Future and Past Effects of the Common Agricultural Policy in Czech Republic[1]

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„What was expected, what we observed,

the lessons learned."

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ABSTRACT

The paper discusses the impact of the implementation of the EU Common Agricultural Policy on Czech agriculture with a special emphasis given to the effects resulting from the application of current direct payments system. Two approaches were applied: in an ex post analysis we address how accession have so far influenced structural changes income situation and production structure. Secondly, in an ex-ante analysis we apply the agent-based model AgriPoliS to simulate the impacts of decoupling top-ups on structural change and farm income. In the ex post analysis it has been observed that production decisions are strongly influenced by top-ups. Furthermore, the model shows that accession slows down structural change while decoupling of top-ups in 2009 will not lead to significant changes in farm restructuring nor income situation.

Keywords: Structural change, Czech Republic, decoupling, agent-based modelling, Common Agricultural Policy.

Formázott: Felsorolás és számozás

2 INTRODUCTION

Beside transition, there is a new force influencing agriculture in EU-12 countries. In the accession process to the EU, trade of agricultural goods was stepwise liberalized since 2000[2] between the EU-12 and the EU. Hence, agriculture in the EU-12 has been progressively confronted to European Common Agricultural Policy (CAP). In this paper, we focus on the effects of the accession of EU-12 and the implementation of the CAP in the case of Czech Republic. Following the changes in farm structure during transition, we carry out an ex post analysis based on historical data until 2006, and observe how accession affected structural change and farm income. In a second step we conduct ex ante analysis based on simulations about the possible effects of decoupling in the case study region Vysočina in Czech Republic.

In 2004 all EU 10 countries except Malta and Slovenia opted in the frame of CAP for the Single Area Payment Scheme (SAPS), with a uniform and decoupled area payment[3] and top-ups. Contrary to SAPS, top-ups are fully coupled to production. The Czech Republic (CZ) decided to introduce top-ups for cereals, oilseeds, protein plants (COP), ruminants, flax, hop and starch potatoes. As there is evidence that the implementation of top-ups had an effect on the production structure, an important goal of the ex ante part of the analysis is to show the impacts of decoupling the top-ups. Therefore we use the model AgriPoliS (Agricultural Policy Simulator), developed by HAPPE et al. 2006. The agent-based approach allows us to model the current CAP in a very precise manner. We can introduce a farm specific decoupling scheme, where payments per ha differ among farmers depending on a reference period. Furthermore, we can redistribute payments on the whole land to mimic a single area payment scheme. Moreover, it is possible to reproduce the hybrid dynamic decoupling scheme, chosen by some EU-countries like Denmark, England, Germany and Finland. Here, we want to focus on the development of the number of farms, the income and the possible redistribution of payments due to decoupling in 2009.

The paper is structured as follows. In section 2 we give a short description of AgriPoliS that is used for the ex ante analysis. The data we used are briefly described in section 3. Section 4 describes the policy scenarios, which are simulated with AgriPoliS. The results from the ex

[2] Double-zero-agreement in 2000, double-profit-agreement in 2003, FISCHLER 2002

[3] In the following we refer to them as “SAPS payments”

post and the ex ante analysis are shown in section 5. The paper ends with conclusions in section 6.

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3 METHODOLOGICAL APPROACH AND KEY ASSUMPTIONS

As stated above, one important goal of this paper is to provide a projection of CAP effects in a selected region in CZ. As a framework for this projection, the model AgriPoliS is used. AgriPoliS is a spatial and dynamic agent-based simulation model of structural change in agriculture. For details about the model, we refer the reader to KELLERMANN et al. 2007 and HAPPE et al. 2006. The main purpose of the model is to understand how farm structures change in rural areas, particular in response to different policies. For this purpose, AgriPoliS maps the key components of regional agricultural structures: heterogeneous farm enterprises and households, space, markets for products and production factors. These are embedded in a technical and political environment. For the base period the model is calibrated to the empirical data of the study region.

The main entities are the farm agents and the landscape the farms are embedded in. The internal state of a farm is organized as a balance sheet, which keeps track of factor endowments (land, labor, capital and quota), farm's age, and expectations about future prices, along with a number of financial indicators. The landscape is constituted by cells of equal size of different qualities (arable land, grass land, non agricultural land), whereas some of the plots serve as farmsteads for the spatially distributed farms.

Farms act autonomously in order to maximize their household income. Farms' actions are derived from a mathematical programming approach. Farm agents can engage in production activities, labour allocation, rental activities for land, production quotas, and manure disposal rights. To finance farm activities, farm agents can take on long-term and/or short-term credit. Liquid assets not used on the farm can bear interest at the bank. Simultaneously to the production, farms select out of a set of investment alternatives. For investments, scale effects are considered. Furthermore we assume investment costs to be sunk. A farm exits either if its equity capital is zero, the farm is illiquid, or if opportunity costs of farm-owned production factors are not covered.

