Paper prepared for the 122nd EAAE Seminar
"EVIDENCE-BASED AGRICULTURAL AND RURAL POLICY MAKING: METHODOLOGICAL AND EMPIRICAL CHALLENGES OF POLICY EVALUATION"
Ancona, February 17-18, 2011

The effects of decoupling on Italian COP sector: an ex-post evaluation

De Vivo C. [1], Henke R. [2], Pupo D'Andrea M.R. [3] and Vanni F. [2]

1 Istituto Nazionale di Economia Agraria, Sede regionale per la Basilicata, Italy
2 Istituto Nazionale di Economia Agraria, Rome, Italy
3 Istituto Nazionale di Economia Agraria, Sede regionale per la Calabria, Italy

pupo@inea.it

The effects of decoupling on Italian COP sector: an ex-post evaluation

De Vivo C., Henke R., Pupo D'Andrea M.R. and Vanni F.

Abstract

One of the main objectives of the 2003 CAP reform was that to enhance farm competitiveness and make farmers able to catch market signals and adjust their production level and specialization accordingly.

The aim of the paper is to evaluate the effects of decoupling in Italy COP sector comparing the estimated results of some structural and economic indicators of a sample of farms before and after the 2003 reform using data from the Italian Institute of Statistics and of the Italian Farm Accountancy Data Network (FADN).

The analysis shows an improvement of income in farms that kept COP production specialization through the years under study. At the same time, farms that opted for a different specialisation in the post reform period improved their economic performance. All this suggests that coupled support had become a constraint rather than an opportunity and that the 2003 reform, decoupling farm support from production, has contributed to a more efficient and market-oriented COP sector in Italy.

Keywords: CAP, decoupling, Italian FADN, COP sector

JEL classification: Q18

1. INTRODUCTION

The 2003 CAP reform (also known as Fischler reform) has implied a big change in the recent history of the CAP. It can be considered a break point with the past and, at the same time, paved the way to a new direction for the future. The break point is represented by the switch to decoupled payments as the main support instrument, a change that started in 1992 with the MacSharry reform and turned around the logic itself of public support in agriculture. At the same time, the reform opened the way to an ongoing process of changes, that led to the CAP Health Check of 2009 and to the following debate on the CAP post-2013 (European Commission, 2010).

One of the main goal of the reform was enhancing farm competitiveness by enabling farmers to catch market signals and adjust their production level and specialization accordingly. However, one of the main risks related to the implementation of this reform was the total abandonment of the primary activity, especially in marginal and mountain areas, where farms are not as potentially competitive as the ones in the plains.

The aim of this paper is to evaluate the effects of decoupling in Italy, by comparing the estimated results of some structural and economic indicators of the COP (cereal, oilseed and protein crops) farms before and after the 2003 CAP reform. The specific aim is to analyze the economic performance of a sample of COP farms using data from the Italian Institute of Statistics (ISTAT) and the Italian Farm Accountancy Data Network (FADN).

In this paper we first provide a brief description of Fischler reform, with a particular emphasis to the main changes that have interested the COP sector together with an overview of the available literature dealing with the effects of decoupling introduced by the 2003 reform (par. 2). In paragraph 3 we describe the structural dynamics of the COP sector in Italy before and after the decoupling, through an analysis of ISTAT data. The ex-post evaluation through FADN data is in par. 4: the effects of decoupling for the COP sector in Italy are observed through an analysis of the economic performances of a constant sub-sample of farms during the 2003-2006 period. Finally, the results are briefly discussed in paragraph 5.

2. BACKGROUND

2.1. The Fischler reform

The 2003 CAP reform was originally conceived as a "mid-term review" of Agenda 2000. Important factors had a relevant influence on its outcomes: the debate on the financial funds for the 2007-2013 financial framework; the WTO round that pushed for a relevant reduction of the market distortions and for a full decoupling of direct payments; the on-going EU enlargement. All these factors added on the need to move forward with the CAP reform along a direction of sustainability, expenditure control, and market orientation.

