OECD Workshop on the Disaggregated Impacts of CAP Reform

10-11 March 2010

Impact of the Health Check on structural change and farm efficiency: A comparative assessment of three European agricultural regions[*]

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[*] This work has been developed thanks to the research activities carried out in the framework of the European research project "FACEPA - Farm Accountancy Cost Estimation and Policy Analysis of European Agriculture" (FP7/2007-2013 contract no. 212292) and the National research project PRIN "PUE&PIEC - European Union policies, economic trade integration processes and WTO negotiations".

The European Commission has always considered the Common Agricultural Policy (CAP) as a dynamic political tool that aims to link the agricultural sector with the evolving of the economic, financial, social and political dynamics that distinguish the Member States of the European Union. From this standpoint, the Health Check (HC) is much more than a simple assessment of the state of health of European agriculture; it is a drawing up of the "new rules" that manages the relations between farms and the market, on which the future efficiency and survival of the said farms, and the production sectors that characterise entire European agricultural regions, will depend.

In this context, farms are under the framework of SPS and receive a full decoupled payment. The real innovation introduced by the reform that potentially can modify the existing equilibrium of farm holders is the regionalization of directs subsidies according to the average aid per Ha of the homogeneous region: specific European region or the entire Europe. In theory, the modification of subsidy level will not change the land allocation but, will change the farmer income and will modify (in better or worst) the farmer sensibility to market price variation.

The aim of this paper is to assess the impact of Health Check (or Fischer-Boel Reform) considering all the farm holders belonging to the FADN sample of three European regions: Veneto (IT), Ile-de-France (F), Belgium (B). At the same time, the objective is also to capture the strategy of this farm holders and to observe their trajectory with respect to the research of a more efficient situation.

Three policy scenarios are considered and are compared with a Baseline scenario that reproduces the situation in term of land allocation and revenue, cost, subsidies and income existing before the Fischer-Boel reform;

1. **Single region scenario** "**S_Reg**": payments are calculated on a flat rate basis to each farmer with new rates of modulation on regional bases and modulation of aid at 10% (between 5.000 and 300.000 Euros) and 14% (more than 300.000 Euros);
2. **Single region and market scenario** "**S_Reg_P**": Health Check scenario with variation in market prices (at 2015) in which the variations in prices are added to scenario S_Reg.
3. **European region and market scenario** "**EUReg_P**": payments are calculated on a flat rate basis to each farmer with new rates of modulation on European bases with modulation of aid at 10% (between 5.000 and 300.000 Euros) and 14% (more than 300.000 Euros) and variation in market prices (at 2015).

Market scenario is developed using the future price scenario for the year 2015 provided by FAPRI projections (2008).

The assessment of the impact of the HC is made by using and integrating two different methodological sets.

The first is carried out using a "generalised" Positive Mathematical Programming model in order to reproduce farm behaviour and analyze the impact of different policy scenario on land allocation and farm income. The main characteristic of this model is its capability to estimate accounting variable cost and marginal cost per activity adopting as criteria the total variable cost per farm provided by FADN. The model uses only FADN and endogenous information without additional data provided by the "so-called" experts. The model allows to consider all the farms belonging the FADN database and their specific economic and productive characteristics.

The second methodological set is provided by the use of cluster analysis, according to the K-mean technique, applied to the farm holder belonging to FADN sample in two different moments: at the baseline scenario and at the European regionalization scenario with price modification (EUReg_P). The aim of this second analysis is to capture the dynamics of farms among groups as a consequence of the new economic setting. The integration of the two methods applied to the data of the European FADN enables an in-depth assessment of the impacts and a critical evaluation of the goals that the Community reform proposal is expected to attain.

The results provided by the analysis of three European regions observed by farms specialized on Farm Type 1 shows a different consequences in term of sustainability and on the capability to react on market evolutions.

Of course in the three regions the introduction of regionalization on regional bases will not produce and change in land allocation. Considering all the farms, in average, only in Veneto there is a small change due to the presence of rice in some farms. On the side of the economic impact the reduction of gross margin is significant in Veneto (-8.4%), while in Belgium (one region) gross margin increases (+3.5%). Market intervention will push farmers to modify their specialization in cereals with different emphasis in the three regions according their specialization. In Veneto corn and wheat increase, in Ile-de-France corn and barley increase, in Belgium only wheat increases. At the same time the economic performance improves in all the farms but it is rather negative with respect to the baseline for Veneto and Ile-de-France. The introduction of the regionalization scenario considering homogeneous the Entire EU15 with market scenario, modifies considerably the economic performances in all the farms for all the three regions. By the effect of the reduction of the SPS values the gross margin reduces by 9.2 % in Veneto, by 4.5% in Ile-de-France and by 6.1% in Belgium compared with the baseline scenario.

The analysis of the achieved results through the cluster analysis highlights a common trend for the three sample: a reduction in the degree of disparity among groups of farms moving towards the regionalization at European level. The variables considered in developing the cluster analysis are the GSP per hectare, the total variable costs per hectare, the subsidy level per hectare, the incidence of cereal production of the total UAA and, finally, the class of UAA of each farm. The six groups of farms identified for each region have been characterized by a dynamic of concentration to some specific clusters. More specifically, Veneto region shows a migration of farms towards the first three clusters; a relevant group of farms belonging to Ile-de-France changes the initial cluster for moving to the fifth group that becomes the most representative in case of European regionalization; for Belgium, the behaviour is similar, even if less drastic, because several farms change group for reaching the first and sixth clusters.

The methodological approach developed in this work permits to fully use the FADN information for having useful appraisals on the farm dynamics induced by market evolution and agricultural policy mechanisms. The achieved results show a different capability to react to policy measures and to market conditions by farms belonging to the same farm type in three different European regions providing a measure of the capability to be still efficient and competitive in the market. The results demonstrate how the regionalization may contribute to reduce the difference among farms introducing a more equitable CAP instrument as wished by the last reform.