Interactions between farms are defined via markets for factor inputs and products. For products, capital and labour, prices are determined via an exogenous price function. The land market, which has a central position in the model, is modeled as an auction where the farms directly compete for free land plots.

To get an idea about what drives the simulation results, we give a brief overview about some main assumptions. A detailed description can be found in SAHRBACHER et al. 2007.

Generation change: We assume that individual farms are handed over to the next generation every 25 years. If a farm is handed over to the next generation, the opportunity costs for the successor's labour force are assumed to be 25 % higher. In this way, a potential successor's choice to work off farm or on the farm is reflected. If the successor decides to stay in agriculture, then opportunity costs are set back to the level anterior to the generation change.

Opportunity costs of farm family labour: We assume that it is mostly the younger better educated farm family members who are able to work off-farm. Considering that one farming generation is 25 years, opportunity costs of older farm-family members are at 50% of the original level (10-20 years after taking over the farm) or zero (20-25 years after taking over the farm), respectively, reflecting their (in)ability to find off-farm jobs.

Land rental contracts: Land rental contracts run for a fixed period of time, which we set between 5 and 18 years. Whenever a rental contract terminates, the land is released to the land market and free for rent by other farms.

Heterogeneity of farms: Like in reality, farms are differentiated in the way that their managers possess different managerial abilities which cause differences in economic performance. Thus, we assume 10 % variation of production costs between farms.

Output prices: Farms are assumed to be price takers. For decoupling scenarios SAP2009 and BOND2009 we consider output price changes. These are taken from simulations with ESIM for the corresponding scenarios (see BALKHAUSEN and BANSE 2007). Accordingly the price increase for beef in the SAP2009 scenario is 5 %. In the scenario BOND2009 prices for beef increase by 9 % and those for rape seed by 3 %.

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4 DATA

The ex post analysis is based on various statistical data sources for whole Czech Republic, namely AgroCenzus 2000, Structural survey 2003 and 2005. Additionally, data about sown areas, livestock numbers and gross production presented by Czech Statistical Office along with data from "The Economic Account for Agriculture" were used. Whereas, the ex ante analysis is based on simulations of the development of the case study region Vysočina. The agricultural structure of Vysočina in 2001 is thereby virtually represented by weighting selected individual farms to cover regional characteristics, like number of farms with a specific specialisation, number of farms in different size classes, number of animals in different size classes etc. Therefore individual farms are derived from FADN data. Then, production structure and behaviour of the selected farms is represented with a mixed integer programming model, as described in section 3.

As the FADN sample for Vysočina only includes few farms smaller than 10 ha, we could not consider them in the virtual region. Thus, from 3,443 farms bigger than 1 ha we consider only 1,872 in the virtual region. The utilized agricultural area is respectively reduced from 393,726 to 385,713 ha. A detailed description about the virtual representation of a region can be found in KELLERMANN et al. 2007. Further information about the input data can be found in SAHRBACHER et al. 2005. JELINEK et al. 2007 includes a section with further simulation results[4]. The latter two publications contain also a detailed description of the region.

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5 POLICY SCENARIOS

For the analysis with AgriPoliS, we implemented four different policy scenarios for which we simulated the structural changes from 2001 to 2013. Until 2004 we consider the policy applied before the EU-accession. In 2004, we implemented in three of these four scenarios the accession policy, whereas in the fourth scenario, the PRE-ACCESSION policy is continued. This allows us to analyse the effects of accession. The second scenario called ACCESSION reflects the actual implemented policy with SAPS and coupled top-ups and continues also till 2013. In the third (SAP2009) and fourth (BOND2009) scenario payments are decoupled in different ways in 2009. In the following, the analysed scenarios are described in more details.

PRE-ACCESSION: As the payments before accession differ slightly in 2002 and 2003, we calculated the average of both years. The payment for arable land is only paid if farms set aside at least 5 % of their arable land. For set aside farmers receive in average in the years

[4] The model specification, calibration and data collection as well as further analysis have been done within the EU-project IDEMA.

before accession 179 Euro/ha. However, they can set aside maximum 10 % of their arable land. For grassland we take into account the payments for less favourite areas (LFA). For dairy cows farmers received a compensatory payment for milk quota which amounts in the years before accession in average for 24 Euro per dairy cow. Thereby, we assumed an annual milk yield of 6,175 kg per year.

Table 1: Pre-accession payments (average coupled premiums of 2002 and 2003)

Production activity:	**Ø – Premium (€/ha)**
Arable land	10
Set-aside	179
Grassland LFA	65
Dairy cows	24

Note: The payment for dairy cows is the compensatory payment for milk quota in 2002 3.24 Cent/l and in 2003 4.4 Cent/l.
Source: MOA 2001-2004 and own calculations.

