States use more financial resources for rural development than allocated in the agreement. but this option do not represent a real option as the distribution of subsidies for the smallholders is more effective in Pillar I.

## 8. CAP's second pillar – some remarks from the Czech perspective[4]

### Introduction

The Common Agricultural Policy (CAP) is one of the core policies which. since its establishment in the 1950s, has contributed significantly to the process of integration of the European Union. Since the reform carried out in the Agenda 2000, CAP has been implemented in two pillars. pursuing different policy goals. Whereas the first pillar of CAP concentrates on income support mostly via direct payments, the second pillar. with a gradually increasing yet considerably smaller share. aims at supporting the competitiveness of farmers and the socio-environmental functions of agriculture.

[4] This chapter was prepared by the editor of the report as a compilation of three articles written by Z. Kristkova and T. Ratinger, listed at the end of the chapter.

In connection with the approaching end of the current programming period. a debate on further reform of CAP has been opened and various legislative proposals have been produced that discuss the future shape of the Common Agricultural Policy. From the EU Budget Proposals (EC 2011a) it follows that the Union's budget allocated to the CAP is likely to stay constant in the nominal terms of the 2013 level. However, what remains unclear is the proportion of spending between both pillars on the national and regional level. The impact assessment study (EC. 2011b) highlights existing disparities in the allocation of national envelopes among Member States and proposes several scenarios how to address them in the new CAP. The Multi-annual Financial Framework (EC. 2011c) sums up the suggestions of the impact study in three alternatives of the CAP budget reallocation to the second pillar. Based on the MFF, the second pillar budget for the Czech Republic is unlikely to grow, in the most dramatic scenario it might decline up to 30%. This decline can be partially compensated by reallocating funds from the first to second pillar.

This chapter is aimed at presenting the Czech perspective on the CAP's second pillar and its impact on the Czech economy. Research presented in this chapter is the result of a research grant MSM 6046070906 "Economics of Czech agricultural resources and their efficient usage within the framework of multifunctional agri-food systems" and a Research Task of UZEI conducted for the Ministry of Agriculture TÚ 4241/2011".

The chapter includes three subchapters:

1. Impact of the CAP´s second pillar budget reform on the Czech economy.
2. Rural economies and the Pillar II budget debate: a regional perspective.
3. Modeling the efficiency of the agri-environmental payments to Czech agriculture in a CGE framework incorporating public goods approach.

## 8.1. Impact of the CAP´s second pillar budget reform on the Czech economy

In view of the EC's proposals. the first part aims at quantifying the impact of different scenarios of Pillar II budget allocation including the transfer from Pillar I on the Czech agriculture and the whole economy. The above formulated general objective can be translated in three research questions to be answered by the model:

- What is the effect of the second CAP pillar reduction resulting in a decline of investment support, on the performance of the agricultural sector (output, income and employment)?
- What is the effect of the reallocation of CAP budget from the first to the second pillar on the performance of the agricultural sector?
- What are the effects of these alternative financing options on the performance of the national economy (GDP and macroeconomic balances)?

In order to capture the spill-over effects of the CAP budget scenarios on the non-agricultural/non-food economy, a general equilibrium approach is applied. Due to

the specific CAP focus of the study, a detailed disaggregation of the agricultural sector was carried out.

The chapter is structured as follows: in the next section we describe the applied CGE model. data and considered scenarios. The model results are presented in Section 3. Finally, a brief summary and discussion of the results are presented.

### 8.1.1. Material and Methods

#### 8.1.1.1. Description of the Applied CGE model

The choice of the CGE approach is supported by various arguments. According to Piermartini (2006), general equilibrium models (CGE models) provide a consistent. rigorous and quantitative way of assessing economic policies and they serve as supporting tools in the decision making process. Robinson et al. (1999) further explain that multi-sector CGE models provide a versatile empirical simulation laboratory for analysing quantitatively the effects of economic policies and external shocks on the domestic economy.

One of the earliest CGE applications in the geographical region of the Czech Republic can be found in the study on the impact of the EU accession on the agricultural markets (Tangermann and Banse. 2000); further contributions in this area were provided by Ratinger and Toušek (2004). Besides a regional CGE model applied for the scenarios concerning rural areas of the Czech Republic (Bednaříková and Doucha, 2009), there is very scarce evidence on the agriculture-oriented CGE applications with a specific focus on the economy of the Czech Republic. Most of the research on the impact of agrarian policy is performed by widely spread multi-country CGE models focused on agriculture, in which the Czech Republic is usually aggregated into a group of CEEC countries, or is not included at all. Furthermore, the nature of the multi-country models implies that the model closures are defined on a global scale, allowing for a macroeconomic disequilibrium on the individual country level[5].

The presented CGE model (CZNATEC) refers to small open economy and is structurally very similar to the IFPRI standard (Lofgren and Robinson, 2003). Due to this similarity we do not present the model in all details (the reader can find it in the cited Lofgren et al. or in Křístková. 2010b), instead we concentrate on the most distinguishing features of CZNATEC. The specific focus of the study on agriculture is reflected in the production and commodity structure of the model. The national economy is disaggregated into 13 production sectors; of which 8 represent individual agricultural sectors. and the others represent the sectors of industry (food processing, non-food industry) and services (research and development and other services).

In the model. perfect competition and constant returns to scale are assumed at the production side. Total gross production of a sector is represented by a nested pro-

[5] The presented CGE model is thus the only currently existing CGE model with agricultural policy extensions, built for the economy of the Czech Republic.

duction function with a fixed-factor Leontief combination of intermediate consumption and value added.

Two groups of production sectors are distinguished for the modelling of added value: sectors that use land as a production factor (*secland*) and sectors that use only labour and capital (*secnland*). In the first stage. value added is formed by the combination of labour ($L_i$) and capital-land bundle ($KD_i$) based on the *CES I* production function (Equation 1):

$$CES\ I:\ VA_i = aF_i \cdot \left(\chi F_i \cdot KD_i^{-\rho Fi} + (1-\chi F_i)\cdot L^{-\rho Fi}\right)^{-1/\rho Fi}, \tag{8.1}$$

where $aF_i$ is the efficiency coefficient and $\chi F_i$ and $(1-\chi F_i)$ are the distribution parameters of the production function. Parameter $\rho Fi$ in the exponent is derived from the elasticity of substitution $\sigma Fi$ between the production factors $KD_i$ and $L_i$.
In the second stage. the optimal combination of capital stock $K_i$ and land $D_i$ is modelled analogously with the use of the *CES II* production function (Equation 2):

$$CES\ II: KD_i = aG_i \cdot \left(\chi G_i \cdot K_i^{-\rho Gi} + (1-\chi G_i)\cdot D^{-\rho Gi}\right)^{-1/\rho Gi}. \tag{8.2}$$

The production structure further incorporates the depreciation of capital stock. which is modelled as a fixed proportion from the current level of capital stock.

The behaviour of households in the Czech economy is simulated by introducing two representative households – farmer households and other households. which optimise their utility subject to a budget constraint. Whereas microeconomic theory provides numerous suggestions. a standard choice in the field of CGE models is the Stone-Geary Linear Expenditure System (*LES*) which incorporates a subsistence level into the utility function (Equation 3).

$$U = \prod_j \left(C_j - \mu Hj\right)^{\alpha HLESj}, \qquad \sum_j \alpha HLES_j = 1 \tag{8.3}$$

where $U$ is the consumer's utility, $C_j$ is the amount of consumption of the j-th commodity. $\mu H_j$ represents the subsistence level of consumption of each j-th commodity[6] and $\alpha HLES_j$ is a preferential parameter of the respective j-th commodity in the consumer basket.

The households' consumption budget is determined by the net value of its income after taxation and transfers, reduced by its savings.

In the CGE model. government is also introduced as an optimizing agent that maximizes utility subject to the disposable budget, derived from incomes received on the basis of tax collections. Contrary to households, it is not necessary to incorporate

[6] If μH = 0, the *LES* utility function is reduced to the Cobb-Douglas utility function.

subsistence level in the government´s utility function, which enables to work with the simpler Cobb-Douglas type of utility function:

$$U = \prod_j CG_j^{\alpha CG_j}, \text{ where } \quad \sum_j \alpha CG_j = 1. \tag{8.4}$$

where $CG_j$ is governmental consumption of a commodity j and $\alpha CG_j$ represents a preferential parameter in the government´s consumption basket.

The closure of the governmental account is arranged by fixing a ratio of governmental consumption to GDP. Governmental savings are thus adjusted to the difference between governmental incomes and expenditures.

Total supply in the market is represented by a composite commodity consisting of the bundle of domestically produced goods supplied to domestic markets. and imports. The composite commodity is a result of two simultaneous forces in the model: first. the intention of the producer to find the most profitable combination of supply between foreign and domestic markets. modelled with a Constant Elasticity of Transformation *(CET)* function, and secondly the intension of the consumer to find an optimal combination of an imported and domestically produced commodity, modelled with a *CES Armington* function. An extension to the foreign market equations has been carried out in order to model trade and financial flows on a disaggregated level comprising the EU foreign sector and the Rest of the World (RoW).

Furthermore. the model is based on the following closure options and factor market assumptions: *(i)* supply of labour and land is fixed; the capital stock grows at the rate of net investments, *(ii)* capital is fully employed in all sectors, whereas land is employed only in sub-sectors of agriculture, *(iii)* certain amounts of labour are not employed. modelled by a Phillips curve determining the level of unemployment, *(iv)* the model follows a standard macroeconomic balance of savings and investment, *(v)* based on the assumption of a small country, both world export and import prices are fixed, *(vi)* two foreign sector closures (for the EU and the RoW) consist of an endogenous exchange rate adjusting to the exogenously-set foreign savings.

The CGE model follows a recursive form of dynamization with a Tobin's Q investment function, which allocates investments to the sectors according to their ratio of profitability to user costs (Křístková, 2010 a). In the dynamic part. the expected growth rates of the exogenous variables were taken from the following official sources: the prediction of EU GDP is based on the Economic Forecasts of the European Commission (EC, 2010b), world prices and world GDP are taken from the IMF predictions (IMF, 2010), and the growth rates of the domestic exogenous variables. such as transfers and the GDP deflator. are taken from the Czech Ministry of Finance (MF. 2010). CZNATEC is calibrated on the economy of 2006 and provides simulations until 2020.

The instruments of the CAP included in the CGE model concern direct payments (1st pillar) and investment subsidies (2nd pillar). Given the fact that in the Czech

Republic the direct payment rate per hectare greatly exceeds the land's rent[7], modelling direct payments solely as land subsidies would cause computational problems, which is also alerted by other CGE modellers (see Gohin and Bureau, 2006). In order to eliminate this problem. part of the direct payment subsidy is allocated to land and the rest is modelled as a production subsidy. Furthermore, the sources of financing the direct payments are recorded in the balance of payment equation of the EU (for the *SAPS/SPS*[8] payments from the EU) and in the governmental expenditures equation (for the "*Top-Up*" payments). The investment subsidies in the 2nd pillar are incorporated into the investment allocation function for the recipient sectors.

**8.1.1.2. Description of used data sources**

The application of the CGE model requires data arranged in the form of a Social Accounting Matrix (SAM). The Social Accounting Matrix represents a consistent accountancy framework which is used in the set of simultaneous equations to quantify the intensity of shocks introduced in the system. The SAM contains information about the economy recorded in the System of National Accounts. Nowadays, after a pause in the field of economic modelling caused by a lack of relevant data. the Czech national accounts are fully compatible with the other countries of the European Union. The general form of the Social Accounting Matrix (SAM) is based on data provided by the Czech Statistical Office (CSO) in their published version of the SAM for the year 2006. Given that the purpose of the CGE model is to provide agriculturally oriented policy simulations. the general SAM does not provide sufficient details on the agricultural accounts. This refers to the proper disaggregation of the production accounts. representing key agricultural activities, the commodity accounts. representing flows of domestically produced. imported and exported key agricultural commodities, the production factors account with a specific treatment of land and the institutional account with independent farmer households' treatment.

In order to provide sufficient details with regards to the agricultural accounts. the SAM that was used in this CGE model was built on basis of data provided by the Institute of Agricultural Economics and Information (UZEI). Two major sources of information were used – the commodity balances and the cost surveys of agricultural enterprises. The disaggregation of household account into farmer and other households was carried out with the use of the Statistics of Household Accounts. where the groups of incomes and expenditures are recorded individually for each type of household[9].

A representation of all markets and institutions included in the CGE model and SAM is displayed in Table 8.1.

[7] For instance, in 2010, the direct payment rate (approx. 160 EUR/ha) was almost 3 times higher than the land's rent (approx. 50 EUR/ha).
[8] Single Area Payment Scheme (SAPS) is the current regime of the direct payments distribution in the Czech Republic, which will be replaced by the Single Payment Scheme (SPS) from 2014 on.
[9] The final SAM, representing a matrix of 43x43 size, is available upon request.

Table 8.1. Representation of agents and markets in the CGE model

| Sets | Elements of sets | Sets | Elements of sets |
|---|---|---|---|
| Production sectors/ Commodity markets | Cereals | Production factors | Labour |
| | Fruits and vegetables | | Land |
| | Sugar beet | | Capital |
| | Oilseeds | Institutions | Firms |
| | Cattle | | Farmer households |
| | Pigs and poultry | | Other households |
| | Milk | | Government |
| | Food processing | Foreign sector | EU |
| | Industry | | |
| | Research and development | | Rest of the World |
| | Services | | |

*Source: Authors´calculation.*

**8.1.1.3. Definition of scenarios and main assumptions**

In line with the different alternatives of the 2nd pillar financing, four scenarios are analysed in the chapter. It is important to note here, that out of the four axes of the CAP's second pillar, the CGE model only allows for the explicit modelling of subsidies in the first and the third axes due to their investment character. The second axis is mainly associated with the production of public goods in agriculture, such as landscape maintenance or biodiversity. Despite the attempts to introduce the agro-environmental payments into the CGE model (e.g. in works of Rødseth, 2008 or Parra-Lopez et al.. 2009), due to its complexity. the presented analysis only concentrates on the investment subsidies and therefore. all alternatives concerning different budget allocations to the second pillar are analysed as if they were investment subsidies.

