An assessment of the impact of possible CAP reform scenarios on Romanian agriculture

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Abstract— **Using a simplified model, with key-variable the prices of two different possible scenarios of CAP reform after 2013 (moderate and radical), this paper present a comparison between the price effects of implementation of each reform scenario at 2015 horizon on Romanian agriculture. This short analysis shows that, under the presented hypotheses, the net welfare effect, due to the price changes, for the selected products, is positive in both reform scenarios, yet greater in the case of the radical reform. Integrated in the large context of Romanian development, it seems that the influence of CAP reform upon agriculture and rural areas will be most likely a gradual one: an interpenetration between the two scenarios is foreseeable, starting with the moderate reform that will dominate the period around 2013, the reform measures acquiring a more radical character afterwards.**

Keywords— **CAP reform, Romania, welfare effects**

I. INTRODUCTION

Romania has 14.7 million hectares agricultural land, in this respect being one of the European countries with the best resources for agriculture. The economic importance of the agricultural sector decreased in the last years. The share of Gross Value Added in GDP reached 8.5% in the year 2005, significantly down from that in the early transition years (1990-1996), when it had reached even 18%-21%. At the same time, the share of the population employed in agriculture in total employed population remained quite high (32% in the year 2005), but it also decreased from over 40% in the period 1999-2001. In absolute values, 2939 thousand people were working in agriculture in the year 2005. Out of these, 18.5% were over 55 years old, agriculture being the economic sector with the oldest labour force.

The structure of cultivated areas reveals the prevalence of cereals in the crop mix, which accounted for 69% of the cultivated area in the year 2005. The harvests that are obtained are modest and highly unreliable, due to the weather excesses (drought or floods) and to the non-application of adequate production technologies on large areas. The 2000-2005 average yield were 2.5 tons/ha for wheat and 3.2 tons/ha for maize.

The agrarian structure is extremely polarized, 55% of the cultivated area belongs to a huge number of individual peasant household farms (4.2 million individual holdings with an average size of 2.2 hectares), while the remaining 45% of the cultivated area is operated by the legal person agricultural units, which totalled 22 thousand in 2002, with an average size of 274 ha.

Food consumption continues to have quite a high share in the household consumption expenses, revealing the vulnerability of all households, and mainly of the urban households, to the agricultural prices on the domestic and world agricultural markets. In fact, the rural households feature a higher level of food consumption coverage, in quantitative terms, compared to the urban households, although their incomes are generally significantly lower. This is obviously due to the consumption of products produced on their own households. On the average, in the year 2006, the food consumption expenses accounted for 45.4% of total consumption expenses; this share is among the highest shares in an EU member country. In rural areas, this share is even higher, yet it significantly decreased in the last five years: from 67.1% in 2001 to 54.7% in 2006. The main food consumption source for the rural households is represented by the agricultural production obtained on the household. Yet, the share of self-consumption decreased in the last five years, from 62% in 2001 to 50.3% in 2006.

For Romania, the EU accession and CAP adoption represent an expectation of going beyond the fluctuations of agricultural policies generated by the electoral changes and the beginning of a period of economic consolidation of the agricultural sector based upon the stability of agricultural markets and the generous support provided both to agriculture and to the rural areas in general [1].

The themes of the internal debate on the agricultural policies and those of the European and international debate overlap only to a small extent. At internal level, the debate was dominated by solving up certain immediate/pressing problems, on the short-term, yet as an exception certain positions with regard to the future of rural area and agriculture were also expressed. At EU level, the debates on the agricultural policies focused upon the medium-term issues related to the improvement of policy implementation (health-check) and to the continuation of the reform adopted in the year 2003 (sugar, wine, fruit and vegetables market reform). The long-term perspective must be also considered, referring to the CAP future after 2013, under the pressure of the Doha Round within WTO and of reforming the EU general budget.

Different reports and positions of the EU Member States contributed to the visions on CAP future. From a long-term perspective, it is worth mentioning the British Vision of 2005 [2], and from medium-term perspective (focusing on implementation) the French Memorandum of 2006 [3]. The global tendency to reduce the trade barriers with regard to agricultural products is a factor that favours reforms [4], which is also valid for the EU, and the CAP Reform from 2003 has proved it. Yet, the EU tariff protection level is still considered high and out of this reason it determines a higher level of prices on the EU internal market compared to the world market prices, which is a source of world trade distortion.

The formulation of certain simplified scenarios of possible CAP reform provides the necessary benchmarks for a brief analysis of the effects upon consumers' and producers' welfare, as well as upon the rural area in general. The "current CAP" scenario presupposes the completion of the reform envisaged in 2003. The "moderate CAP reform" would imply the drastic diminution of market interventions, while in the "radical CAP reform" interventions would be eliminated and direct payments phased out.