ACCESSION: In 2004 the pre-accession policy is replaced by the SAPS and coupled top-ups for ruminants, COPs, flax, hop and starch potatoes. Additionally, a coupled agri-environmental payment of 110 Euro/ha for grassland is introduced. In the SAPS, a unique per hectare payment for all utilized agricultural area is distributed, whereas land has to be kept in good agricultural and environmental condition (GAEC).

Table 2: Payments in the scenario ACCESSION

	Unit	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
SAPS	€/ha	57	70	85	98	122	146	171	195	220	244
Top-ups (EA)	€/ha	46	80	82	80	80	80	73	49	24	0
Ruminants	€/LU	69	69	91	91	91	65	37	24	13	0
Agri-env. payment	€/ha	110	110	110	110	110	110	110	110	110	110

Note: EA = eligible area of COP, flax, hop and starch potatoes.
Source: payments for 2004 to 2006 are from MOA 2005, SBÍRKA ZÁKONŮ (2006), SAPS payments after 2006 are calculated based on the phasing in rates, top-ups for arable land and ruminants are kept on the same level than in 2006 till they have to be reduced, when they reach in our simulations together with the SAPS payments the target level of 2013. The payments are based on model calculations and can differ from the real development.

SAPS payments are phased in stepwise, what can be seen in Table 2. They start in 2004 at 25 % of their final level in 2013. In the following years, they increase to 30, 35, 40, 50, 60, 70, 80 and 90 % of the full 2013 amount. After 2009, top-ups are reduced, because the total payment consisting of SAPS payments and top-ups reach the target level of payments granted in 2013. Hence, this scenario ends in 2013 automatically in a decoupled single area payment (SAP).

SAP2009: Until 2008 the ACCESSION policy is applied. In 2009, top-ups and SAPS payments are transfered into one SAP for arable and grassland. There is no further increase in the SAP, because SAPS and top-ups reach in our simulations already before decoupling in 2009 the target level of 2013. This scenario leads to an abrupt reallocation of payments among farmers. This reallocation appears also in the ACCESSION scenario, however smoother, because of the stepwise reduction of the top-ups until 2013. The agri-environmental payment for grassland remains coupled.

Table 3: Payments in the scenario SAP2009

	Unit	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
SAPS, SAP	€/ha	57	70	85	98	122	244	244	244	244	244
Top-ups (EA)	€/ha	46	80	82	80	80	0	0	0	0	0
Ruminants	€/LU	69	69	91	91	91	0	0	0	0	0
Agri-env. payment	€/ha	110	110	110	110	110	110	110	110	110	110

Source: see Table 3, the SAP introduced in 2009 is equal to the level of SAPS payments that should be reached in 2013.

BOND2009: In 2009 all payments are fully decoupled. SAPS payments and top-ups are completely decoupled from land and production and paid as a personalised payment to the farm operator. We do not impose any restriction on the use of the payments (cross compliance is not required). Hence, farmers can take the payment and leave agriculture altogether. This is an extreme scenario, but it gives an idea of what could happen if payments are decoupled from land. 2008 was used as a reference period from which payments have been calculated. Again, the agri-environmental payment will not be decoupled as shown in Table 4.

Table 4: Payments in the scenario BOND2009

	Unit	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
SAPS	€/ha	57	70	85	98	122	Bond	Bond	Bond	Bond	Bond
Top-ups (EA)	€/ha	46	80	82	80	80	Bond	Bond	Bond	Bond	Bond
Ruminants	€/LU	69	69	91	91	91	Bond	Bond	Bond	Bond	Bond
Agri-env. payment	€/ha	110	110	110	110	110	110	110	110	110	110

Source: see Table 3.

6 RESULTS

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As already mentioned, we conduct in this paper an ex post and ex ante analysis. In the ex ante analysis, we focus on the impacts of accession on structural change and farm income. The focus of the ex ante analysis of the decoupling effects is also put on these issues and additionally on the allocation of payments.