An overview of the applied scenarios is presented in Table 8.2. Scenario 1 considers a modest decline of the funds allocated to the second pillar of the CAP (10% decline from 2014), followed by Scenario 2 with a 20% decline in budget. Scenario 3 analyses the situation of a 10% budget reallocation from the first to the second pillar of the CAP, accompanied by a proportional increase of national co-financing. Finally, the baseline scenario represents a status-quo situation. in which the direct payment rate per hectare reaches 252 EUR from 2014 on (based on EC 2011c) and the budget allocations in the second pillar remain at the level of 2013 without change.

Given the investment nature of the subsidies included in the 2nd pillar, it is expected that their reduction would have stronger repercussions in the longer term, due to the adverse effect on the capital formation in agriculture. On the other hand, the reallocation of subsidies from the first to the second pillar could negatively influence the competitiveness of the agricultural sector in the very short run as the first pillar subsidies usually act as production subsidies covering producer costs.

Table 8.2. Overview of the Scenarios applied in the CGE model

| Scenario | Modeling 1st pillar CAP | Modeling 2nd pillar CAP |
|---|---|---|
| Scenario 1 | SPS = 252 EUR/ha from 2014 | 2nd pillar budget declines by 10% |
| Scenario 2 | SPS = 252 EUR/ha from 2014 | 2nd pillar budget declines by 20% |
| Scenario 3 | SPS = 227 EUR/ha from 2014 | 10% of 1st pillar reallocated to 2nd pillar (+25% national co-financing) |
| Baseline | SPS = 252 EUR/ha from 2014 | 2nd pillar budget remains on the level of 2013 |

*Source: Authors´elaboration.*

### 8.1.2. Results

The results obtained from the CGE model simulations should always be interpreted relative to the baseline scenario in order to obtain an insight into the impact of the policy instruments on the variables of interest. General equilibrium models provide a comprehensive overview about the economy taking into account the complexity of linkages among various markets and sectors. In line with the research questions stated in the introduction chapter. the results of the simulations are interpreted in the following order: at first. the effects on the agricultural sector are analyzed in larger detail and consequently the implications on other industries and national economy are discussed.

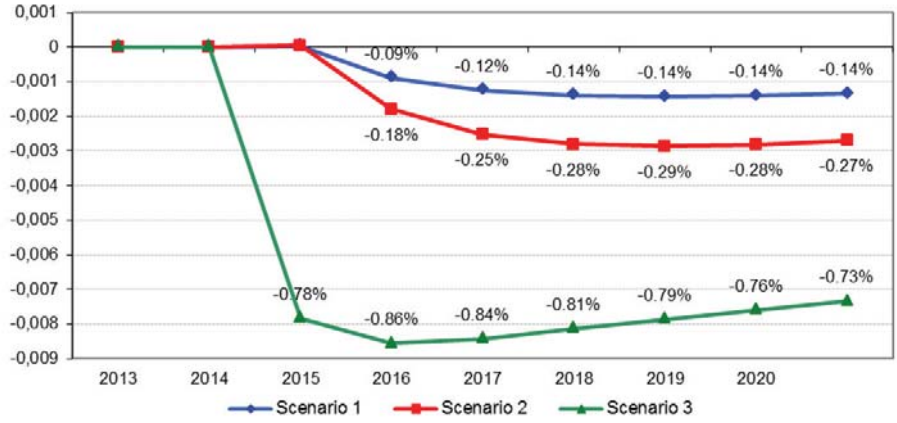
#### 8.1.2.1. Impact of Pillar II budget alternatives on the agricultural sector

In this section. the impacts of the 2nd pillar budget alternatives on the sector of agriculture are analysed. It should be noted that until 2014, the scenarios converge as there is no change in the agricultural policy. After 2014, different evolutions across the scenarios can be observed. In line with the assumptions. the reduction of funds to second pillar in Scenario 1 and 2 would have a negative effect on the gross agricultural production (GAP). However, these effects are rather marginal as they produce only a 0.3% decline of GAP against the baseline (Figure 8.1). Also in line with the assumptions. the effects become more pronounced over time, with negligible impacts in the short run. The most significant repercussions could be expected under Scenario 3 in which the gross agricultural production would decline by 0.8% compared to the baseline. Moreover, it is observed that the effects are immediate as the production declines sharply from the beginning of the simulation. This finding is explained by the fact that in Scenario 3, financial means are reallocated from the first to the second pillar of the CAP, which is translated into a lower direct payment rate per hectare and an immediate decline of farmers' competitiveness due to rising producer costs.

Figure 8.1. offers yet another interesting observation – although the level of magnitude of the quantified effects on the GAP is rather insignificant, the reallocation of funds from the first to the second pillar in Scenario 3 causes a much stronger contraction of agricultural production, than a simple decline of the second pillar budget in Scenarios 1 and 2. Taking into account that the funds allocated to the second pillar in Scenario 3 are even higher than funds allocated in Scenario 1 and 2 (the reallocated

budget is topped-up by the national government due to the rule of 25% co-financing in Scenario 3. see Table 8.3). it is clear that the agricultural sector is much more sensitive to reductions in the 1st pillar subsidies compared to the second pillar subsidies.

Figure 8.1. Evolution of Gross Agricultural Production in c.p. 2006 (deviation against baseline)




*Source: Authors´ calculation.*

Table 8.3. Comparison of the budget allocations before and after the CAP reform

| million CZK | 1st Pillar CAP budget (annualy) including Chapter 68 | | 2nd Pillar CAP budget (annualy) | | Total CAP Budget | | % Change |
|---|---|---|---|---|---|---|---|
| | Before Reform (2013) | After Reform (2014-2020) | Before Reform (2013) | After Reform (2014-2020) | Before Reform (2013) | After Reform (2014-2020) | |
| Baseline | 23 456 | 25 162 | 8 414 | 8 414 | 31 870 | 33 576 | **5.4%** |
| S. 1 | 23 456 | 25 162 | 8 414 | 7 572 | 31 870 | 32 734 | **2.7%** |
| S. 2 | 23 456 | 25 162 | 8 414 | 6 731 | 31 870 | 31 893 | **0.1%** |
| S. 3 | 23 456 | 22 993 | 8 414 | 11 306 | 31 407 | 34 299 | **9.2%** |

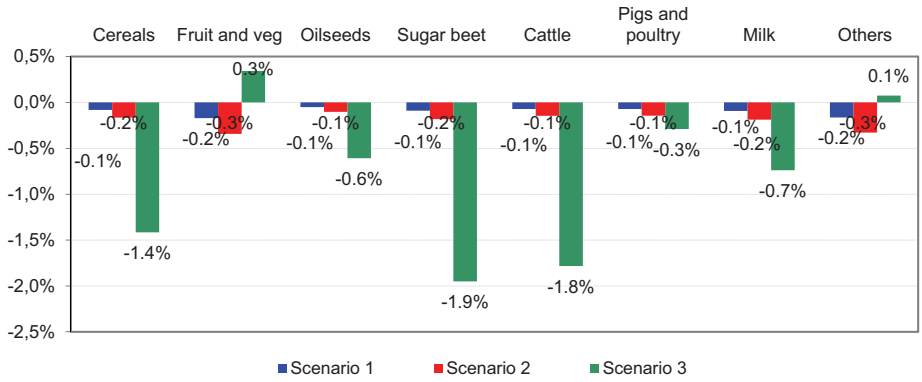
Source: Authors´ calculation.

*Note: The decline of the 1st pillar by 10% does not include Chapter 68. therefore the effective change is less than 10%.*

The CGE model also enables to analyse the impact of the budget alternatives on the individual agricultural commodity markets. Figure 8.2. displays an average percentage deviation of the domestic production of agricultural commodities against the baseline. Concerning Scenarios 1 and 2 in which the budget allocated to the second pillar declines by 10% and 20% respectively, the negative effects are distributed symmetrically across all commodities. However, in Scenario 3, the effects vary per each commodity and the strongest decline is observed in the case of cereals, sugar beet, cat-

tle and milk, whilst the commodity group of fruits and vegetables even slightly benefits from the new budget situation. This is closely related to the distribution of the direct payments in form of the SPS in which the production of commodities such as cereals is subsidized considerably more than poultry or vegetables (because of direct payments bound to land). Thus, when the funds are reallocated to the second pillar. previously highly subsidized land intensive commodities suffer more than low-subsidized commodities.

Figure 8.2. Impact of the scenarios on production of agricultural commodities (average percentage deviation against baseline)




*Source: Authors' calculation.*

The analysis of the commodity structure reveals that the contraction of the agricultural sector in Scenario 3 is mainly driven by the decline of the commodities sensitive to direct payments contributions.

The overall effect of the analysed budget alternatives on employment in agriculture is displayed in Table 8.4. It is visible that the decline in the gross agricultural production is transmitted to a lower demand for labour leading to a decrease in employment in agriculture. However it is notable that the reduction in the second pillar budget produces milder shocks to labour market than the reallocation of funds from the first to the second pillar. This is closely related to the role of the second pillar subsidies in the economy. As these subsidies are linked to investments, their reduction would slow down investment activity in agriculture and the formation of physical capital. Therefore, the decline of the agricultural production in Scenarios 1 and 2 is mainly caused by decelerating capital formation in agriculture. On the other hand, the reallocation of funds from the first to the second pillar would produce much stronger effects on the labour market because of limited substitution of labour by capital as the capital is fixed in the short-term.

Table 8.4. The impacts of the scenarios on the employment in agriculture
(% deviation against baseline)

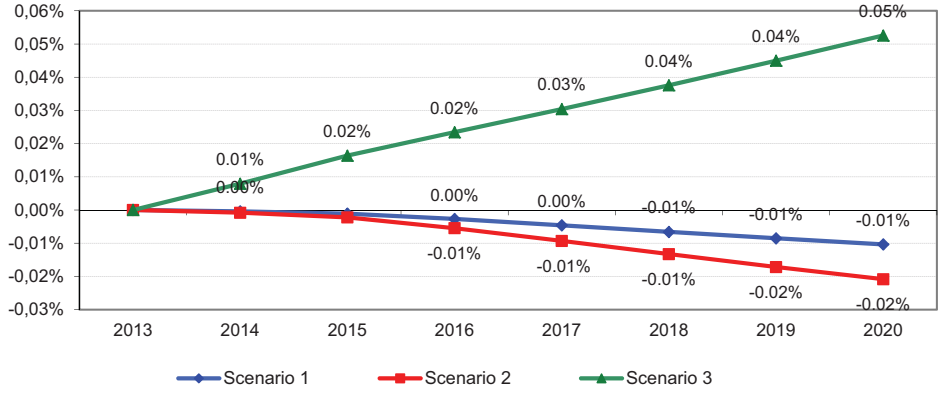
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Average |
|---|---|---|---|---|---|---|---|---|
| Scenario 1 | 0.00% | -0.05% | -0.07% | -0.08% | -0.09% | -0.09% | -0.09% | -0.06% |
| Scenario 2 | 0.01% | -0.09% | -0.14% | -0.16% | -0.18% | -0.18% | -0.18% | -0.12% |
| Scenario 3 | -1.25% | -1.28% | -1.27% | -1.24% | -1.22% | -1.19% | -1.17% | -1.08% |

*Source: Authors´ calculation.*

**8.1.2.2. Impact of Pillar II budget alternatives on other sectors of the economy**

The general equilibrium approach applied in this chapter also enables to assess the effects of the different budget alternatives on the other sectors of the national economy, which are interlinked with agriculture through their intermediate consumption and the markets of production factors. Figure 8.3. plots the evolution of the gross value added in industry and services (calculated as a percentage deviation against the baseline). Although the reported changes are relatively small, they still provide an interesting insight into the impact of the CAP funds in the economy. It can be observed that whereas the reduction of the second pillar budget would negatively influence the remaining sectors of the economy the reallocation of subsidies from the first to the second pillar would in fact boost them. This finding is related to the nature of the second pillar support; due to the fact that investment subsidies in the second pillar are also distributed to rural development projects in industry and services. their reduction has much broader effect across all industries (although these are small in terms of the magnitudes). Under Scenario 3, in which funds are reallocated to the second pillar. value added in industry and services goes up via two channels – directly as there are more rural development projects financed outside agriculture and indirectly as the farmers lose competitiveness and resources from agriculture are reallocated to industry and services. Furthermore it is observed. that these effects become more pronounced over time as the reported values do not converge back to the baseline. This shows that a policy shock that happens in 2014 has ongoing repercussions beyond 2020.

Figure 8.3. Impact on gross value added of industry and services
(% deviation against baseline)




*Source: Authors' calculation.*

### 8.1.2.3. Impact of the 2nd pillar budget alternatives on macroeconomic situation

Finally, the effects of the CAP budget reform on the macroeconomic stability can be assessed. Table 8.5. contains an overview of the impacts of the selected macroeconomic variables. For most of the variables, the effects are negligible. This is understandable as the agricultural sector participates only by a small share in the total GDP of the country and therefore policy simulations directed to agriculture will have limited impact on the whole economy.

In spite of these small effects, it is still possible to interpret the obtained macroeconomic effects as they can indicate the direction in which the scenarios affect the economy. Concerning the wage rate, with a 10% reduction of the second pillar funding. there is no impact. A small negative effect can be registered in the case of Scenario 3, which is in line with the decline in agricultural employment discussed in chapter 3.1. The reaction of the land market is much stronger than of the labour market. Unlike labour. which can freely move from agriculture to other industries. the use of land is restricted to agriculture and in addition. its supply is limited. Therefore, a minor change in demand for land causes a major reaction in the rental prices of land. This is well illustrated in the case of Scenario 3, in which the reallocation of funds in the first pillar to the second pillar produces a decrease in the demand for land, which results in a considerable decline of the land rental prices.