To this end, the Fischler reform tried to address 4 relevant issues:

- the improvement of the EU agriculture competitiveness;
- the enhancement of a sustainable model of agriculture, through a better market orientation but also through a tighter cross-compliance of support to minimum environmental and agronomic standards;
- the improvement of rural development measures, with a transfer of resources from the first to the second pillar of the CAP;
- the tailoring of the CAP tools to the need of Member States and their territories, with a renewed role for the EU partners into the decision process regarding the CAP implementation.

Decoupling, cross-compliance, modulation and flexibility became keywords of the reform process. In practice, the main feature of the new CAP after the Fischler reform was the fully decoupled Single Payment Scheme (SPS), as reported in EC Regulation 1782/2003. The real revolution of the SPS was its total independence from the production, assuming the feature of a fully decoupled income integration.

One of the main characteristics of this reform had been a new role for the Member States to choose, within a set of measures, those they thought they were the better suited for their agriculture.

In Italy the implementation of the reform was quite controversial. The decoupling was immediately and fully implemented from the first possible year (2005). At the same time, along with the choice of the historical model of SPS, Italy decided to defend the status quo in terms of

distribution of the direct payments, thus rejecting any form of regionalisation that would have redistributed significantly the financial resources amongst beneficiaries and territories.

With specific regards to the COP sector, Italy opted for a fully decoupled support, which prevented the sector from retaining part of the payments that were still partially coupled[1]. The reform also modified the previous payments for durum wheat and protein crops: durum wheat producers received a specific quality premium (40 euro/ha), an aid granted only for traditional production zones[2], while protein crops received a specific area payment of 55.57 euro/ha. Moreover, the COP sector received also a specific support within the framework of the article 69 of EC Reg. 1782/2003, equal to 180 euro/ha granted to farmers using quality certified seeds for wheat, durum wheat, maize, or those who apply a biennial rotation[3].

2.2. Literature review

The literature dealing with the effects of decoupling after the Fischler reform is quite extensive and covers a wide spectrum of issues and methodologies. Some of it is based on qualitative assessment (Halvarez-Coque, 2003; Schroeer, 2004; Swinnen, 2008), while other works are of a quantitative nature. Most of these are actually based on ex-ante hypotheses, while much fewer deal with an ex-post approach, usually focusing on rather limited territories. In Blanco et al. (2008), the ex-post analysis deals with the capacity of Positive Mathematical Programming models (PMP) to forecast a change in cropping patterns in an irrigated area of central Italy as a consequence of the Fischler reform. In Gallerani et al. (2008), the ex-post analysis is based on an empirical survey of 82 farm households in Emilia Romagna that integrate an ex-ante analysis of the decoupling impact, with a specific focus on the investment behaviour. The same authors (Gallerani et al., 2009) have extended their analysis to 250 farm households in 8 Member States always dealing with investment behaviour. Petrick and Ziel (2009) investigates, through an econometric ex post evaluation, the impact of the reform on agricultural employment in 3 Länder in Germany, pointing out how the reform does not have desirable effects on the job maintenance or the creation of new jobs in agriculture.

Unlike the majority of the studies on decoupling, in this paper an ex-post analysis of the Fischler reform was carried out at national level with reference to the COP sector.

Ex ante evaluations are more numerous and rather diversified on the geographical base (from single regions to the EU level) as well as on the sector coverage. The types of models

---

[1] The reform offered the possibility to retain up to 25% of the payments coupled (according to the older area payments for arable crops) or, alternatively, up to 40% of the durum wheat supplement payment.

[2] In Italy the traditional areas coincide with the Central and Southern administrative Regions: Abruzzo, Basilicata, Calabria, Campania, Lazio, Marche, Molise, Umbria, Apulia, Sardinia, Sicily, Tuscany.

[3] The actual payments per hectare granted to farmers under the article 69 in the period 2005-2008 have been rather smaller than the theoretical ones (around -70%).

utilised also vary quite widely and, in general, they all suffer from the constraints of the underlying hypotheses, the projections on price trends, and several other limitations[4].