6.1 Ex post analysis

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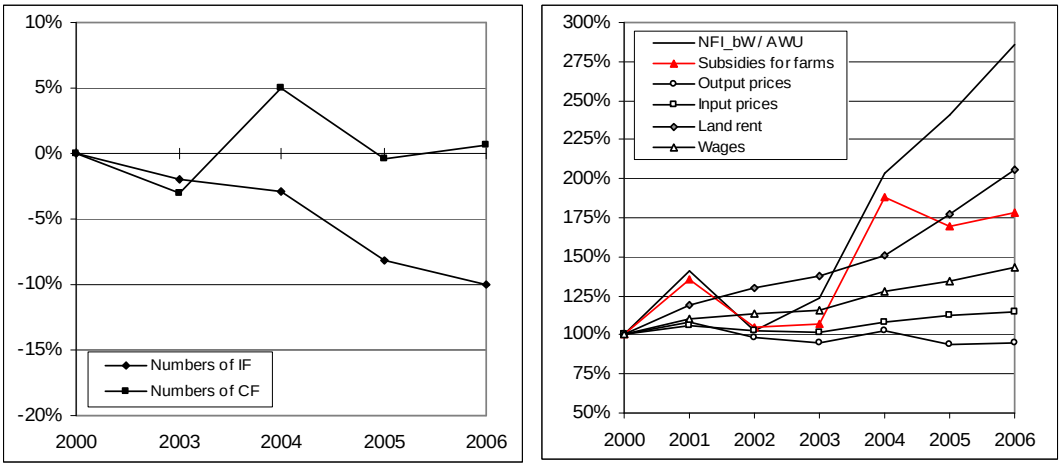
Structural change: Current Czech agriculture is still affected by transformation which created a dual farm structure. In 2006, 4 % of the largest farms out of 44 thousand farms utilized nearly 75 % of the total agricultural land . On the other hand, the share of farms with less than 10 ha amounts to 66 %, but they only use 2 % of the total agricultural land. Even if we consider the dualistic farm structure and observe the development of corporate (CF) and individual farms (IF) separately like in Figure 1 a), a significant impact of accession can hardly be observed. Between 2000 and 2006 the number of (IF) has annually decreased by 1.7 % (see Figure 1 a) [5]. Some IF have been converted to limited liability companies (LTD) with their growth, whereas others quitted the sector. At the same time, the share of agricultural land utilized by IF has annually increased by 1.2 %. Thus the average size of IF has increased from 39 ha in 2000 up to 46 ha in 2006. Accession to the EU caused no change in the decrease in the number of IF. In contrast to IF, the number of CF has remained stable. From

[5] From 2004 to 2005 the number of farms decreased by 5 %, because the Czech government introduced the minimum tax base for non-corporate enterprises – meaning individuals had to pay a minimum tax threshold regardless if they operated at a profit or loss.

2003 to 2004 it has even increased a bit, because CF are undergoing a restructuring process. They are split into smaller units and are converting their legal form from cooperatives into business companies – joint stock companies (JSC) or LTD[6] (Doucha & Divila, 2001).

Figure 1: a) Relative change in number of IF and CF and b) Development of subsidies, farm income, output and factor prices

a) **b)**



Source: a) CZSU (2007).
b) MoA 2000-2006.

Changes in income situation: Figure 1 b) shows beside other indicators the development of net farm income per AWU[7] (NFI/AWU) and the development of subsidies between 2000 and 2006. It seems that the development of NFI/AWU is correlated with the development of subsidies. One can observe that subsidies increased by 80 % with accession to EU in 2004. In 2004, the NFI/AWU is followed this development. However, there was a cut in 2005. Subsidies increased again by 38 %, whereas the NFI/AWU declined. This decline can be explained by the decline in output prices. Furthermore, one can observe that the NFI/AWU followed the increase in output prices in 2006. But what happened to the increasing subsidies? One can see that they are partially transfered to the wages for hired labour, land and other input factors. Costs for these factors constantly increased. Thus, one can conclude that the accession to EU had a positive effect on farm incomes. However, these simple comparison show that subsidies are rather quick capitalized in other production factors like land and current assets. It is questionable, whether output prices are shrinking because of subsidies or if their decline only depends on changes in demand and supply. But the increase in input prices does not completely explain the big gap between NFI/AWU and subsidies. It could also be possible that subsidies are used to pay back loans or to finance investments. The latter is particularly relevant with respect to the requirement consisting in fulfilling the agri-environmental regulations (GAEC) which came into force after the accession.

Changes in production structure: The structure of the cultivated area has been gradually adjusting to the demand on the one hand and responding to the policy incentives on the other. It can be seen in Figure 2 that total utilized arable land has constantly decreased. Partially, the