As a consequence of the decline in agricultural employment, the unemployment index goes slightly up in Scenario 3. The effect of the total domestic savings is positive in the case of Scenarios 1 and 2 because the reduction of the second pillar subsidies from the EU also reduces the burden of national co-financing and thus has a positive effect on the governmental budget. When funds are reallocated from the first to the second pillar, the requirements for co-financing increase and the effect on national savings is negative, as shown in Scenario 3.

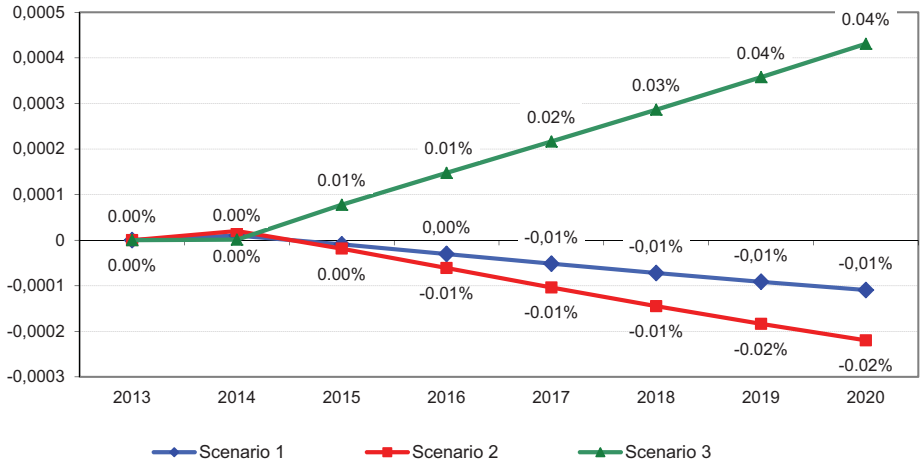
Table 8.5. Impact on the macroeconomic indicators
(average % deviation against baseline)

| | Scenario 1 | Scenario 2 | Scenario 3 |
|---|---|---|---|
| Wage index | 0.00% | -0.01% | -0.02% |
| Index of land rent | -0.06% | -0.12% | -19.73% |
| Unemployment | 0.03% | 0.07% | 0.13% |
| Total Savings | 0.03% | 0.06% | -0.13% |

*Source: Authors´calculation.*

The evolution of the Gross Domestic Product in all scenarios is displayed in Figure 8.4. This Figure clearly shows that, whereas the reduction of the second pillar budget in Scenarios 1 and 2 has a negative effect on the overall GDP, the reallocation of funds from the first to the second pillar has a positive effect on GDP. This result is in line with the evolution of value added in industry and services.

Figure 8.4. The impact on the Gross Domestic Product (% deviation against baseline)




*Source: Authors´calculation.*

### 8.1.3. Discussion

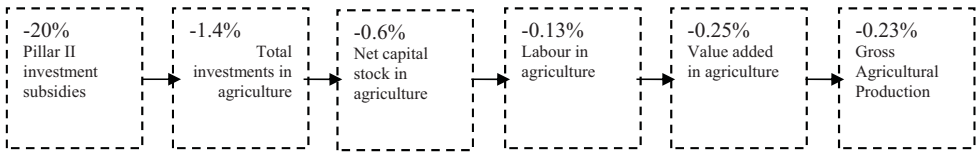
The results of this analysis must be interpreted in the context of the applied modelling approach. The CGE approach is characteristic by its reliability on a range of assumptions, such as optimization behaviour of all agents or flexibility of prices to achieve equilibrium on all markets. Furthermore, due to a shortage of reliable econometric estimates. most of the elasticity parameters in the CGE models are taken over from existing literature. Furthermore, the use of the CGE models requires a very detailed representation of the economy, which is often not readily available, especially when analysing the effects of specific sector policies. Despite these shortcomings, the

CGE models are one of the few methodological instruments that enable to assess various policy simulations in a very comprehensive way.

In this study. the applied CGE model CZNATEC was used to assess the impact of the alternative financing options of the second CAP pillar on the agricultural sector and the total economy. It was found out that the effects have long-term implications on the economy and therefore, the dynamic modelling approach applied in this study is appropriate. Also. the directions of changes caused by the considered policy simulations are logical and they show that the agricultural sector is more sensitive to changes in the first pillar subsidies, due to a significant role of direct payments in the competitiveness of the agricultural sector. Direct payments also strongly influence prices on land market due to the capitalization of direct payments in land rents which is also observed in the case of the Czech Republic[10]. The simulated reduction in direct payments rate thus creates strong pressures in land market and leads to an extreme decline of land rents as shown in Scenario 3. However, it should be noted that in the reality, land prices would not decline so dramatically because of existing transaction costs that cause high rigidity of land market. as discussed in Ciaian and Swinnen (2006).

Probably the most disputable finding of the study is the negligible effect of the concerned scenarios on the agricultural sector. As the results show, even under a 20% reduction of the second pillar budget. the gross agricultural production declines by less than a percent. This is explained by the fact that in the baseline scenario public investments financed from the CAP budget represent only about 17% of total investments in the sector. Private investments are thus major drivers of capital formation in agriculture. Therefore, a reduction in investment subsidies by 20% causes only a one percentage decline in total investments. resulting in less than a percentage decrease in net capital formation and less than a quarter percent fall of value added in agriculture (the graphical representation of these causal relations is displayed in Figure 8.5).

Figure 8.5. Chain reactions caused by the Pillar II budget reduction by 20%




*Source: Authors´elaboration.*

The results of this research can be only partially compared with other chapters. since the multi-country CGE models, such as the GTAP, have a different model structure. As opposed to the micro-level. where the effects on particular agricultural com-

[10] Land prices in the Czech Republic have increased by 50% between 2003-2009, partially as a result of direct payments allocations (evidence from MA, 2009 and 2010).

modity markets are more comparable. macro-level comparisons can be misleading due to different macro closures in each model.

### 8.1.4. Conclusions

In this subchapter, three scenarios concerning different budget options of the reformed CAP were analysed. In order to quantify both the direct effects on the agricultural sector, but also the indirect effects on the Czech economy. a general equilibrium approach was applied. The simulations considered a policy shock in 2014 and assessed its impact until 2020.

From the results reported in the previous section. it can be concluded that changes in financing the second pillar of the CAP that are realistic to expect (i.e. up to a 20% reduction of the budget, or a 10% reallocation between pillars) will produce marginal effects on the economy. However, when comparing these effects across the scenarios, the reallocation of funds from the first to the second pillar has considerably larger negative effects on gross value added and employment in agriculture than the case of the second pillar budget reduction. On the other hand, the reallocation of funds would produce small but positive effects on the remaining sectors of the economy and the GDP.

These results suggest that alternatives for the financing of the second pillar highly depend on the aim that the policy makers pursue. If sustaining employment in agriculture is the main goal. then any reductions in direct payments, even when compensated by larger investment subsidies, might cause an outflow of labour from agriculture. However, allocating more funds to investment subsidies in the second pillar seems to be a better choice if the aim is to stimulate all sectors of the economy. Moreover, the benefits or investment subsidies are more pronounced in the longer run.

An interesting extension of this research would include a prolongation of the prognostic horizon beyond 2020 to trace the effects of the investment subsidies in agriculture in the longer run. Furthermore, the incorporation of the agri-environmental payments to the CGE model would enable a more complex assessment of the second CAP pillar budget effects in the economy.

## 8.2. Rural economies and the Pillar II budget debate: a regional perspective

Following the legislative proposal of the Rural Development Regulation (RDR) for the period 2014-2020 (COM(2011) 627/3) the Commission also issued its notion about the budget allocation for Pillar II. Unlike to Pillar I of the CAP, the legislative proposal of the RDR includes only the total EU budget outlay without its further distribution among Member States (MS). It might indicate that the Commission is keen on redistributing Pillar II allocations among MS. The ideas about the possible reallocation are given in the Fiche 14 of the MFF issued in November 2011.

The proposals on the MFF 2014-2020 assume a "nominal freeze" of the CAP amounts (both pillars) at the 2013 level. For rural development, the 2013 amount

corresponds to 14.817 million EUR. After some adjustments including the UK's vol-voluntary modulation and the shift of the cotton restructuring program the final proposed amount for Pillar II is 14.455 million EUR per year. The MFF Fiche 14 with the reference to the impact study (SEC(2011) 1153) argues that there are obvious disparities in the current Pillar II allocations among Member States. Both the impact study (SEC(2011) 1153) as well as the Fiche 14 of the MFF presents several alternatives of the budget allocations among Member States: for example *the integration scenario*, *the refocus scenario* or *a redistribution scheme* in the interval ±10% of the current level. The first two reallocation options correspond to shifts in priorities between the three objectives of the rural development policy (Table 8.6): the integration scenario emphasizes a stronger alignment with Europe 2020 priorities and targets, while the refocus scenario drives the rural development policy to concentrate entirely on environment and climate change issues. The redistributions of the financial envelopes are calculated on the corresponding (proposed) indicators/criteria as presented in Table 8.6 (SEC(2011) 1153).

Table 8.6. Three main objectives of the rural development policy and the corresponding indicators

| | |
|---|---|
| Objective 1 – competitiveness | UAA#. labour. inverse index of labour productivity (reflecting the extent of the farming sector and if it lags behind) |
| Objective 2 – sustainable management of natural resources and climate change activities | UAA. area of NATURA 2000. naturally handicapped areas. forest. permanent pasture areas (reflecting both environmental pressures and the potential to provide environmental public goods) |
| Objective 3 – balanced territorial development | Rural population (reflecting potential beneficiaries of support). with a GDP inverse index used across the board to reflect cohesion considerations |

# Utilised Agricultural Area

*Source: Fiche 14 of the MFF 2014-2020.*

The budget allocation formula for the integration scenario is quite complex weighing the agricultural sector viability. environmental concerns and the importance of rural areas: *[1/3 [(½ UAA + ½ Labour) x labour productivity inverse index] + 1/3 (1/3 NHA[11] area + 1/3 Natura 2000 + 1/6 Forest + 1/6 Permanent pasture) + 1/3 Rural population] x GDP inverse index*; for the refocus scenario the formula is significantly reduced to only environmental indicators: *(1/3 Area + 1/3 Natura 2000 + 1/6 Forest + 1/6 Permanent pasture) x GDP inverse index*; the ±10% redistribution scheme combines by 50% the total envelope on the basis of the current distribution key and by 50% the new distribution key of the integration scenario.

[11] Naturally Handicapped Areas.

The mentioned three scenarios assume a cut of the budget for the Czech Republic between 10 and 30%. The cut of 30%, however, seems unlikely to happen since this scenario ("refocus") is too restrictive for rural development policy and only would introduce new inequalities. While the cut of Pillar II envelope can be expected, the legislative proposal on Pillar I (direct payments) allows for shifting some resources (directly 10%) from Pillar I envelope to the Pillar II budget (Article 14, COM(2011) 625/3). In addition, Pillar II budget can be strengthened by covering some of the payments for areas with natural constraints (NHA) in Pillar I, i.e. up to 5% of the Pillar I envelope (Article 34, COM(2011) 625/3).

The objective of this chapter is to show how various Pillar II budget options and so called flexibilities between pillars affect agriculture and rural economies. Since the rural economy is deeply integrated with the urban one, the additional objective of the chapter is to assess spill-over effects i.e. how changes in the agricultural and rural policy can affect the urban economy and non-agricultural sectors.

To perform this analysis in a greater detail we have chosen a regional CGE model which distinguishes rural and urban economies. This approach and particularly the model are explained in the following section. In Section 3 we translate the above discussion on the Pillar II budget allocation in scenarios to be later assessed by the model. Then we present results in Section 4. In the final section we bring together results of this research with the results of the similar modelling exercise at the national level (Kristkova, Ratinger, 2012).

### 8.2.1. Description of the applied methodological approach

#### 8.2.1.1. Review of possible approaches

A range of economic models has been applied to assess agricultural and rural policy impacts. At least three methodological streams can be identified: 1) programming models (sectoral or farm level. e.g. the supply module of CAPRI (Britz et al.. 2008) or FSSIM (Louhichi et al., 2010)); 2) econometric market models (partial or general equilibrium. i.e. sectoral (Capri. Britz et al. 2008) or economy-wide (CZNATEC, Křístková, Ratinger); and 3) agent based models aimed at structural change. AgriPolis (Happeet, 2006) or social networks (Henning, Saggau, 2010).

Economic models for agriculture and rural development also differ in terms of agents involved (if sub-sectors or types of farms are considered, other sectors and stakeholders are included) and geographical level of analysis. which ranges from very local, regional to multinational applications (Harvey, 1990).

In more complex policy assessments, methodologies, levels of detail and geographical levels are combined usually by adopting a hierarchical structure of model approaches. Good examples of these efforts are the already mentioned CAPRI model. SEAMLESS-IF (van Ittersum et al., 2010) or SIAT of the SENSOR project (Helming et al., 2008).

In our research on the ex-ante assessment of the proposals of the new Common Agricultural policy for the period 2014-2020, we have also adopted a multi-model approach combining farm level. regional and national models (Ratinger et al., 2011). However, for the particular analysis of the impacts of the Pillar 2 budget allocation options on agriculture and rural areas we are excluding the farm level model as being too restrictive in its focus only on agriculture. Both the national and regional models are computational general equilibrium (CGE) models. In addition to CGE models' ability to capture policy-specific direct. indirect and induced effects. they can also account for possible displacement effects in factor and product markets. In recent years. the construction and use of CGE models to agricultural policy analysis has been widely applied to the investigation of trade policy issues (Tongeren et al., 2001). However, several CGE studies have also investigated the impacts of changes in farm support at the EU or national level (e.g. Keyzer et al., 2002; Gohin and Latruffe, 2006; Křístková 2011). Albeit, few studies have explored the general equilibrium effects of changes in agricultural support at regional level or sub-regional level.