Amongst the ex ante evaluations, the impact assessment of the EU (European Commission, 2003a) based on the communication of July 2002 (European Commission, 2002) is particularly important, since it includes 6 studies, whose 2 are the results of the Commission Services and 4 committed to external Institutes and run with the support of the FAPRI, CAPRI, CAPMAT and CAPSIM models.

All the models assume different hypotheses and lead to different results. However, all the studies agree in indicating that decoupling implies a better allocation of resources and a higher efficiency in income distribution. In comparison to the status quo, given by the continuation of the Agenda 2000 scenario, all the simulations agree in forecasting an increase in the overall agricultural income in the medium term (2009), basically due to the price growth and to the increase of resources from the second pillar coming from modulation. According to these simulations, although market dynamics are highly differentiated among regions and products, the growth of prices more than balances the decrease of production and the increase in the percentage of modulation.

Looking specifically at the cereal sector, all models predict a positive evolution of the sector competitiveness: a reduction of the area is forecasted in the medium run, but it is partially compensated by an increase of the average yields. The largest output reductions are recorded for durum wheat and rye; 4 studies on 6 agree on the expected reduction in oilseeds area, and also silage area tends to decrease due to the extensivation of livestock (bovines). A signal of the decrease of production (and a possible abandonment) is represented by the growth of the voluntary set-aside.

Following the presentation of the reform proposals in January 2003, the Commission published an update of its assessment (European Commission, 2003b). Generally speaking, the results of these simulations do not substantially differ from the previous ones in terms of land allocation among arable crops, even though a more relevant reduction of land for durum wheat and rye is expected. Looking at the income, the impact is rather limited compared to Agenda 2000 scenario (-0.1% compared to +1.7% calculated in the previous simulation), as a consequence of a tighter modulation effect.

The simulations carried out by the OECD (2004) – that do not take into account the national decisions on the reform – confirm the slight reduction of the COP area, partially compensated by a equally slight increase of the yields. As results, a smaller reduction of production is recorded compared to the Agenda 2000 scenario, under both the hypotheses of minimum and maximum degree of decoupling.

---

4 Particularly interesting is the review in Balkhausen, Banse and Grethe (2007) that compares 8 selected simulation models whose common feature is the comprehensive coverage of the EU agriculture, with a multi-product structure. See also Sckokai and Moro (2008) for a specific analysis on the impact of SPS on investments and outputs in which farmers risk attitudes is also introduced. Brady, Ekam and Rabinowicz (2010) present a synthesis of the main results of the EU IDEMA project on the impact of de-coupling and modulation in the European Union.

3. THE COP SECTOR IN ITALY AND THE EVOLUTION OF CAP SUPPORT

ISTAT data (Farm Structure Surveys) on farms specialized in COP crops show that during the 2003-2007 period the sector experienced a significant decrease of the number of farms (-24.4%). This was particularly evident in mountainous and hilly areas (Table 1).

Table 1: Evolution of the number of farms specialised in COP crops in Italy (2003-2007)

Years	Mountains	Hills	Plains	Total
2003	30,889	140,990	143,462	315,340
2005	22,901	111,600	132,627	267,128
2007	15,804	95,756	126,980	238,539
Var. % 07/03	-48.8	-32.1	-11.5	-24.4
Diff. 07-03	-15,085	-45,235	-16,482	-76,801

Source: own elaboration on Istat data (Italian Farm Structure Surveys 2003, 2005 and 2007)

Although this decrease involved all the altimetric areas, significant differences were observed in the different four Italian macro-regions (North-West, North-East, Central and Southern Italy)[5]. This decrease of specialised farms also involved a significant reduction of the related Utilised Agricultural Area (UAA), with a reduction of almost 840,000 ha (-27.7%) during the 2003-2007 period at national level (Table 2).