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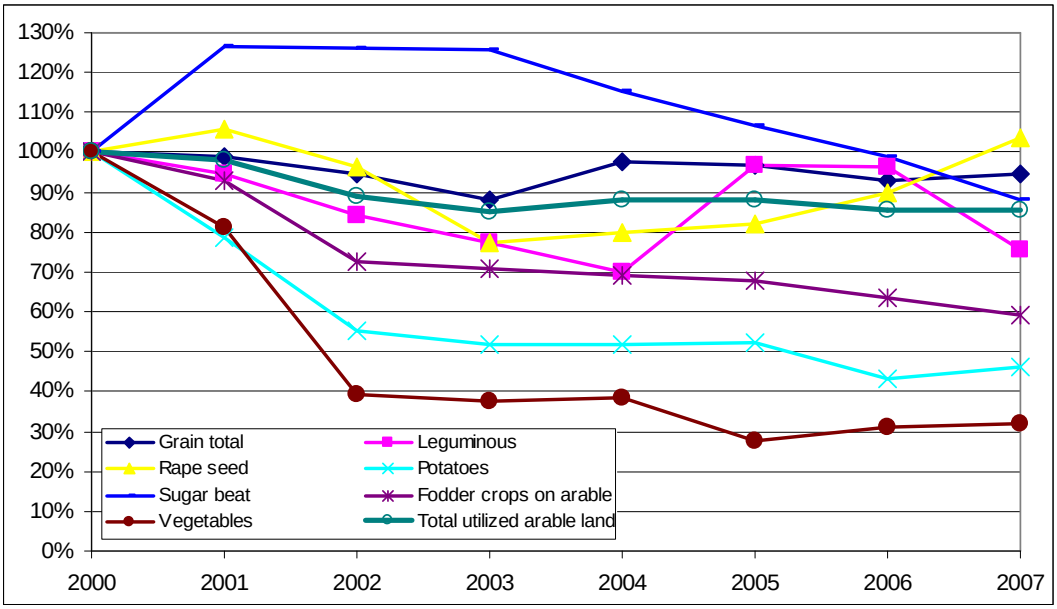
[6] The main driving forces behind this process are i) the obligation of cooperatives, since 1999, to come to an agreement about the transformation shares of non-members (to avoid the settlement), and ii) finding better condition for the concentration of economic power into fewer managerial hands.

[7] AWU = Annual Working Unit, is equal to 2,000 working hours

decrease stopped in 2004. It can contributed to the fact that in 2004, contrary to the years following, top-ups on arable land were provided for all arable crops. Furthermore, it can be observed that sown areas of grain, leguminous and rape-seed (all granted with top-ups) either increase or stop to decrease[8]. Consequently, while since 2000 the share of cereals on arable land was some 52 % it has gone up to more than 60 % in 2007. Sown area of potatoes, sugar beet, fodder crops on arable land and vegetables (only eligible for SAPS) are on decline. Additionally, sugar beet production has been affected by the closing down of three sugar refineries which kept around 25 % of sugar quota. Notably, the set-aside area has dropped from the initial 71 ths. ha in 2000 to some 30 ths. ha in 2007. Total arable land is declining, as it is converted into grassland or even non-agricultural land

Figure 2: Development of selected commodities (sown areas, %)



Source: CZSO (2007)

The decline in livestock production has been even stronger than that in crop production. Since 2003 animal categories that are not supported - pigs and poultry dropped by 16 % and 9 %, respectively. Ruminants, supported by top-ups, recorded mixed development. Number of dairy cows are continuously declining. Contrary, number of sucker cows and sheep have grown up (the former by 20 %, the later by 64 %) from 2003 to 2007, CZSO (2007).

6.2 Ex ante analysis

Structural change: In the previous section, we described the historical development of farm structures in the reform period until recently and its consequences including tremendous changes. With the past development in mind, we want to show in this section a projection for Vysočina under the above described policy scenarios. Undoubtedly, structural dynamics develop at a different intensity according to the analyzed policy options (see Figure 3). Obviously there is no difference in the development of the number of farms in the first three periods since the policy is the same for all scenarios during this time. In 2004 accession takes

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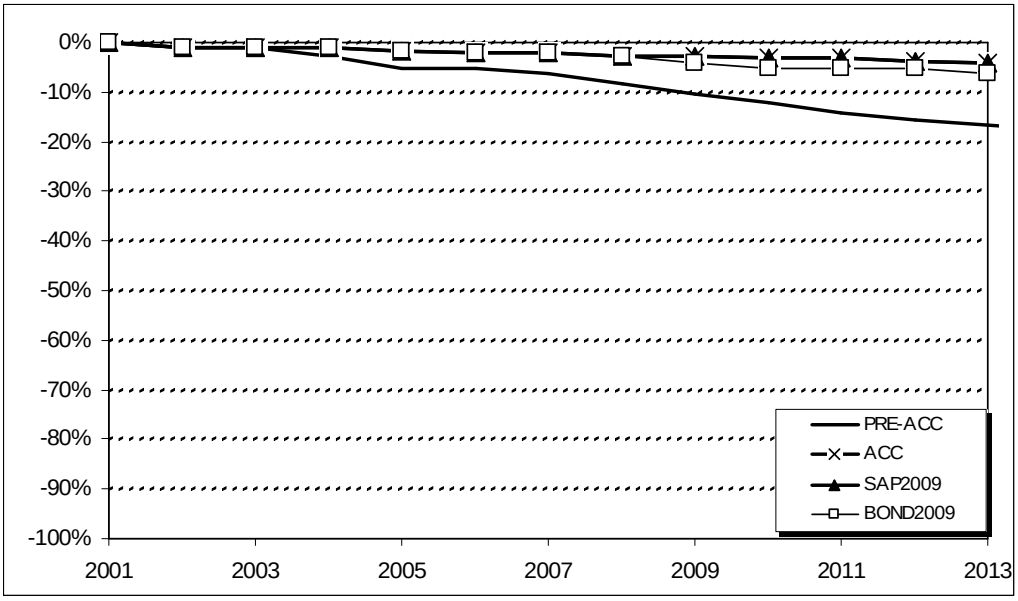
[8] In the case of grains, intervention purchases also provided a long-term safety net and stabilised market substantially.