The model applied in this chapter is rather embedded in the regional policy assessment tradition originating in Leontief's input-output analysis (Armstrong, Taylor, 2000). Regional Input-Output (e.g. Psaltopoulos and Thomson, 1993; Gilchrist and St. Louis, 1994) and SAM models (e.g. Roberts, 2000; 2003; 2005; Psaltopoulos et al., 2004; Psaltopoulos et al., 2006) have already become popular for analysing rural development policies. CGE applications at the regional level might still be regarded as rather scarce. however. they are growing in importance. While Psaltopoulos et al. (2011) only demonstrated the possible usefulness of the CGE approach at the regional level distinguishing rural and urban areas (sub-regions), the JRC/IPTS[12] project Rural-ECMOD (Psaltopoulos et al., 2012) already dealt with relevant options of the EU rural development policy (see also the already mentioned CAP 2020 impact study SEC(2011) 1153) in the EU wide context.

The regional CGE model of the Rural-ECMOD project which is adopted for the analysis in this chapter is a dynamic-recursive CGE model, originating in the standard static CGE model developed by IFPRI. (Lofgren et al., 2002). The recursive dynamic part is taken from Thurlow (2008).

#### 8.2.1.2. Main characteristics of the Rural-ECMOD model applied in this study

Production and consumption behaviour follows that of the IFPRI model; however, a number of modifications have been carried out in order to capture rural-urban linkages and the small regional nature of the study areas. Production activities are spatially disaggregated, i.e. they are explicitly based in either the rural or urban part of the region. While activities are spatially differentiated. commodities are not, so that the small scale of the regions under analysis is reflected. In particular, the market

[12]Joint Research Centre of the European Commission, Institute for Prospective Technological Studies, Seville.

integration of the rural and urban areas in the study regions is very high so that assum-assuming, a priori, the existence of separate rural and urban commodity markets in each study area suggests a more complete isolation of urban and rural space than is the case. Similar to production activities, households are disaggregated according to their rural/urban status. As rather typical, government represents the combined function of local and national government in each region. Finally, regarding the Rest of the World, this is assumed to capture both economic relationships with the rest of the national economy and third countries. By aggregating across the rest of the country and rest of the world, the models ignore certain trade relations and balances between the region and other parts of the country. To address this, a multi-regional model would be necessary, however this was beyond the resources of this effort.

As already noted, the update of the model parameters between periods draws on the extension of the static IFPRI model undertaken by Thurlow (2008). First, a number of exogenous dynamic adjustments can be imposed so that model produces a projected base path against which policy changes may be judged. The systematic exogenous adjustments in parameters such as total or factor-specific productivity or government spending growth (cuts) means the projected base path of the model should be able to produce "realistic" trends in key variables in the base path solution. Population and labour supply are exogenous between periods. The approach might be ignoring intra--regional migration and associated effects on the labour market, but, as with the treatment of the Rest of the World, a more comprehensive treatment was beyond our resources. In contrast to the other model parameters, capital adjustment for each sector between periods is typically endogenous, with investment in the solution of the model in period t-1 used to update capital stocks before the model solution in period t. The allocation of investments to sectors is translated into demand for producing investment goods. As in the Thurlow model, to map investment commodities in activities the simple assumption that the commodity composition of capital stock is identical across activities is employed. Effectively, the allocation of new capital across activities then uses a partial adjustment mechanism. with those activities where returns are higher than average obtaining a higher than average share of the available capital. This then determines, after accounting for (exogenous) depreciation. for the adjustment in capital stock in each activity. Alternatively, the growth rate of capital stock in a specific sector may be set exogenously. In this case, the amount of investment required for this sector is calculated and then the amount of investment available for endogenous allocation reduced accordingly.

The SAM (Social Accounting Matrix) Table for the study region (South Moravia) was constructed through a four-stage process. Stage 1 involved the regionalization of existing national Input-Output Tables for year 2005, through the use of location quotient and RAS procedures. This was followed by the rural-urban disaggregation of sectors and households, performed here through the utilization of secondary data (for example, employment data to split sectors, population data to split

households). A key issue required at this point was the definition of rural and urban boundaries in the region. In the particular case of South Moravia it was rather straightforward: Brno and its surrounding were considered as the urban area while the rest of the NUTS3 region was taken as rural[13]. This possibility to define geographically compact rural and urban areas was one of the reasons why we had chosen the region of South Moravia as the case study.

Stage 2 mainly involved the disaggregation of agricultural activity and commodity entries (through the use of FADN[14] information on farm-types) and then, the conversion of the regional Input-Output Table into a SAM structure by filling in the inter-institutional transactions of the SAM Table. The latter was carried out via the utilization of regional household income and expenditure data and information from key informants (regional agencies) and local government. In Stage 3, initial SAM entries were corrected by expert knowledge. Finally. Stage 4 involved the application of the cross entropy optimization procedure (Robinson et al., 2001) in order to balance SAM accounts.

SAM construction was followed by model calibration. which required the specification of elasticities, (exogenous) region-specific trends and closure rules. The choices of model elasticities (Table 8.7) resulted from literature review. expert opinion and finally some experiments. The model closure rules follow the notion that regions are small open economies: in the government account balance it is assumed that savings adjust endogenously and tax rates are fixed; in the external balance, real exchange rate are set as endogenous and the current account deficit as fixed; finally in the savings-investment balance, investment is taken as fixed and savings are assumed to adjust. Regarding factor markets we assume an upward-sloping labour supply function for skilled workers while the unskilled labour market assumes neoclassical adjustment.

Table 8.7. Specification of elasticities for the Rural-ECMOD model of South Moravia

| Production Block | | Trade Block | | Household Consumption | |
|---|---|---|---|---|---|
| *Top Level* | 0.4 for all sectors | *Armington* | 2.0 for all | *Frisch* | -1 |
| *Bottom Level* | 0.6 for all sectors | *CET* | 1.6 for all | | 0.33-1 |
| *Output aggregation* | 1.3 | | | *Market* | (transport 0.001) |

*Source: Own specification.*

[13]In this particular case “intermediate” districts are considered as rural
[14]Farm Accountancy Data Network

### 8.2.2. Description of the applied scenarios

To achieve the objectives of our research specified in section 8.1 we defined a baseline and five alternative policy scenarios (Table 8.8). In all scenarios Pillar I is introduced in the extent of the legislative proposal COM(2011) 625/3.

The baseline (S0BSL) assumes Pillar II in the extent and structure of the current programming period. more precisely on the basis of the regional use of the budget in the period 2007-2010. The national co-financing is made at 20%. The level of co-financing affects the amount of additional/subtracted financial means for Pillar II – stating it at 20% expands the finances of Pillar II slightly (the minimum level is 15% for all Czech regions except Prague).

Table 8.8. Scenarios

| | | S0BSL (baseline) | S1P1inP2 | S2P2-10 | S3P2-20 | S4P1inP2-20 | S5AGRINV |
|---|---|---|---|---|---|---|---|
| *Pillar I* | | | | | | | |
| Envelope | EUR millions | 890.7 | 890.7 | 890.7 | 890.7 | 890.7 | 890.7 |
| Transfer to Pillar II | | | 10% | | | 10% | |
| Direct payment (SPS) | EUR/ha | 253 | 228 | 253 | 253 | 228 | 253 |
| *Pillar II* | | | | | | | |
| Budget reduction from EAFRD in respect to 2013 | | | | 10% | 20% | 20% | |
| Modernisation of agricultural holdings | | the share as in 2007-13 | | | | | increase |
| AEM. NHA | | the share as in 2007-13 | | | | | a drop by 30% |
| Investment in the rural economy | | the share as in 2007-13 | | | | | a drop by 50% |

*Source: Own proposal.*

Various options of budget cuts and a budget transfer from Pillar I to Pillar II are presented the first four scenarios: S1P1inP2 represents only budget transfer from Pillar I (at its maximum level of 10%). S2P2-10 and S3P2-20 only the cut of the Pillar II budget by 10% and 20% respectively and S4P1inP2-20 is a combination of the first and third scenario. In addition. we defined a fifth scenario (S5AGRINV) which is financially identical with the baseline (S0BSL) but gives higher priority to agricultural competitiveness. Most of the Pillar II means go to the modernization of agricultural holdings. Scenarios are summarized in Table 8.8.

The Pillar II budget is distributed in three priority areas/support targets: a) modernization of agricultural holdings. b) support to agriculture in NHA, organic farming and environmental conservation (agri-environmental measures. AEM), and c) support to

rural areas. The latter priority area is further sub-divided the support to diversification, undertaking in rural areas and rural infrastructure. In Table 8.9, there is demonstrated the structure of CAP expenditure as well as the deviations from the baseline structure in the individual scenarios. The actual expenditures for the South Moravian region are presented in Appendix. This region is specific by relatively low expenditure to environmental conservation and NHA payments comparing to the country average. This is mainly due to smaller extent of landscape protected areas and the share of grasslands. The expenditure to modernization accounts about a half of the Pillar II budget.

Table 8.9. Budget changes in the scenarios

| | S0BSL - the share | | S1P1in P2 | S2P2-10 | S3P2-20 | S4P1inP2 -20 | S5AGRIN V |
|---|---|---|---|---|---|---|---|
| | on CAP | on Pillar II | Changes in respect to baseline (S0BSL) | | | | |
| Pillar I (DP) | 64% | | -10% | 0% | 0% | -10% | 0% |
| Pillar II | 36% | 100% | 21% | -10% | -20% | 0.1% | 0% |
| Modernisation of agricultural holdings | 19% | 53% | 21% | -10% | -20% | 0.1% | 62% |
| AEM. NHA payments | 7% | 20% | 21% | -10% | -20% | 0.1% | -30% |
| Support to rural areas | 10% | 27% | 21% | -10% | -20% | 0.1% | -50% |
| Diversification | 4% | 11% | 21% | -10% | -20% | 0.1% | -50% |
| Undertaking in rural areas | 3% | 8% | 21% | -10% | -20% | 0.1% | -50% |
| Rural infrastructure | 3% | 8% | 21% | -10% | -20% | 0.1% | -50% |
| Total CAP | 100% | | 1% | -4% | -7% | -6% | 0% |

*Source: Own calculations.*

### 8.2.3. Results

As it has been mentioned above. the analysis presented in this chapter is narrowed to effects of increasing or decreasing investment supports and in their consequence for investment activities in general. In this exercise, the investment support is targeted to agriculture, energy (biogas stations, other renewable energies), rural tourism and rural services (including infrastructure). It means that the budgets of "axes"[15] and measures are further translated into actual target sectors: agriculture, rural energy, rural hotels and restaurants and rural services. The distribution of supports to these target sectors is based on the expenditure structures in the period 2005-2010.

Table 8.10 displays the effects of different Pillar II measures on GDP as an average deviation from baseline. It can be noted that the effects on total regional GDP are relatively negligible as they range between 0.11% to -0.08% against the baseline. A more detailed inspection of the GDP growth rates in the sectoral disaggregation shows that, in general, the scenarios that reduce support to agriculture (S1-S4) have moderately positive effects on the non-agricultural sectors and negative effects on agriculture. The reallocation of funds from direct payments to investment subsidies

[15] In terms of the current Rural Development Regulation (EC 1695/2005) and Table 8.8.

results in negative effects on GDP in agriculture, which suggests that the reallocation favours mainly non-agricultural sectors[16].

Concerning the fifth scenario (S5AGRINV), in which the funds are concentrated on agricultural modernization under a baseline budget, the GDP growth in agriculture is noticeably higher (almost 3% compared to baseline), whereas the non-agricultural sectors and urban areas are worse-off.

Table 8.10. Average GDP deviations from baseline (S0BSL) over 2014-2020

| | S1P1inP2 | S2P2-10 | S3P2-20 | S4P1inP2-20 | S5AGRINV |
|---|---|---|---|---|---|
| TOTAL - regional | 0.08% | 0.04% | 0.06% | 0.11% | -0.08% |
| Rural | 0.08% | 0.00% | 0.00% | 0.06% | -0.05% |
| Urban | 0.09% | 0.08% | 0.13% | 0.15% | -0.12% |
| Agriculture and forestry | -0.71% | -1.28% | -2.11% | -1.87% | 2.91% |
| Rural Secondary | 0.17% | 0.11% | 0.16% | 0.23% | -0.30% |
| Rural Tertiary | 0.09% | 0.05% | 0.08% | 0.12% | -0.16% |
| Urban Secondary | 0.14% | 0.14% | 0.23% | 0.26% | -0.23% |
| Urban Tertiary | 0.08% | 0.07% | 0.12% | 0.14% | -0.12% |

*Source: Own calculation.*

Similar conclusions can be derived for the gross production per sector (Table 8.11). It can be observed that the production of rural sectors of energy, tourism and services slightly declines when subsidies are reduced. On the other hand, the production in these sectors is positively stimulated by the reallocation of funds from the first to the 2nd pillar, if the original distribution of funds between rural development and modernization is maintained. With more funds for modernization, the development of agricultural sector is favoured at the expense of the non-agricultural sectors.

Table 8.11. Average production deviations from baseline (S0BSL) over 2014 - 2020

| Domestic Production | S1P1inP2 | S2P2-10 | S3P2-20 | S4P1inP2-20 | S5AGRINV |
|---|---|---|---|---|---|
| Agricultural and forestry prod. | -0.68% | -1.26% | -2.09% | -1.84% | 2.91% |
| Manufacturing products | 0.15% | 0.13% | 0.21% | 0.26% | -0.27% |
| Services | 0.09% | 0.07% | 0.11% | 0.14% | -0.15% |
| Total | 0.10% | 0.07% | 0.11% | 0.15% | -0.14% |
| Grapes . Fruits & Veg. | -0.63% | -1.48% | -2.50% | -2.11% | 3.58% |
| Other Agricultural Products | -0.86% | -1.52% | -2.49% | -2.23% | 3.43% |
| Wine. Processed Fruits&Veg. | -0.08% | -0.16% | -0.27% | -0.23% | 0.35% |
| Other Food | -0.09% | -0.17% | -0.27% | -0.24% | 0.36% |
| Rural Energy | 0.42% | -0.19% | -0.38% | 0.03% | -0.97% |
| Rural Tourist Serv. | 0.63% | -0.26% | -0.53% | 0.08% | -1.40% |
| Rural Civil Serv. | 0.02% | -0.02% | -0.02% | 0.01% | -0.03% |

*Source: Own calculation.*

[16] It should be noted that biogas stations and other bio-energy activities are included in energy sector.