More than 3 million out of the 4.2 million agricultural holdings have an economic size less than 1 ESU. This means that these farms (subsistence farms) are generally excluded from receiving direct payments, although they cover about one quarter of Romania's agricultural land. Direct payments for the large farms, some of them operating on thousands of hectares, cannot contribute to the objective of supporting farmers' incomes. Reform measures will bring in Romania's case a good operation of agricultural markets and the market orientation of farms, which will result in agricultural incomes based mainly upon the sale of agricultural products rather than upon subsidies or social allocations.

In Romania the number of farms that are to receive direct payments is about 1 230 000; these farms operate a total area of about 9.5 million hectares. As for the small farmers the direct payments have an obvious income support impact, mainly in the situation when many of these practise semi-subsistence farming, maintaining these payments can be important for keeping the agricultural land in good conditions from the environment point of view. Probably on the long term this will no longer be so important for the farmers specialized in different crops, who can gain more from the sale of production on the market, and also for the large agricultural producers, whose incomes should not be supported through direct payments.

II. ESTIMATING IMPACT OF CAP REFORM UPON PRODUCERS' AND CONSUMERS' WELFARE

The effects upon welfare (loss or gain) measured at producer and consumer level represent a usual modality to estimate the impact of implementing a certain agricultural policy. In order to quantify the effects of a future CAP reform (after 2013) upon Romania's agriculture, the impact of each of the two alternative scenarios – moderate reform and radical reform – was calculated in relation to the scenario of present CAP continuation after 2013.

The model used for the simulations is a simplified model, inspired by the model used in 1998-1999 for estimating the effects upon welfare resulting from CAP adoption by Romania [5], as a result of this country's accession to the EU.

A. Methodology, assumptions and data used

Analysing the effects of the complete or partial removal of supply control mechanisms should start from the specificity of the Romanian agricultural market. Although the European Union is Romania's main commercial partner in agro-food products, the price differentials between Romania and other EU member States shows the clear market segmentation phenomenon. Thus, for most agricultural products, the prices on the national market are different from those of other large EU agricultural markets.

The welfare effects are measured as positive or negative modifications of producers' and consumers' incomes, due to the modifications of agro-food prices in the period 2005-2015, expressed in 2005 constant prices. That is why, for each of the three scenarios, the prices of selected agricultural products are those synthetically defining the situation of the respective markets, both at the level of Romania, EU and the world market.

In order to define the "baseline situation", the following data were used: for the cultivated areas and average yield per hectare/animal head, the 2004-2005 average; for production utilization and foreign trade, the data from the year 2005, and for the producer prices in Romania were used the average for the period 2004-2005. Prices used in different scenarios were for the same period (2004-2005):

- for the "Current CAP" scenario, the average EU prices or the prices from the great producer countries were used (while implicitly assuming that the level of prices will be equalized at EU level);
- in the "Radically reformed CAP" case, the prices were those on the world market (or of some of the most competitive producers);
- and for the "Moderately reformed CAP" scenario some derived prices were used, at half distance between the CAP prices and the world prices (i.e. maintaining the protection at half of its level from the period 2004-2005 was considered).

For simplification, the prices were not adjusted by the transport expenses, in none of the three scenarios.

Under the present hypotheses, the producer and consumer welfare effects are largely due to the price differences between the "current CAP" scenario and the two reform scenarios. The "baseline" situation for prices (average 2004-2005 prices), the starting point for all three scenarios, can be synthesized as: among the lowest EU prices for wheat, higher maize prices compared to the large EU producers, very high prices for potatoes; extremely low prices for beef, yet higher prices for pork and poultry meat than the prices of the large EU producers.

Table 1 Prices of selected commodities (Euro/100 kg)

Commodity	Baseline	Current CAP	Moderate reform	Radical reform
Wheat	14	13	12.5	12
Maize	13	10	8	7.2
Potatoes	22	12	8.8	8
Beef	80	210	175	152
Pig meat	115	105	95	88
Poultry meat	85	72	66	60

The direct payments have not been taken into consideration, although their value may exceed the welfare effects generated by the modification of prices. The model was limited to the measurement of effects that price changes had. On the other hand, the direct payments introduced in 2007 compensated the national subsidies that had been in place until 2006 (the value of amounts was quite similar, even though the form of providing them was different).

In order to measure the effects of the two reform scenarios, on a comparative basis with the scenario of current CAP continuation, 3 crop products and 3 animal products were selected, which are important for Romania's agriculture: wheat, maize, potatoes, beef, pork and poultry meat. No other products were selected, although these are also important, out of the desire to maintain a simplified model.