place and in comparison with the continuation of the PRE-ACCESSION scenario, one can observe a slow down of structural change due to the increase of payments. Direct Payments increase in the model from 2003 to 2004 from in average 38 Euro/ha to 147 Euro/ha. Until the end of the phasing of the SAPS payments in 2009 they grow in average up to 266 Euro/ha. Thus the structural change is much slower in the accession scenarios, though the payments in this PRE-ACCESSION scenario have been fully coupled. In all four scenarios the projections show a relative decline in the number of farms with the sharpest drop of 18 % till 2013 in the PRE-ACCESSION scenario. The annual average decline is around 1.5 %. A modest decline in number of farms of annually 0.3 % was predicted in the scenarios ACCESSION and SAP2009. That means decoupling would not lead to a different structural change. It seems that the decoupling effects are overlaid by the strong increase in payments due to accession. In the scenario BOND2009 one can observe a slightly stronger decline in the number of farms (annual decrease by 0.5 %), because it is assumed that land is no longer required to be cultivated and farmers have the opportunity to leave the sector without their eligibility to get payments being cut.

Figure 3: Relative change in number of farms

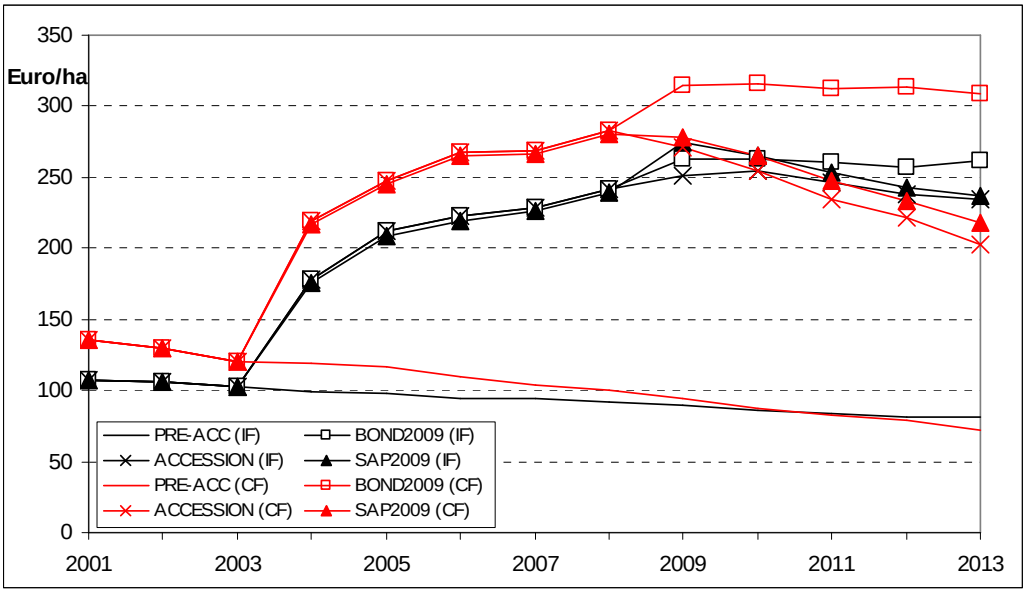


Source: own calculations

Changes in income situation: In Figure 4 we show, as an indicator for the income development of individual and corporate farms, the average profit per hectare minus labour costs for family labour to ensure the comparability between individual and corporate farms. AgriPoliS results show that the income situation in the study region tends to improve due to accession to EU. However, there are differences in the increase in income. If the PRE-ACCESSION policy had been in place the projected profit declined at a constant rate, because of the decline in livestock production. The strongest increase in income occurs immediately after accession. Decoupling of top-ups towards a SAP in 2009 will not lead to big changes in average income compared to the ACCESSION, because the total amount of subsidies does not change. Yet, income declines in these two scenarios from 2009, contrary to a constant development in the scenario BOND2009. The reason is that payments reach their peak in 2009 and the process of capitalization continues in the scenarios ACCESSION and SAP2009.

Results of the scenario BOND2009 indicate that the link between payments and land is cut and the payments are no longer capitalized into higher rental prices.