### 8.2.4. Comparison and synthesis with the national model results

This part concentrates on compiling the results of the two exercises: the first using the regional CGE model (Rural ECMOD) presented in this chapter and the other using a national CGE model (CZNATEC) conducted at the national level and presented in Křístková, Ratinger in this issue. To simplify the comparison and the synthesis we concentrated only on scenarios S1P1inP2 and S3P2-20 and on the indicators of sectoral GDP. It is clear that one has to be careful when comparing the results of the two different models. In this respect it is important that these models come from the same family of the CGE models, use similar functional forms and their static and dynamic structures are designed on the same principles. We have also run the identical scenarios. In spite of the great level of consistency there are also certain modelling differences concerning investment allocation methods, labour supply functions, base years (2005 for Rural-ECMOD and 2006 for CZNATEC). differences in function parameters resulting from calibrations and the different aggregation levels of activities and commodities.

The both models indicate that the transfer of financial resources from Pillar I to Pillar II of the CAP (S1P1inP2) will have a positive response in the economy (national. regional. rural and urban) in terms of GDP (Table 8.12). However, these effects are negligibly small. This is without doubtsdue to a tiny share of agriculture in the national and regional levels. Although South Moravia has a good soil and a suitable climate and its agricultural production belongs to the most important in the country, it is also an industrial and services region – thus the share of agriculture in the regional and even the rural economy is comparably small to the national level.

Table 8.12. Comparison of the national and regional results: GDP deviations from S0BSL over 2014-2020

| | | National | South Moravia | | |
|---|---|---|---|---|---|
| | | | Regional | Rural | Urban |
| S1P1inP2 | Secondary | 0.04% | 0.16% | 0.17% | 0.14% |
| | Tertiary | 0.02% | 0.08% | 0.09% | 0.08% |
| | Total | 0.03% | 0.08% | 0.08% | 0.09% |
| S3P2-20 | Secondary | 0.00% | 0.19% | 0.16% | 0.23% |
| | Tertiary | -0.01% | 0.10% | 0.08% | 0.12% |
| | Total | -0.01% | 0.06% | 0.00% | 0.13% |

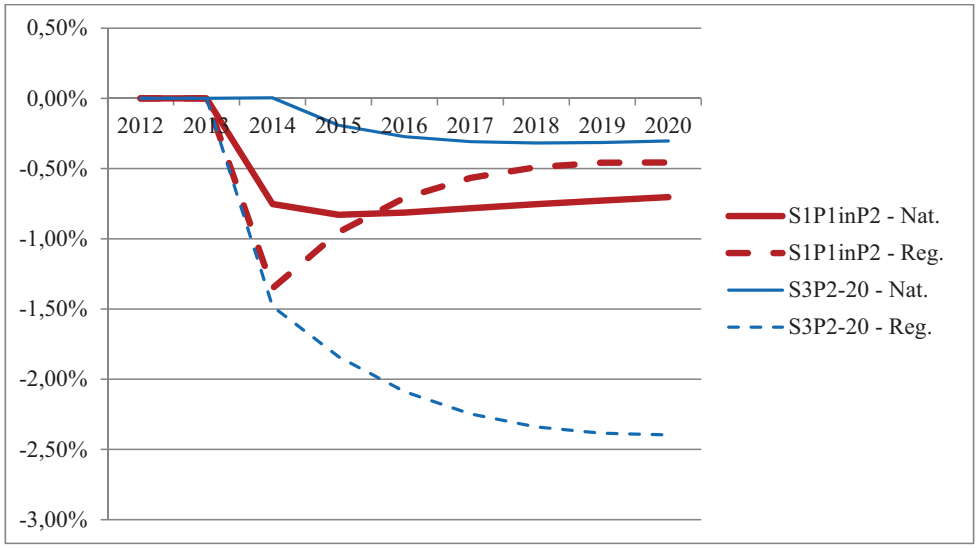
*Source: Own calculation.*

Cutting the Pillar II budget by 20% (S3P2-20) will also produce negligible total effects (perhaps with the exception on the South Moravian urban economy). The opposite signs between the national model (negative GDP effects) and the regional model (positive GDP effects) are remarkable concerning both total economy and the tertiary sector. The explanation is not straightforward: it seems that while the regional econo-

my benefits from releasing any resources from agriculture in the Rural-ECMOD model. the same does not hold for CZNATEC. and the similar tiny reduction of support to the services is not offset by the release of resources from agriculture there. Another interesting observation relates to the different responses on the sectoral level. It is apparent that the Rural-ECMOD generates slightly more pronounced effects than CZNATEC for the both scenarios.

The effects on the agricultural GDP are more significant. Looking at Figure 8.6 we can see well similarities and differences in results of both models. Cutting direct payments is a shock for agricultural production which is not compensated by an increase in Pillar II budget (bold red lines). However, farmers gradually adjust to the loss of the direct payments and both models converge to the same long run effects in terms of the relative deviations from the baseline (S0BSL). Thus we can say that in the Rural-ECMOD model. investment activity compensates losses of direct supports rapidly. while in the CZNATEC, the process of adjustment is much slower. In contrast, in the budget cut scenario the results depart significantly in terms of the magnitude of the impact. while the curves exhibit very similar shapes. We can also see that CZNATEC reaction to the policy shock is delayed in the S3P2-20 scenario.

Figure 8.6. Comparison of the national and regional results:
Agricultural GDP deviations from S0BSL over 2014-2020

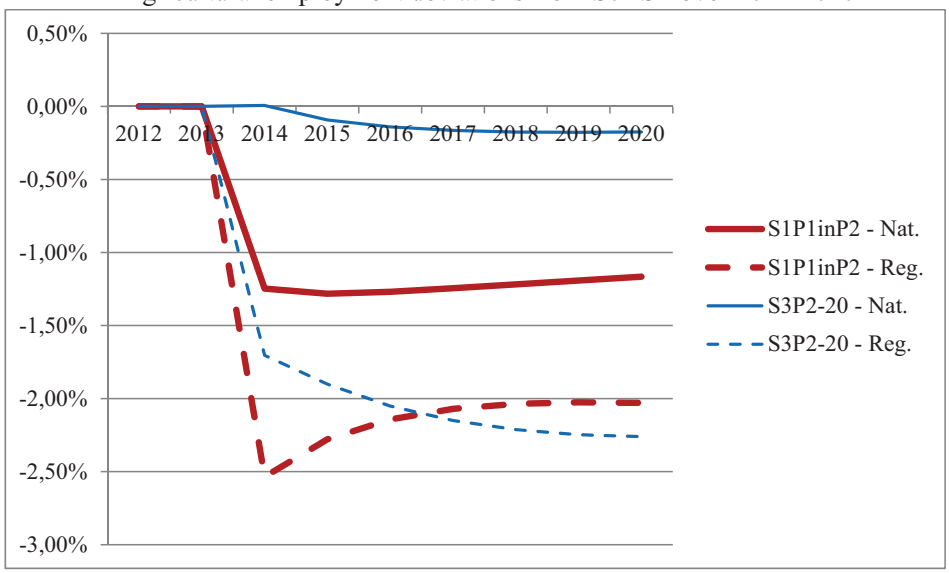



*Source: Own calculation.*

An interesting question is how do factor markets such as labour and land perform in the two models? Due to the flexible labour mobility among sectors, employment effects are of a higher importance than wages (their variations are absolutely negligible in both scenarios). The responses to the policy shocks are showed in the

chart in Figure 8.12. The shapes of the response curves are similar to those in Figure 8.7. only magnitudes are different: for S1P1inP2 the deviations from baseline (S0BSL) are twice bigger in absolute terms for agricultural labour than for agricultural GDP; in contrast in S3P2-20, the deviations contract at the national level, while they stay almost constant at the regional level if we move from agricultural GDP to employment. This cannot be explained simply by the differences between the national and South Moravian economy, it rather indicates that shocks are treated differently in each of the applied models.

Figure 8.7. Comparison of the national and regional results:
Agricultural employment deviations from S0BSL over 2014-2020




*Source: Own calculation.*

Since land is fixed in agriculture. only land rents respond to the farming sector performance. If direct payments are reduced by 10%, land rents drop – in the CZNATEC calculations really dramatically (Figure 8.8): almost nine times more than in Rural-ECMOD; again in terms of deviations from the baseline. In respect to Pillar II reductions. the land rent fall is very moderate in CZNATEC.

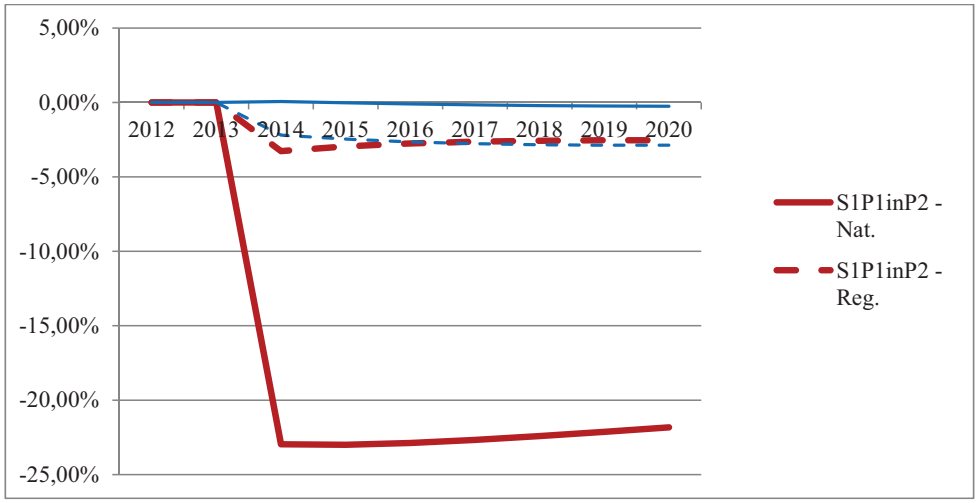
In the above comparison we could see some differences in the results of the models and the geographical levels of analyses. Some of these differences can be attributed to structural differences between the national and regional economies some of them are due to the model specifications. However, it does not seem that the results are inconsistent. In contrary, we can assert that applying these two models we can better mark the range of possible impacts of the planned policy.

The analysis also indicated the importance of taking into account regional differences when designing agricultural and rural development policies. From this point

of view it is very useful to carry out at least one additional regional model of the region which differs more substantially from the national average (e.g. Vysocina region).

Another challenge for the future will be to bring closer both models in respect to the response to investment shocks. Also, the over-sensitivity of CZNATEC in the land rent should be dealt with.

Figure 8.8. Comparison of the national and regional results:
Land rent deviations from S0BSL over 2014-2020




*Source: Own calculation.*

### 8.3. Modelling the efficiency of the agri-environmental payments to Czech agriculture in a CGE framework incorporating public goods approach

Capturing agricultural multifunctionality challenges agricultural economists for more than a decade. This is, of course, associated with the turn of agricultural policy from market intervention to the support of public goods such as environmental conservation; i.e. the turn from the commodity support to non-commodities support. On one hand, researchers increasingly build in their commodity based models provision of environmental protection and landscape maintenance; on the other hand, there are efforts to assess the value of environmental benefits provided by agriculture. Concerning the former. most of the EU-based research has tended to address multifunctionality by integrating bio-physical, land use and economic models. such as works of Uthes. Ittersum and Sieber (2010), Renting, Rossing and Ittersum (2009), Rossing, Zander and Josiem (2009), Parra-Lopez, Groot, Torres et al. (2009). Using either single or integrated model approaches, partial or general equilibrium models, the research concentrates almost exclusively on the cost of public good provision omitting completely the

economic value of the benefit. This unfortunately leaves cost benefit sides unbalanced and supports the view that agriculture is a pure consumer of taxpayer money.

This subchapter and the corresponding research is motivated by overcoming this problem by linking both research streams together. The research particularly draws on the works of Cretegny (2002), and Rødseth (2008), aiming at Swiss and Norwegian agriculture respectively, who conceptualised supply and demand of landscape public good in the CGE framework.

The objective of the subchapter is to assess the efficiency of the agri--environmental (AE) payments directed to permanent grasslands (meadows and pastures). whose maintenance is a key element of cultural landscape conservation in the Czech Republic as well as in many other European countries. This objective has been translated into three research questions: i) what landscape provision would correspond to actual WTP of households and what will be the "socially optimal" subsidy rate, ii) what is the value of "landscape" provided by farmers and iii) what would be the effect of removing a certain proportion of AE payments since 2014.

This research subchapter contributes to the current discussion on the methodological challenges connected to the evaluation of public goods provided by agriculture. According to Slee and Thompson (2011), there are several aspects of public goods that make the evaluation challenging. First of all, the level of the provision of public goods is very diverse across Europe and its value might be perceived higher in urban areas with limited countryside. Secondly, environmental public goods are also associated with the provision of non-use values which are not captured by the standard contingency valuation methods. Therefore. the scenarios applied in this chapter take into account both the use and the non-use values of the provision of landscape. Whereas the use-values are attributed to the internalized demand of households, the non-use values are associated with the additional agri-environmental payments.