Starting from the specific situation of these main markets, an evaluation of the effects of certain future reform measures in the period after 2013 is not easy at all. In order to provide a certain coherence to the comparison between the two reform scenarios (moderate and radical), we predicted that in the 2008-2013 period, Romania's agriculture would reach the stage of an almost full integration in the EU markets for each product and the comparison is made between the situation at that moment ("Current CAP" Scenario) and each of the two reform scenarios. The hypothesis that define each scenario are synthetically expressed by the price of the respective product.

Although the model simulates the production and consumption level in a 10-year period, the determining element of the analysis is represented by the prices of selected products, in each of the three scenarios; this results in a model with a rather static character, estimating the producer and consumer effects, without taking into consideration the modifications that took place between the beginning and the end of the investigated period. The implicit hypothesis is that the shift from one price level (that from the "baseline" period) to another (for each of the scenarios) takes place gradually. Another implicit hypothesis is that throughout this period of modification of agricultural products prices there is no modification of margins at the level of processors, i.e. any change at the producer level is transmitted to the consumer level, being influenced by elasticity.

Other hypotheses are related to the elasticity of demand and supply, to the yearly increase of productivity, different from one product to another, and to the increase of consumers' incomes (3% per year), as a result of the general economic growth of Romania's economy.

B. Main results

The presented results do not represent a forecast of the evolution of markets for the 6 selected products, but rather an estimation of the welfare effects within the strict limits of the presented hypothesis, in constant 2005 prices, assuming that there are no variations of the world market prices.

Taking into consideration the fact that with regard to a CAP reform after 2013, the question that is raised is not whether this will take place, but rather how deep the respective reform will be, the results of the simplified model previously described are briefly presented under the form of welfare modifications compared to the current CAP continuation scenario.

Under the conditions of presented hypotheses, the producer and consumer welfare effects are largely due to the price differences between the "current CAP" scenario and the two reform scenarios. Yet, the "baseline" situation of the agricultural products prices (average 2004-2005 prices) is the starting point for all the three scenarios, which can be synthesized by: among the lowest EU prices for wheat, higher maize prices compared to the large EU producers, very high prices for potatoes; extremely low prices for beef, yet higher prices for pork and poultry meat than the prices of the large EU producers.

As expected, the change in producer welfare for the 6 selected products is negative, i.e. the producers lose as a result of CAP reforming, in both reform scenarios, yet the loss is greater in the case of the radical reform scenario.

Table 2 Welfare effect of radically reformed CAP in Romania (2015), change from current CAP, mio RON

Commodity	Producer surplus	Consumer surplus	Net welfare effect
Wheat	-304	218	-86
Maize	-1072	1023	-49
Potatoes	-268	479	211
Beef	-977	270	-707
Pig meat	-242	864	622
Poultry meat	-102	4456	354

Consumers gain in welfare in both scenarios, and the overall gain in the case of the 6 products is higher than the producers' loss, which result in a net positive effect (at the level of the whole economy).

Table 3 Welfare effect of moderately reformed CAP in Romania (2015), change from current CAP, mio RON

Commodity	Producer surplus	Consumer surplus	Net welfare effect
Wheat	-154	109	-45
Maize	-787	719	-68
Potatoes	-223	381	158
Beef	-636	109	-527
Pig meat	-152	644	492
Poultry meat	-54	300	246

At commodity level, in the case of the six products selected for the analysis, the results are the following: the net welfare effect is positive in the case of potatoes, pork and poultry meat, with the greatest contribution of the pork sector, in accordance with the observed trend in other economies where the consumers' incomes are increasing; the net welfare effect is negative in the case of wheat, maize and beef sectors, with the greatest contribution of the beef sector (as a result of the expectation that the price of this product will get aligned with the EU market price by the year 2013); this result highlights the diminution in the importance of the cereal consumption with the increase in incomes.

Net welfare is higher in the radical reform scenario than in the moderate reform scenario, which means that a radical reform would be desired if the situation of producer welfare loss could be well managed.

III. CONCLUSIONS

For most agricultural products, the evolutions of prices on the Romanian market are different from those of the large agricultural producers from the European Union. Evaluation of the effects of reform after 2013 for six main markets (wheat, maize, potatoes, beef, pork and poultry meat) was done by comparing the two CAP reform scenarios (moderate and radical) with the current CAP scenario. Based on a simplified model, under some specific hypotheses, the net welfare effect due to the price changes for the selected products is positive in both reform scenarios, yet greater in the case of the radical reform.

The results of this exercise are valid in the conditions mentioned in the hypotheses, being part of the expectations related to the world agricultural trade liberalization. However, the results do not represent a forecast, taking also into consideration the fact that the recent increases of world grain prices and the increasing tendency of prices for other agricultural products seem to completely change the reference framework of judging the EU agricultural protectionism, being a favourable moment for a radical reform.

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