Figure 4: Profit per ha of utilised agricultural land for individual (IF) and corporate farms (CF)



Source: own calculations

When we look at the profitability of individual and corporate farms, we can observe several differences. First, corporate farms achieve a higher profit per hectare than individual farms. On the one hand this can be explained by the fact that they realise economies of scale. The average farm size of corporate farms is in AgriPoliS in 2001 1,055 ha, whereas the average size of individual farms is 47 ha. On the other hand, livestock density on corporate farms is higher than on individual farms and thus they achieve a higher profit per hectare. However, in PRE-ACCESSION, the difference in income between individual and corporate farms diminishes with the decline in livestock production and the increasing size of individual farms.

Second, after 2009, profits of individual farms does not decline at the same rate than profits of corporate farms in the scenarios ACCESSION and SAP2009. As already mentioned, profits decline due to capitalization of payments. For corporate farms this effect is much stronger, because they own in average only 1 % of the land they cultivate. Individual farms can keep a bigger share of the payments, because they own in average in 2001 31 % of the land which they cultivate. However this share declines till 2013 to 25 %[9].

Beside the effects on the average income, one expect changes in incomes among farmers due to decoupling of payments in 2009. Till 2009 in the ACCESSION scenario, the level of top-ups is more or less constant (see Table 2). After 2009, they are reduced to the same extent than SAPS payments increase. Thus, there is a stepwise redistribution of top-ups. Mainly top-ups for ruminants move to grassland and arable land which did not received top-ups before. In the scenario SAP2009, this redistribution takes place in one step in 2009 (see Table 3). Contrary to this there is no redistribution of payments in the BOND2009 scenario. After

[9] This is due to the fact that farms can increase there acreage only in the model only by renting land.

decoupling towards a bond scheme farms receive the same amount of payments than in 2008, independent if they produce anything or quit agriculture. In Table 5 we show the average payments per hectare for different farm types. The redistribution of payments is difficult to grasp, because the total amount of payments increases in a last step from 2008 to 2009. Thus one can observe in the ACCESSION scenario an increase of 24 Euro/ha for pig and poultry farms and of 12 Euro/ha of field crop farms. Both farm types gain due to the increase of the SAPS payments from 122 to 146 Euro/ha, whereas the top-ups for COPs stay constant at 80 Euro/ha. In 2010 there is a further strong increase in the payments for pig and poultry and field crop farms. After 2010 the payments for these farm types stay more or less constant. At the same time we can observe a reduction of the payments for mixed farms with ruminants by 4 Euro per hectare. These payments are going on arable land where no COPs were cultivated and thus the farmers did not received the top-ups. Till 2013 all top-ups for ruminants are redistributed to the land. Thus payments per hectare for mixed farms are further declining, however very smoothly. In total, mixed farms would loose only 6 Euro/ha. The redistribution of payments would be almost the same, if top-ups would be decoupled towards a SAP. However it would happen in one year.

Table 5: Payments per hectare by different farm types (in Euro/ha)

	ACCESSION			SAP2009			BOND2009		
year	pig/poultry	field crop	mixed	pig/poultry	field crop	mixed	pig/poultry	field crop	mixed
2008	198	237	272	198	237	272	198	237	272
2009	222	249	277	244	255	269	203	217	280
2010	240	259	273	244	259	269	203	224	281
2011	242	259	272	244	259	269	203	223	281
2012	243	259	273	244	260	270	203	230	283
2013	244	259	271	244	259	270	203	229	284

Source: own calculations

In the scenario BOND2009 payments are decoupled like in a single farm payment scheme, except they are also decoupled from land managing. We also considered the final increase of total payments from 2008 to 2009, which is 2.4 % instead of 10 % by which SAPS payments increase. This is because in 2009, SAPS payments and top-ups reach together the total amount of payments granted in 2013 and top-ups for ruminants are already reduced (see Table 2). In Table 5, the increase in payments is visible for pig and poultry and mixed farms. Whereas, payments for field crop farms decreases in average, because in the BOND2009 scenario, farms which receive the highest payments/ha leave the sector and their payments with them.

The low rate of payment redistribution in the scenarios ACCESSION and SAP2009 among farmers might be surprising. However it can easily be explained by the fact that payments for ruminants are transfered to arable land where no COPs are produced, and to grassland. As grassland is mainly owned by mixed farms, which keep ruminants, there is only a redistribution within the farms and less payments are going to other farm types. However, a single farm payment, which is here represented by the scenario BOND2009 would lead to a more unequal distribution of payments among farms. Such an unequal distribution of payments might be put into question, because the requirements to receive the payments are the same for all farms after decoupling. They have to keep the land in GAEC and it is no longer necessary to keep ruminants.