### 8.3.1.Methodology

In order to assess the efficiency of the agri-environmental policy, a Computable General Equilibrium (CGE) model has been applied. The choice of this approach is supported by various arguments. According to Piermartini (2006), the general equilibrium models (CGE models) provide a consistent, rigorous and quantitative way of assessing economic policies and they serve as supporting tools in the decision making process. Decreaux and Valin (2007) further emphasize, that the CGE models are based on robust and generally accepted behavioural patterns of the economic agents. Concerning the area of public goods modelling, the CGE models are capable of internalizing public goods into markets by capturing their jointness with commodity production and by incorporating them into the consumption pattern of households or government (Rødseth, 2008).

At the very beginning of the research we assumed to utilize the survey on Czech citizens willingness to pay (WTP) for agricultural public goods (landscape)

conducted by UZEI in 2009 (Majerova. Wollmutova. Prazan. 2009). However. in the course of the work it became apparent. that the survey was more sociologically oriented and thus that it lacked a clear reference to the extent of public good in terms of what landscape area and what landscape features it covered. Therefore, the survey could only provide indicative information which had to be completed from literature or by consulting experts.

The exercise has been restricted to only public good (landscape) stemming from extensive beef production on permanent grasslands. Actually, the measure "Support to the Maintenance of Grasslands" is far the largest AEM. and grasslands are further supported by a set of agri-environmental measures including the support to organic livestock farming (MA. 2007). Concentrating on only one agricultural sub-sector enables us to incorporate the jointness of production between a concrete commodity and environmental non-commodity and to capture the competition for land between extensive and intensive farming.

#### 8.3.1.1. Description of the CGE model for the Czech Republic

The presented CGE model has been developed for the Czech Republic' economy with a specific focus on the agricultural policy simulations. The national economy is modelled in a disaggregation into 13 production sectors; of which 8 represent specific agricultural sectors and the other represent industry and services (Table 8.13).

Table 8.13. Production sectors in the CGE model

| Sector | Land employment | Description |
|---|---|---|
| sec1 | *Yes (Secland)* | cereals |
| sec2 | | fruits and vegetables |
| sec3 | | oilseeds |
| sec4 | | sugar beet |
| sec5 | | cattle |
| sec6 | | pigs and poultry |
| sec7 | | milk |
| sec8 | | other agriculture |
| sec9 | *No (Secnland)* | forestry and fishing |
| sec10 | | food industry |
| sec11 | | other industry |
| sec12 | | R&D |
| sec13 | | other services |

*Source: Own calculation.*

The production side of the economy is modelled following a standard CGE model structure (see Lofgren. 2002). It is assumed, that the total gross production is a fixed factor Leontief combination of intermediate consumption and value added under perfect competition and constant returns to scale, which can be expressed by

a nested production structure (for the schematic production structure as well as for more details on the model description see Křístková, 2010 b).

Total supply in the market is represented by a composite commodity consisting of the bundle of domestically produced goods supplied to domestic markets and imports. The composite commodity is a result of two simultaneous forces in the model. first the intention of producer to find the most profitable combination of supply between foreign and domestic markets, modelled with a Constant Elasticity of Transformation (CET) function, and the intension of the consumer to find an optimal combination of imported and domestically produced commodity, modelled with a CES Armington function. Two non-domestic institutions are assumed the EU and the Rest of the World (RoW).

The model applies six closure and factor market assumptions: i) supply of labour and land is fixed; capital stock grows at the rate of net investments; ii) capital is fully employed in all sectors. whereas land is employed only in agriculture; iii) labour unemployed is allowed and determined by the Phillips curve; iv) the model follows a standard macroeconomic balance of savings and investment; v) export and import prices are fixed; vi) both foreign sector closures (for the EU and the RoW) assume fixed foreign savings and endogenously adjusting exchange rates.

The CGE model follows a recursive form of dynamisation with a Tobin's Q investment function. which allocates investments to the sectors according to their ratio of profitability to the user costs (for a detailed description, see Křístková, 2010 a). The recursively dynamic linkage enables the growth of capital stock based on the level of investments carried out in the previous period, which are determined by total savings generated in the economy. Savings of households are determined by fixed marginal propensity to save, foreign savings are set exogenously in the balance of payment equation.

Concerning the implementation of policies it is worth mentioning direct payments. Due to the fact that the direct payment rate per hectare highly exceeds the land rent in the Czech Republic. modelling direct payments solely as land subsidies is not possible (see also Gohin, 2006). In order to eliminate this problem, only a part of the direct payments is allocated to land and the rest is modelled as a production subsidy. In the Czech Republic, direct payments are distributed in the regime of SAPS and the rate is uniform per hectare of agricultural land. However, the production subsidy rates applied in the model are sector-specific, as the subsidy share in gross agricultural production per each specialization differs (Table 8.14). For the sectors of pigs and poultry, the subsidy rate was calculated with the use of the feedstuff conversion coefficients.

All agricultural subsidies received from the EU budget are recorded in the balance of payments. For the subsidies in the second pillar of the CAP which are co-financed. the flows are also recorded in the equation of governmental expenditures.

The CGE model is implemented in the GAMS programming language and solved in MCP format using Path solver.

Table 8.14. Production subsidy rates applied in the CGE model (base year)

| Description | Order in the model | Subsidy rate as a share of Gross Prod. |
|---|---|---|
| cereals | sec1 | -0.26 |
| fruits and vegetables | sec2 | -0.02 |
| oilseeds | sec3 | -0.21 |
| sugar beet | sec4 | -0.26 |
| intensive livestock | sec5 | -0.38 |
| pigs and poultry | sec6 | -0.05 |
| milk | sec7 | -0.13 |
| extensive livestock | sec14 | -0.02 |

Note: negative sign indicates that received subsidies exceed paid taxes
*Source: Author's calculation.*

### 8.3.1.2. The Social Accounting Matrix and exogenous variables

The Social Accounting Matrix (SAM) is based on National Accounts data published by the Czech Statistical Office for the year 2006 (CSO, 2010a). Given the need to conduct agricultural policy analyses and simulations the agricultural production and commodity accounts have been disaggregated in 8 sub-sectors/commodities on the basis of commodity balance calculations and cost survey tables provided by the Institute of Agricultural Economics and Information (UZEI). From the same analytical reasons. the agricultural households are separated from the other households. This split in two household accounts is based on the Statistics of Household Accounts (CSO, 2010b).

The expected growth rates of the exogenous variables were taken from various official sources: the prediction of GDP EU is based on the Economic Forecasts of the European Commission (EC, 2010); world prices and world GDP are taken from the IMF predictions (IMF, 2010); and the growth rates of the domestic exogenous variables. such as transfers or the GDP deflator. are taken from the Czech Ministry of Finance (MF 2010). In general, external economic conditions are considered prosperous with the average world annual GDP growth 4.5%.

### 8.3.1.3. Incorporation of public goods into the CGE model

*Supply of grassland linked landscape*

As it has been already mentioned the extensive livestock farming sector is added to the SAM. It is assumed that this sector produces jointly a private commodity – beef meat and a public commodity – cultural landscape. The total domestic production of beef thus consists of the production of intensive livestock farming (sector 5 in the CGE model) and of extensive farming (sector 14 in the CGE model). It is assumed that there is no qualitative difference between the two beef commodities.

Following Cretegny (2002), the extensive farming sector produces jointly public and market commodity, where the area of extensive grasslands is the quantity of public good and value of the beef production with the concentration of 0.3 LU/ha is

the private good. Concerning the production function of the extensive farming sector. the linear form is preferred against the CES production function used in the other production sectors. as it impedes substitution between land and capital, which is characteristic for extensive farming. Table 8.15. shows the nested production structure used in the CGE model including extensive livestock.

Table 8.15. Cost structure of livestock farming (2006; in mln CZK)

| | Intensive livestock (sec5) | Extensive livestock (sec14) |
|---|---|---|
| Intermediate Consumption | 4.688 | 2.099 |
| Labour | 1.861 | 403 |
| Capital | 265 | 199 |
| Land | 73 | 889 |
| Total subsidies | -2.009 | -2.477 |
| Gross Capital Depreciation | 302 | 182 |
| *Gross-gross production* | *5.180* | *1.295* |

*Source: UZEI.*

As for the other agricultural sectors, the cost survey carried out by UZEI is utilised for the specification of the extensive livestock sector in the SAM. Table 8.15 demonstrates the differences between the cost structure of the extensive livestock sector and the intensive one. It is obvious that the extensive livestock sector must get additional revenue if it is to survive. since the production costs highly exceed market revenues.

*Demand for public goods*

The last comment on costs of extensive beef production means in turn that public good associated with extensive livestock production on grasslands will be undersupplied under market conditions. This situation is also depicted in Figure 8.9; the area of grasslands is marked as Lm.

In absence of the market for public goods it is government who can purchase socially demanded amount of grasslands landscape. Actually. the government provides funds to subsidise extensive livestock production on grasslands. Figure 8.9a) illustrates that the socially optimal supply of grasslands (L) is given by the intersection of the joint beef and public good demand curve with grasslands-beef supply curve (marginal cost of pastoral beef production per hectare of grasslands). The corresponding optimal subsidy rate (payment per hectare – S) equals marginal WTP (mWTP) at the point L (see also Rødseth (2008)).

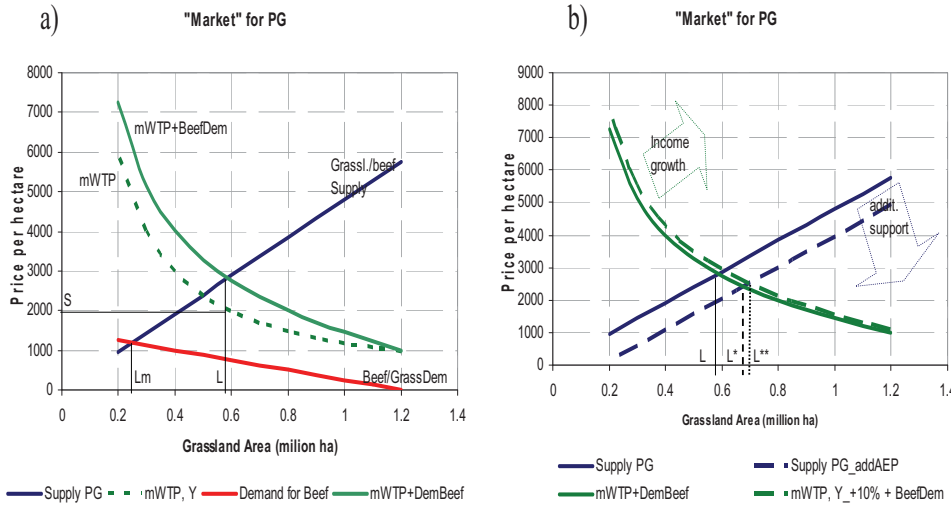
Figure 8.9b) shows what happens with the optimal provision of grasslands landscape if household income grows and/or there are additional subsidies paid to extensive beef farmers.

Following this the Czech CGE model was extended by assuming that the public good (landscape) produced by the extensive livestock farming sector is consumed di-

rectly by households. Therefore, landscape is incorporated into the Linear Expenditure System of both types of households. In order to maintain the original benchmark equilibrium. the consumption of landscape is introduced in the SAM by separating it from demand for services.

Although the original intention was to use the results of UZEI's contingent valuation of landscape, for reasons stated earlier. we finally determined the parameters of mWTP (represented in the LES form) by assuming that the provision of grassland landscape (area of grasslands) was at its optimum in 2006 and that income elasticity of WTP equals 1.2. These are strong assumptions which are only weakly supported by the evidence – no other valuation of landscape has been conducted in the Czech Republic recently.

Figure 8.9. Market for public goods (grassland – landscape)




*Source: own illustration following Rødseth (2008).*

In the assessment of the efficiency of the agri-environmental payments to the extensive livestock sector we internalize the "market" of agricultural landscape with the use of the WTP function (as described above). The price of the public good corresponds to the household marginal WTP for it. The demand for landscape depends on household income and prices of commodities; with growing real household income. households are willing to pay more for landscape and vice versa. The analytical form of the LES function for landscape. derived from the Stone-Geary utility function is provided in equation 5:

$$P_{com14} \cdot C_{com14} = P_{com14} \cdot \mu H_{com14} + \alpha HLES_j \left( CBUD - \sum_{j}^{13} \mu H_j \cdot (1 + tc_j) P_j \right) \quad \text{where j=1.2....13} \quad (8.5)$$

where $P_{com14}$ and $C_{com14}$ represent price and consumption of landscape, *CBUD* is consumer budget and $tc_j$ are indirect taxes charged on other prices of commodities, $\mu H_j$ and $\alpha HLES_j$ are the parameters of the utility function. as specified in equation 3.

In the model, the landscape production competes for land with other agricultural sectors; land is converted into extensive grassland production as long as the total income from extensive production is higher than from the intensive one. Summary of the main characteristics of the model is presented in Table 4.

Table 8.16. Main features of the modelling approach

| | **Model description** |
|---|---|
| Gross production of the extensive livestock sector | Represented by the gross production of the private commodity (beef) + public commodity (landscape) |
| Landscape supply | Modelled as a fixed share of the total gross production of sector 14 |
| Landscape demand | Explicitly included in the households expenditure system (LES) |

*Source: Author's proposal.*

**8.3.1.4. Description of Scenarios**

To show the capacity of the extended model. three scenarios on the implementation of landscape have been prepared and calculated:

*Scenario 1* aims at simulating the provision of permanent grassland landscape under the simulated "market" for public good and when no specific (additional) governmental support directed to the extensive livestock sector is assumed. Nevertheless, the sector still receives direct payments. This simulation is performed without further policy changes for the whole period 2007-2020. In order to maintain the governmental balance, the removed subsidies are transferred to both types of households in the proportion of their size.

*Scenario 2* models the situation of parallel existence of landscape market where households are the direct purchasers of landscape, and the additional governmental support to the production of landscape. The total revenue of the extensive farming sector thus consists of market revenue from the private commodity represented by beef production, the revenue from the public good market, direct payments and the additional subsidy revenue of various policy measures related to grasslands and beef production included in the agri-environmental payments.