Table 2: Evolution of the UAA (000 ha) of farms specialised in COP crops in Italy (2003-2007)

Years	Mountains	Hills	Plains	Total
2003	267	1,389	1,370	3,026
2005	181	1,029	1,266	2,476
2007	118	875	1,195	2,187
Var. % 07/03	-55.9	-37.0	-12.8	-27.7
Diff. 07-03	-149	-515	-175	-839

Source: own elaboration on Istat data (Italian Farm Structure Surveys 2003, 2005 and 2007)

The introduction of decoupling for COP crops in the context of the 2003 CAP reform may have played a significant role in the structural changes described above. Indeed, the reduction of farm number and of UAA was particularly high in the hilly and mountainous areas of Central and Southern Italy, where the transition from coupled aids to the SPS could have decreased the profitability of COP crops. Nevertheless, in order to analyse more in depth the effects of decoupling on the national COP crops sector, it is necessary to observe whether the decoupling could have determined some important changes or shocks in relation to a long-terms structural dynamics of the sector. Indeed, although the evolution of CAP support certainly

[5] The reduction of specialized farms was particularly significant in the hilly areas of Central Italy, in the plains of North-West Italy (-24.5%) and in all the altimetric areas of Southern Italy (-38.8%).

played a leading role in influencing the structural changes, it is also clear that the trends of COP farms and the related UAA were also influenced by other factors such as: (i) the dynamics of the markets of products[6]; (ii) the evolution of production costs (i.e. cost of fertilizers, machineries etc.); (iii) the evolution of production techniques.

Nevertheless, when observing the evolution of the areas with cereals in Italy during the period 1992-2008 (Figure 1), it may be argued that the evolution of the CAP and especially the Common market organisation for cereals has played a leading role in determining the observed trends for the following reasons:

- the initial reduction of the cereal area after 1992 may be considered a consequence of the implementation of the MacSharry reform, which introduced the compulsory set-aside as a tool for limiting the EU cereal production. At the same time, in the long term compensatory payments which were introduced to counterbalance the reduction of institutional prices contributed to maintain the production of cereals in areas where otherwise cereals would not have been cultivated;
- even though the market support mechanisms were further reduced in the context of the 1999 reform (Agenda 2000), in Italy (and in Spain) the regionalization plans increased the reference yields for the calculation of payments of cereals which have maintained the incentive to produce cereals[7] (LMC International, 2005);
- the decoupling introduced in the framework of the 2003 CAP reform (implemented in 2005) may have contributed to the significant reduction of the area cultivated with cereals in 2006 and 2007;
- the increase of the cereal area in 2008 is mainly due to the market dynamics, especially to the strong increase of prices for wheat and maize in the second half of 2007. In addition, in 2008 the compulsory set-aside was abolished.

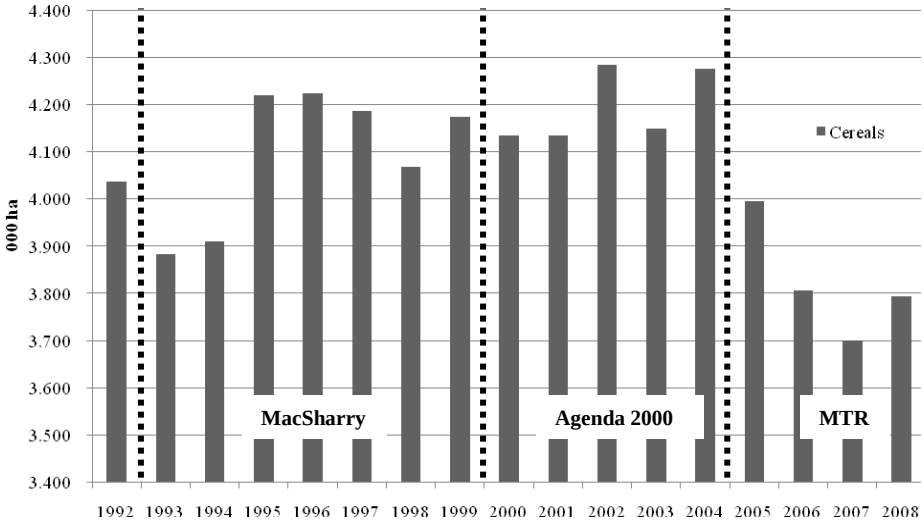
It may be also argued that, during the decade prior to the decoupling, coupled payments in some ways slowed down the structural changes of the sector, since in many cases the production of cereals was not changing according to the market signals and coupled payments increased the dependence of producers from the CAP support (LMC International, 2005). Nevertheless, as already argued, CAP support was not the only factor influencing the observed trends: the significant increase of the area (and of the production) of cereals in 2008 for example was the result of the combination of the agricultural policies and of the market situations (abolition of compulsory set-aside, higher market prices) which seemed to favour the expansions of cereal production (especially soft wheat) in some areas of the country.