7 CONCLUSIONS

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The goal of this paper was to show in an ex post analysis exemplary in the case of Czech Republic the impacts of accession on structural change, income development and changes in production structure. Furthermore, we conducted an ex ante analysis with the agent-based model AgriPoliS on how the upcoming decoupling of top-ups would affect structural change, farm income and the allocation of payments. In this analysis decoupling takes place in 2009. Nevertheless, that actually decoupling is planned to be postponed until 2011, this analysis can give us more insight in future changes.

The ex post analysis showed that the development in number of farms in EU-12 countries is influenced by different factors. Thus, and because of the short time period since accession, it was not possible to identify impacts of the accession on the development in the number of farms based on empirical data. However, model results confirm the expectation that strongly increasing subsidies slow down structural change. This would be in contradiction to the empirical findings, but we do not know how the development would have been in the reality in the case of a non accession. And furthermore we do not consider all factors which influence structural change in reality.

Concerning the income development, we can approve the model results with the empirical findings about the changes due to accession. Both analysis showed that the accession leads to an increase in agricultural income. Thus one can assume that the results of the ex ante analysis are reliable and impacts of further decoupling might be estimated in the right way. Even if, the model results are based on only one region and the development of the payments might slightly differ in reality.

Thus we can conclude that in contrast to EU-15 countries, decoupling does not affect structural change in EU-12 countries strongly, because it is overlaid by accession effects. In EU-12 countries, the strong increase in payments and the relatively low share of coupled top-ups buffers possible changes in the development in the number of farms.

As the total level of payments in EU-12 countries will not change due to decoupling, the more interesting question is how will be the allocation of payments among farmers change depending on the way of decoupling. Here, the simulations show that the continuation of the accession policy would lead anyway to a decoupled policy in 2013, which does not differ from decoupling to a SAP in 2009. Furthermore, the reallocation of payments among farmers is negligible in these two scenarios. The main difference between these two scenarios is how fast it will be done. In contrast to this, the scenario BOND2009 can show exemplarily the effects of farm specific decoupling. There the distribution of payments among farmers might be more unequal, because farmers receive their payments on the historical production and not based on the value they produce for the community. They would receive more payments by fulfilling the same requirements (keeping land in GAEC) than other farmers.

REFERENCES

BALKHAUSEN, O. and BANSE, M. (2007): The Impact of Decoupling and Modulation in the Enlarged Union: A Sectoral and Farm Level Assessment. Deliverable 18, IDEMA Project, Göttingen (Germany).

CZSO (2007); Development in livestock 1980 - 2007, Prague, available at http://www.czso.cz/csu/2007edicniplan.nsf/p/2103-07

CZSU (2007): Agrocenzsus 2000 and Structural surveys 2003 and 2005. [online] URL: http://www.czso.cz/csu/edicniplan.nsf/aktual/ep-2#21 [Last access 19.06.2007].

DOUCHA, T. AND DIVILA, E. (2001): The transformation and Restructuring in Czech Agriculture – After Ten Years. In: The New Structure of the Rural Economy of Post-Communist Countries, Hokkaido University, Japan, Sapporo.

FISCHLER, F. (2002): EU Accession of the Czech Republic - Challenges for Agriculture and Rural Areas, Speech on 07.11.2002, http://www.evropska-unie.cz/eng/speech.asp?id=1676 [Last access 22.06.2007].

HAPPE, K., KELLERMANN, K., BALMANN, A. (2006): Agent-based Analysis of Agricul tural Policies: an Illustration of the Agricultural Policy Simulator AgriPoliS, its Adaptation and Behavior; Ecology and Society 11 (1): 49. [online] URL: http://www.ecologyandsociety.org/vol11/iss1/art49/.

JELINEK, L., SAHRBACHER, C., MEDONOS, T., KELLERMANN, K., BRADY, M., BALKHAUSEN, O., (2007): Effects of the CAP direct payments on Czech agriculture, Deliverable 27, IDEMA Project, Research Institute of Agricutlural Economics, Prague (Czech Republic).

KELLERMANN, K.; HAPPE, K.; SAHRBACHER, C.; BRADY, M. (2007): AgriPoliS 2.0 - Documentation of the extended model. Deliverable 20, IDEMA Project, Halle (Germany).

MOA (several volumes): Report on the State of Agriculture in 2000 – 2006 (Green Report), Ministry of Agriculture, Prague

SAHRBACHER, C., SCHNICKE, H., KELLERMANN, K., HAPPE, K., BRADY, M. (2007): Impacts of decoupling policies in selected regions of Europe. Deliverable 23, IDEMA Project, IAMO, Halle (Saale), Germany.

SBÍRKA ZÁKONŮ (2006): Nařízení vlády č. 141 – 144/2006 Sb. o podmínkách poskytování národních doplňkových plateb a jednotné platby na plochu (Government regulations laying down the conditions for providing complementary national direct payments and single area payment scheme).