*Scenario 3* is aimed at illustrating changes in the optimal landscape provision if the additional supports (except for the direct payments) are removed from 2014 onwards and also transferred directly to both types of households.

### 8.3.2. Results of the simulations

The primary purpose of this research is to analyse the provision of public goods from the supply and the demand side, including the consumption effects. Since the aim is not to investigate potential impacts of considered policies, there is no baseline scenario introduced. Scenarios are first interpreted with respect to the development dynamics and afterwards compared each to other.

For the simulations we applied the actual amount of supports directed to landscape maintenance for the period 2006-2010 (Table 8.17), assuming that the support will continue in the 2010 extent until 2020. The considered income elasticity of "landscape good" is supposed to be equal to the income elasticity of services (1.2). The LES is calibrated to the 2006 figures as the entire model.

Table 8.17. Agri-environmental payments directed to grasslands 2006-2010

| CZK millions | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| Maintenance of meadows and pastures | 1,866.5 | 1,777.2 | 1,766.3 | 1,445.7 | 1,462.2 |
| Other AEP directed to grasslands | 34.1 | 279.2 | 286.4 | 739.9 | 766.7 |
| Total | 1.900.5 | 2,056.4 | 2,052.7 | 2,185.6 | 2,228.9 |

*Source: SZIF (2011).*

The results are presented in terms of the landscape value. grassland area under extensive livestock. the landscape value based on WTP and beef production Figures for both the extensive and intensive farming. Furthermore, the effects on the whole agricultural sectors as well as the national economy in terms of GDP are analysed.

#### 8.3.1.1. The provision of agricultural landscape under different policy options

The provision of landscape under the scenarios is presented in Table 8.18 and Figure 8.10 below. In the benchmark period, the size of grasslands that were operated in the extensive livestock farming amounted 889 thousand hectares. The simulation of Scenario 1 shows, that the extent of grasslands would be gradually increasing in the following periods, which can be explained by an increasing real income of households and thus their increasing willingness to pay for the landscape. Furthermore, it can be expected that the grassland size would stabilize in the extent of 1,200 thousand ha in the end of the analysed period.

In *Scenario 2* when the revenue from the beef and "landscape" markets is complemented with the additional government support, the amount of land employed in the extensive livestock sector grows substantially, especially in the first half of the analysed period. The sudden fall of grasslands´ size in 2009 is attributed to the GDP decline which occurred as a result of ongoing economic and financial crises and has a repercussion in household demand and thus in demand for landscape.

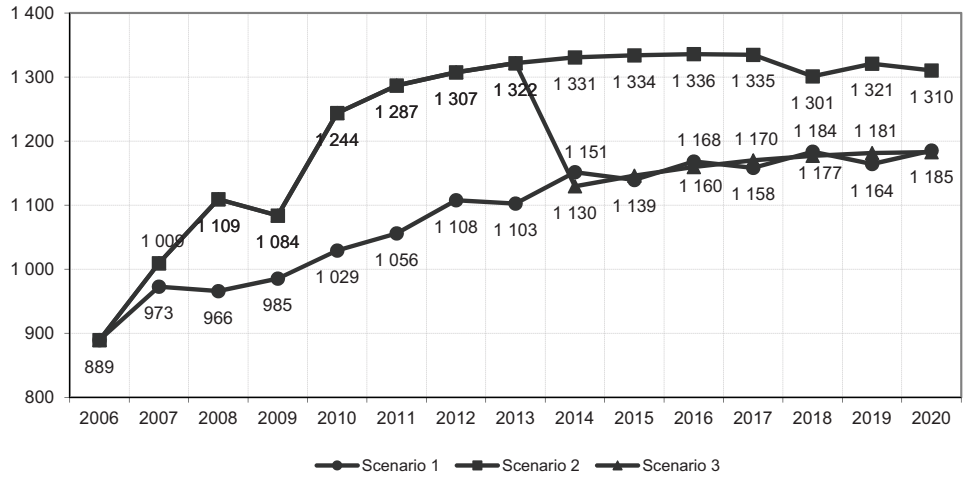
Table 8.18. Growth rates of land employed in the extensive livestock sector

| | 07 | 08 | 09 | 10 | 11 | 12 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scenario 1 | 9% | -1% | 2% | 4% | 3% | 5% | 0% | 4% | -1% | 3% | -1% | 2% | -2% | 2% |
| Scenario 2 | 13% | 10% | -2% | 15% | 3% | 2% | 1% | 1% | 0% | 0% | 0% | -3% | 2% | -1% |
| Scenario 3 | 13% | 10% | -2% | 15% | 3% | 2% | 1% | -15% | 1% | 1% | 1% | 1% | 0% | 0% |

*Source: Own calculations.*

*Scenario 3* provides the extent of grasslands if the additional agri--environmental subsidies are removed from 2014 and the support of the landscape provision is determined only by households' willingness to pay. As the Figure shows, it is possible to expect a 20% decline in the amount of land employed in the extensive livestock sector. The size of grasslands would fall from 1,322 thousand ha to only 1,130 thousand. However, in the consequent periods. the size of grasslands will slightly recover and converge to the level in Scenario 1.

Figure 8.10. Land employed in the extensive farming sector ('000 ha)




*Source: Own calculations.*

The decline of the grassland area after 2014 in Scenario 2 can be attributed to the fact that high supports capitalise in the land price. Table 8.19 shows the development of the land price indexes of all scenarios. Between 2006-2013 land prices grow faster in Scenarios 2 and 3 than in Scenario 1, due to the additional subsidy effect. Such growth of land prices signalizes high pressures on the land market due to stimulated demand for land. This can have a reverse effect on the profitability of the extensive livestock sector. After 2013, land price index falls in Scenario 3 as a result of the subsidy removal. Thus, in 2020 land prices in Scenarios 1 and 3 converge.

Table 8.19. Development of the annual land price indices

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. 1 | 1.0 | 1.1 | 1.6 | 1.6 | 2.2 | 2.2 | 2.4 | 2.5 | 2.8 | 3.0 | 3.3 | 3.6 | 4.0 | 4.2 | 4.7 |
| S. 2 | 1.0 | 1.2 | 1.9 | 1.8 | 2.8 | 2.8 | 3.0 | 3.2 | 3.4 | 3.8 | 4.0 | 4.4 | 4.5 | 5.1 | 5.5 |
| S.. 3 | 1.0 | 1.2 | 1.9 | 1.8 | 2.8 | 2.8 | 3.0 | 3.2 | 2.7 | 3.0 | 3.3 | 3.6 | 3.9 | 4.3 | 4.7 |

*Source: Own calculations.*

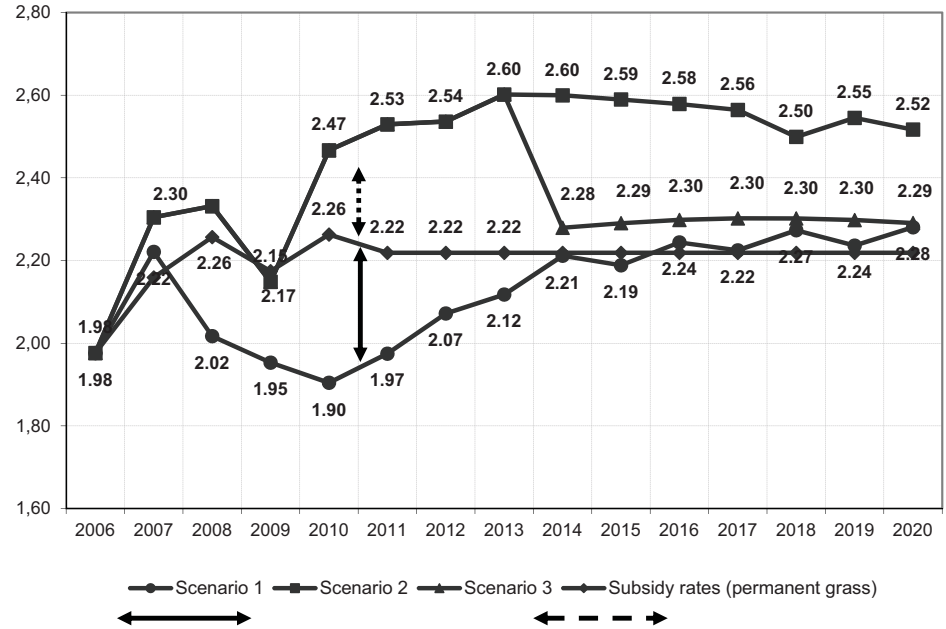
**8.3.2.2. Demand for landscape and the optimal subsidy rates**

In the benchmark equilibrium. the WTP for the landscape is set equal to the agri-environmental payments. reaching CZK 1,976 billion. The demand for landscape is determined by the LES function which depends on the households´ income and the landscape price. corresponding to the marginal willingness to pay. With growing income. the households are willing to pay more for the landscape and their demand increases. This behaviour can be observed rather in the second half of the period (Figure 8.11). Between 2007-2010 a considerable decline of the demand for landscape is noticed. which reflects the combination of two different forces, firstly the demand driven decline due to the economic crises and second, the supply driven decline due to loss of the grassland sector's competitiveness, induced by the land market development. As a response to the economic revival, between 2009 and 2010, land price index increases by 33% and this increase has serious impact on the profitability of extensive farming. The development of landscape demand in Scenarios 2 and 3 implies that the additional agri-environmental support can substantially divert the profitability decline.

Figure 8.11 allows for a comparison of landscape value determined solely by market and landscape value corresponding to actual governmental subsidy rates. In the first half of the period (2007-2013), real subsidy rates were actually exceeding implicit demand for landscape driven by households. After 2013, owing to the economic growth demand of households will return to the levels corresponding to the governmental subsidy rates. Based on this finding. it can be speculated that in the absence of governmental support, the extensive farming sector would lose competitiveness compared to other agricultural sectors. We can also assert that the current Agri--environmental programme has defined the payment rates in line with the expected demand around 2015 and that the payments will need to be revised in the programming period if they should meet the demand of 2020.

The subsidy effect is further clearly demonstrated in the case of Scenario 3 where the demand for landscape suddenly falls by 12% and afterwards tends to converge to the level of Scenario 1.

Figure 8.11. Demand for landscape by households (bln. CZK)




*Source: Own calculations.*

It can also be seen from Figure 8.11 that with the (additional) targeted supports to grasslands, the demand for the landscape considerably increases. It can be, with some caution, interpreted that supporting "other environmental values of grassland conservation including those which are not necessarily recognised or appreciated by domestic households, domestic households will benefit since they will get also more and cheaper "landscape". This is also documented in Table 8.20 which shows that if the sector of extensive livestock is not supported by other subsidies than the price of public good (corresponding to the marginal WTP for landscape), price of landscape is higher than in Scenario 2 where this support is present.

Table 8.20. Evolution of landscape price indexes

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scenario 1 | 1 | 1 | 1.15 | 1.19 | 1.24 | 1.24 | 1.25 | 1.3 | 1.3 | 1.39 | 1.41 | 1.49 | 1.52 | 1.62 | 1.65 |
| Scenario 2 | 1 | 0.96 | 0.99 | 1.07 | 0.95 | 0.96 | 1.01 | 1.05 | 1.1 | 1.16 | 1.22 | 1.28 | 1.38 | 1.41 | 1.49 |
| Scenario 3 | 1 | 0.96 | 0.99 | 1.07 | 0.95 | 0.96 | 1.01 | 1.05 | 1.26 | 1.32 | 1.38 | 1.44 | 1.5 | 1.57 | 1.65 |

*Source: Own calculations.*

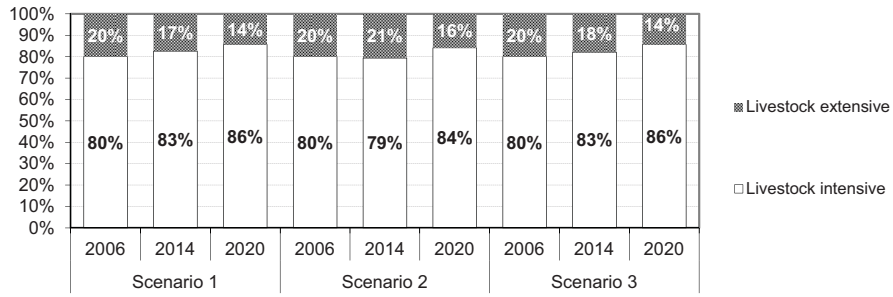
### 8.3.2.3. The effects on the extensive and intensive livestock production

The changes in the provision of landscape are closely related to the production of beef on grasslands. as these commodities are complements to each other in the production process. Moreover, the different policy options concerning grassland landscape have also simultaneous impact on the production of beef in the intensive

livestock sector. because of the single commodity market. Figure 8.12 illustrates the impact of the scenarios on the production of both extensive and intensive livestock sectors.

In the benchmark equilibrium. the value of beef produced in the intensive farming represents 80% of total beef production. The scenarios clearly show that this relation can be changed in favour of either farming sector, depending on the level of support to the extensive production. Concerning Scenario 1, due to the absence of the agri-environmental subsidies. the total demand for the provision of landscape declines. which is further translated to the decline of beef produced in the extensive farming. The decline in profitability of the extensive livestock sector leads to reallocation of resources to the sector of intensive livestock farming. In Scenario 2, the proportion of beef produced in the extensive farming is higher as the subsidies cover the production costs and contribute to lower the prices of beef meat. Scenario 3 converges with Scenario 1 and shows that the long term size of the extensive beef production would be stabilized around on the level of 14%, which is 6 percentage points less than in the initial period.