---

[6] It must be highlighted that in case of COP crops food and non-food markets must be taken into account, since the majority of COP products may be also utilized as feeding in the livestock sector and for the production of biofuels).

[7] In Italy, the reference yields in the regionalisation plans were differentiated between maize and "other cereals" and between irrigated crops and dried crops. Usually the highest yields concerned the irrigated maize.

Figure 1. The evolution of the area with cereals in Italy (1992-2008)



Source: own elaboration on Istat data (annual data on cultivations, years 1992-2008)

During the same observation period (1992-2008) the oilseeds area (soybean, sunflowers and rapeseed) experienced a trend quite similar to that of the cereals area. On the opposite, protein crops experienced a very uniform trend, with an average of 70,000 ha during the 1996-2008 period[8] (Figure 2).

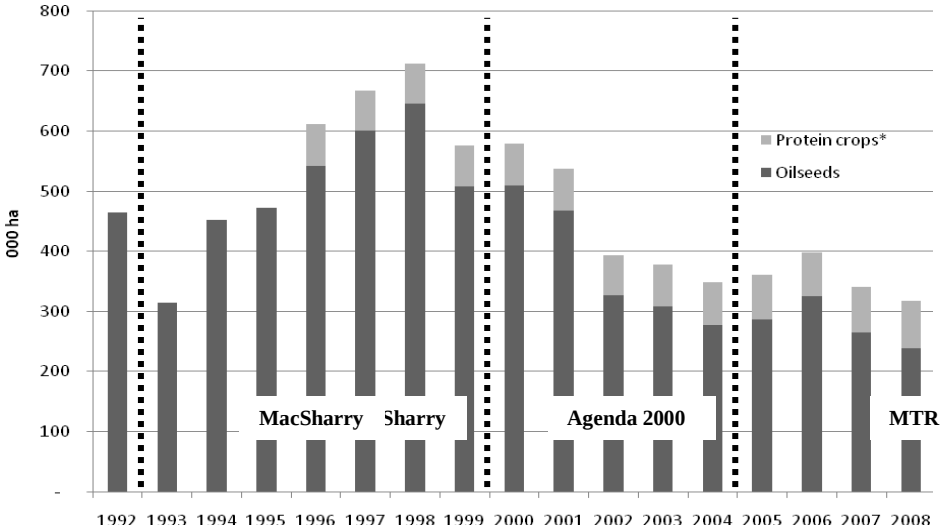
In the case of oilseeds and protein crops it may be observed a very direct link between the evolution of the CAP support and the cultivated area:

- the partially decoupled payments introduced by the MacSharry reform in 1992 may be considered the main factor affecting the increase of the cultivated area with oilseeds during the period 1993-1999. Indeed, the calculation of payments involved higher amounts for oilseeds compared to cereals;
- the trend of cultivated area during the period 1999-2005 reflects exactly the evolution of direct payments. The 1999-2001 represents the transition period towards the alignment downwards of the payments between cereals and oilseeds, a process which was completed in 2002, when a strong decrease of the area was observed. Protein crops, on the contrary, after Agenda 2000 maintained an area payment higher than cereals and oilseeds, in order to ensure an adequate profitability of these crops;
- the reduction of the oilseeds area since 2002 may be the result of several factors, such as the introduction of full decoupling in 2005 (even though there have been many incentives to produce energy crops, especially on set-aside land) and, above all, the increase of

[8] Protein crops (peas, field beans, and sweet lupins) in Italy represent a very small portion of the COP production (on average 1,5% of the COP area).

prices for cereals, which may have decreased the profitability to cultivate oilseeds and protein crops.