Figure 8.12. Gross production of beef in extensive and intensive livestock farming (% share)

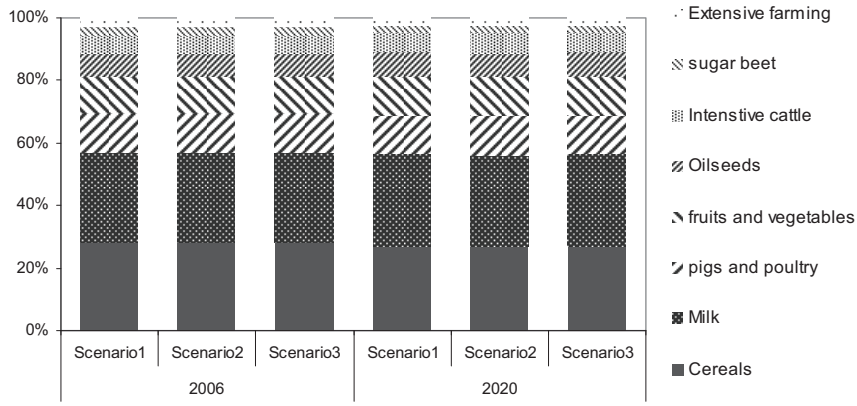



*Source: Own calculations.*

### 8.3.2.4. The effects on structure value added in agriculture as a share of GDP

Figure 8.13 provides an overview on the structure of value added in considered agricultural sectors, measured as a share in total GDP. It can be noted that changes in the structure of the agricultural sector produced by the scenarios are almost negligible. Even more negligible is the share of extensive farming sector in total GDP which also explains why the analysed scenarios produced almost no effects on the macroeconomic balance of the Czech Republic.

Figure 8.13. Structure of value added as a share of GDP




*Source: Own calculation.*

### 8.3.3. Conclusions

By incorporating provision of landscape into the CGE model. it was possible to assess the efficiency of the agri-environmental payments. It has been found out, that in the absence of these payments, the area devoted to the grasslands could be about 20% lower. However, it was also shown that in the period 2007-2013, the subsidy rates supporting the provision of landscape were above the optimum rates derived from household demand. Furthermore, the analysis also revealed the necessity to revise the agri-environmental subsidy rates for 2020.

Although the research suffered lack of credible information on the willingness of households to pay for the provision of landscape associated with extensive livestock production, it proved that incorporating public goods in the CGE model has an important capacity to improve the insight into the analysis of agri-environmental policy. If we are able to estimate or calibrate marginal WTP function we will also be able to value the non-commodity production of agriculture. It was also shown that such an extended model can provide a rich analysis of the interlinks between commodity and non-commodity production and policies.

Besides the necessary improvement on the WTP surveys as an input to modelling. there are at least two other directions how to improve the analysis: the first is straightforward – by including more than one sector of multifunctional activities. The other improvement will be using the similar approach to split the beef markets and to internalise some of the environmental attributes of the production in the value of the commodity (bio-beef).

**CAP's second pillar – some remarks from the Czech perspective – conclusions**

This chapter presented Czech perspective on the second pillar of the CAP. All the results presented are based on the CGE approach and must be interpreted within the limitation of this approach.

The results presented in the first part of this chapter show that the agricultural sector is more sensitive to changes in the first pillar subsidies, due to a significant role of direct payments in the competitiveness of the agricultural sector. Direct payments also strongly influence prices on land market due to the capitalization of direct payments in land rents which is also observed in the case of the Czech Republic. The simulated reduction in direct payments rate thus creates strong pressures in land market and leads to an extreme decline of land rents as shown in Scenario 3. However, it should be noted that in the reality, land prices would not decline so dramatically because of existing transaction costs that cause high rigidity of land market. The reallocation of funds from the first to the second pillar has considerably larger negative effects on gross value added and employment in agriculture than the case of the second pillar budget reduction. On the other hand, the reallocation of funds would produce small but positive effects on the remaining sectors of the economy and the GDP.

These results suggest that alternatives for the financing of the second pillar highly depend on the aim that the policy makers pursue. If sustaining employment in agriculture is the main goal, then any reductions in direct payments. even when compensated by larger investment subsidies. might cause an outflow of labour from agriculture. Yet, when the aims is stimulating the whole economy, allocating more funds to investment subsidies in the second pillar seems to be a better choice.

In the subchapter devoted to the analysis of the CAP's second pillar from the regional perspective the assessment presented is narrowed to effects of increasing or decreasing investment supports and in their consequence investment activities in general. In this exercise. the investment support is targeted to agriculture. energy (biogas stations. other renewable energies), rural tourism and rural services (including infrastructure). It means that the budgets of "axes" and measures are further translated into actual target sectors: agriculture. rural energy. rural hotels and restaurants and rural services. The distribution of supports to these target sectors is based on the expenditure structures in the period 2005-2010.

In the third subchapter the efficiency of the agri-environmental payments to Czech agriculture is analysed. It has been found out. that in the absence of these payments, the area devoted to the grasslands could be about 20% lower. However, it was also shown that in the period 2007 – 2013. the subsidy rates supporting the provision of landscape were above the optimum rates derived from household demand. Furthermore, the analysis also revealed the necessity to revise the agri-environmental subsidy rates for 2020.

Although the research suffered lack of credible information on the willingness of households to pay for the provision of landscape associated with extensive livestock

production, it proved that incorporating public goods in the CGE model has an important capacity to improve the insight into the analysis of agri-environmental policy. If we are able to estimate or calibrate marginal WTP function we will also be able to value the non-commodity production of agriculture. It was also shown that such an extended model can provide a rich analysis of the interlinks between commodity and non-commodity production and policies.

Besides the necessary improvement on the WTP surveys as an input to modelling. there are at least two other directions how to improve the analysis: the first is straightforward – by including more than one sector of multifunctional activities. The other improvement will be using the similar approach to split the beef markets and to internalise some of the environmental attributes of the production in the value of the commodity (bio-beef)[17].

[17] The chapter is based on the following papers:
1. Z. Křístková, T. Ratinger (2013), *Modelling the Efficiency of Agri-Environmental Payments to Czech Agriculture in a CGE Framework Incorporating Public Goods Approach*, "Agris on-line Papers in Economics and Informatics", vol. V, no 2.
2. T. Ratinger, Z. Křístková (2012), *Rural Economies and the Pillar 2 Budget Debate: A Regional Perspective*, "Agris on-line Papers in Economics and Informatics", vol. 4, no 4.
3. Z. Křístková, T. Ratinger (2012), *Impact of the CAP´s second pillar budget reform on the Czech economy*, "Agris on-line Papers in Economics and Informatics", vol. 4, no 4.

**Summary**

Year 2013 was a year in which the EC institutions were working on the final shape of the multiannual financial framework for the period 2014-2020 and the reform of the Common Agricultural Policy. This work led to the preparation of regulations defining the principles of financing the EU activities during the period 2014-2020. In 2014 the EU Member States will focus on developing a direct system optimal for them based on the combination of compulsory and optional elements. The new system is to enter into force in 2015. The other key issue for 2014 is the preparation of rural development programme 2014-2020. Both of these tasks are difficult and require a lot of care and thought considering what development direction is the most desirable from the perspective of the competitiveness of agriculture and rural areas.

The report discusses the basic elements of the Multiannual Financial Framework for 2014-2020 and the shape of the reformed Common Agricultural Policy. It also presents the results of several studies on the impact of EU support for the Polish economy. agriculture and rural areas predicted and obtained so far. The results of these studies show how uncertain is forecasting the effects of support. In addition. they indicate that the key to achieve sustainable, development-oriented outcomes are precisely targeted investments.

A lot of space is devoted to the analysis of the rate of inflow of EU funds transferred to Poland and other Member States during the programming period 2007--2013 within the Common Agricultural Policy. This problem is rarely discussed in the literature although it is not only essential for the current state of the public finances of the Member States as their CAP expenses are later reimbursed by the EC, but it also affects the scale of the potential impact of the measures directed to agriculture and rural areas.

The report also made attempts to assess the potential impact of the EU 2014-2020 funds on the Polish economy and agriculture. Analysis of the impact of the CAP on the Polish economy and agriculture confirmed the results of previous studies concerning earlier programming periods and showed that the greatest effects can be expected with an increase in the share of expenditure on investment instruments.

The new system of direct payments is a major challenge not only for Poland but also for the other Member States. which is best exemplified by France[18]. In the case of Poland, the current, extremely simple system. based solely on the arable land under cultivation. will have to become more complex and diverse. However, the scope of these changes is to a high extend a sole decision of Poland. Therefore, it should be determined whether. and if so, which farms are to be supported more strongly. This choice should be based not on the current strength of lobbying of each of the farming

[18] Currently, the rate of direct payments for 1 ha ranges from less than 120 euro to more than 350 euro. The new system must reduce this variation. Source: P-Y. Lelong (2013), *Nowa WPR a konkurencyjność przedsiębiorstw rolnych i przemysłu spożywczego. Wdrożenie WPR 2015 we francuskim wykonaniu*. Speech presented at the international conference organised by IAFE-NRI, Jachranka 9-11 December 2013.

groups. but on the developmental potential of these groups of farms. This means that there is a need to determine what kind of agricultural policy Poland wants to have in the coming years and in what direction it wants to develop Polish agriculture.

The issue of determining the direction of development of Polish agriculture affects not only the direct payment system, but also refers to the Rural Development Programme 2014-2020. As shown in chapter five via modeling the use of funds for the period 2014-2020 and as shown in chapter eight on the example of the Czech Republic. crucial for the development is the allocation of funds for investment activities. However, it should be noted that not every investment project is worth implementing. hence in the period 2014-2020 a special attention should be paid to the evaluation of proposals submitted under measures involving different types of investment. This requires looking at these projects through the prism of the current downturn in agricultural markets and the growing production risk associated with the effects of climate change and the need to reduce greenhouse gas emissions.

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## ANNEX

Table A1. Breakdown of the EAFRD 2007-2013

| Wyszczególnienie | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| Austria | 16.1 | 15.2 | 14.1 | 14.3 | 13.8 | 13.5 | 13.1 |
| Belgium | 15.3 | 15.3 | 14.4 | 14.3 | 14.2 | 13.6 | 13.0 |
| Bulgaria | 9.4 | 12.9 | 16.8 | 15.3 | 15.3 | 15.2 | 15.2 |
| Cyprus | 16.4 | 15.2 | 14.0 | 14.2 | 13.8 | 13.4 | 12.9 |
| Czech Republic | 14.1 | 13.9 | 13.8 | 14.2 | 14.4 | 14.7 | 14.8 |
| Denmark | 14.1 | 14.9 | 14.3 | 14.5 | 14.3 | 14.1 | 13.9 |
| Estonia | 13.4 | 13.4 | 13.4 | 14.1 | 14.6 | 15.2 | 15.9 |
| Finland | 16.1 | 15.2 | 14.1 | 14.2 | 13.8 | 13.5 | 13.1 |
| France | 14.5 | 14.6 | 14.0 | 14.1 | 14.5 | 14.3 | 14.1 |
| Germany | 14.6 | 14.6 | 14.1 | 14.2 | 14.3 | 14.1 | 13.9 |
| Greece | 12.4 | 12.5 | 12.2 | 12.2 | 17.0 | 16.9 | 16.7 |
| Hungary | 15.0 | 14.1 | 13.1 | 13.4 | 14.4 | 14.8 | 15.2 |
| Ireland | 16.0 | 15.2 | 14.1 | 14.2 | 13.9 | 13.5 | 13.1 |
| Italy | 13.8 | 13.7 | 13.3 | 13.5 | 15.3 | 15.3 | 15.2 |
| Latvia | 14.7 | 14.2 | 13.7 | 14.2 | 14.3 | 14.4 | 14.5 |
| Lithuania | 15.0 | 14.3 | 13.6 | 14.0 | 14.2 | 14.4 | 14.5 |
| Luxembourg | 16.0 | 15.2 | 14.1 | 14.2 | 13.9 | 13.5 | 13.1 |
| Malta | 16.2 | 15.0 | 13.9 | 13.8 | 13.5 | 13.6 | 13.9 |
| Netherlands | 14.5 | 14.9 | 14.3 | 14.5 | 14.1 | 13.9 | 13.7 |
| Poland | 15.0 | 14.6 | 14.2 | 14.1 | 14.1 | 14.0 | 14.0 |
| Portugal | 14.3 | 14.3 | 14.0 | 14.2 | 14.4 | 14.4 | 14.4 |
| Romania | 9.2 | 12.8 | 16.4 | 15.4 | 15.4 | 15.4 | 15.4 |
| Slovakia | 15.4 | 14.5 | 13.6 | 13.0 | 13.4 | 14.0 | 16.1 |
| Slovenia | 16.6 | 15.5 | 14.4 | 14.3 | 13.7 | 13.1 | 12.4 |
| Spain | 14.0 | 14.3 | 14.0 | 14.1 | 14.7 | 14.6 | 14.4 |
| Sweden | 16.0 | 15.2 | 14.1 | 14.3 | 13.9 | 13.5 | 13.1 |
| United Kingdom | 13.8 | 14.8 | 14.4 | 14.5 | 14.3 | 14.2 | 14.0 |
| **EU-27** | **14.0** | **14.2** | **14.1** | **14.1** | **14.6** | **14.5** | **14.5** |
| *Standard deviation* | *1.8* | *0.8* | *0.9* | *0.6* | *0.7* | *0.8* | *1.1* |
| *Mean* | *14.5* | *14.5* | *14.1* | *14.1* | *14.3* | *14.3* | *14.2* |
| *Mean + standard deviation* | *16.3* | *15.3* | *14.9* | *14.7* | *15.1* | *15.1* | *15.3* |
| *Mean – standard deviation* | *12.7* | *13.6* | *13.2* | *13.5* | *13.6* | *13.4* | *13.1* |

beneath the variation range above the variation range

*Source: Own elaboration based on data from C(2007)2274.*

**EGZEMPLARZ BEZPŁATNY**

*Nakład 250 egz., ark. wyd. 8,37*
*Druk i oprawa: EXPOL Włocławek*