Figure 2. The evolution of the area with oilseeds and protein crops in Italy (1992-2008)



* Data not available for 1992-1993

Source: own elaboration on Istat data (annual data on cultivations, years 1992-2008)

4. THE EX-POST EVALUATION THROUGH FADN DATA

4.1. Data, methodology and research questions

Italian FADN gathers information on around 15,000 farms[9] according to the European common methodology that makes possible comparative analysis. FADN dataset includes only "commercial farms", which are farms whose economic size is such to be considered to have market relationships. A "commercial farm" is defined as a farm which is large enough to provide a main activity for the farmer and a level of income sufficient to support her or his family. In practical terms, in order to be classified as commercial, a farm must exceed a minimum economic size[10]. The sample is random and it can be stratified according to the geographical location, the economic dimension and the specialisation (Type of Farming - TF).

In order to follow the behaviour of the same group of farms in the years involved by the Fischler reform, we utilised a constant sub-sample of farms including 6,232 households spread across all Italian regions (which seemed a significant amount to reach the research objectives). More in details, we observed both the diversification of farms production systems and the

[9] Since 2008, due to the structural changes of Italian agriculture recorderd by the 2005 Istat Structural Farm Survey, Italian FADN sample was reduced to 11,686 farms.

[10] The minimum economic size of FADN farms correspond to around 4,800 euros of Standard Gross Margin.

evolution of the economic performance of COP farms from 2003 to 2006[11]. Data have actually been stratified by geographical areas (according to Italian macro-regions) and by altimetry (mountains, hills, plains). In this way, it was possible to assess the diversified reactions to the reform in different areas of the country.

The type of farming considered in this paper is "specialised COP " (TF 13) that included 904 specialised farms in 2003[12]. According to FADN methodology, the farms specialised in COP production comprises all farms where the production of COP crops contributes more than 2/3 of farm's total Standard Gross Margin[13].

Amongst these 904 COP farms, 637 were still in the same TF 13 in 2006, while 267 abandoned the specialisation migrating towards other TFs.

The paper aims at answering to a specific set of questions through a group of structural and economic indicators, including Farm Size, Gross Output, Net Income and the amount of direct payments per farm. The farms performance was analysed comparing the structural and economic indicators before the CAP reform (average 2003-04) and after its take off (2006) for farms that kept the specialisation in the COP sector and for those that during the same period changed specialisation.

More in details, in order to give answers to a very generalised question, such as what was the overall performance of the COP farms in Italy in the years immediately after the implementation of the Fischler reforms, we set up a series of more specific questions whose answers will be the bulk of this paper:

1. How many farms, specialized in COP crops in 2003 (TF 13), have changed their specialization during the 2003-2006 period?
2. What is the result of the comparison of the value of the set of indicators between COP farms in 2003-04 and in 2006?
3. What is the economic performance of the farms that kept the COP specialisation (637 farms) in all the period under study?
4. What is the performance of the farms that opted for a change in the specialisation (267 farms)?
5. What is the result of the comparison between the same set of indicators in 2006 and in 2003 between COP farms and farms that changed specialisation?

---

[11] Data for the first two years were calculated as average in order to flat the possible picks. 2007 was also available in the dataset, but we did not use it since it has been heavily influenced by an extraordinary price rise, especially in the wheat sector.

[12] FADN farms are classified in 8 General Types of Farming: specialist field crops (TF 1); specialist horticulture (TF 2); specialist permanent crops (TF 3); specialist grazing livestock (TF 4); specialist granivore (TF 5); mixed cropping (TF 6); mixed livestock (TF 7) and mixed crops-livestock (TF 8). TF 1(specialist field crops) includes two principal types of farming: specialist COP (TF 13) and General field cropping (TF 14). TF 14 also included COPs, but we did not considered it since it includes a variety of different products not comparable with COP included in TF 13.

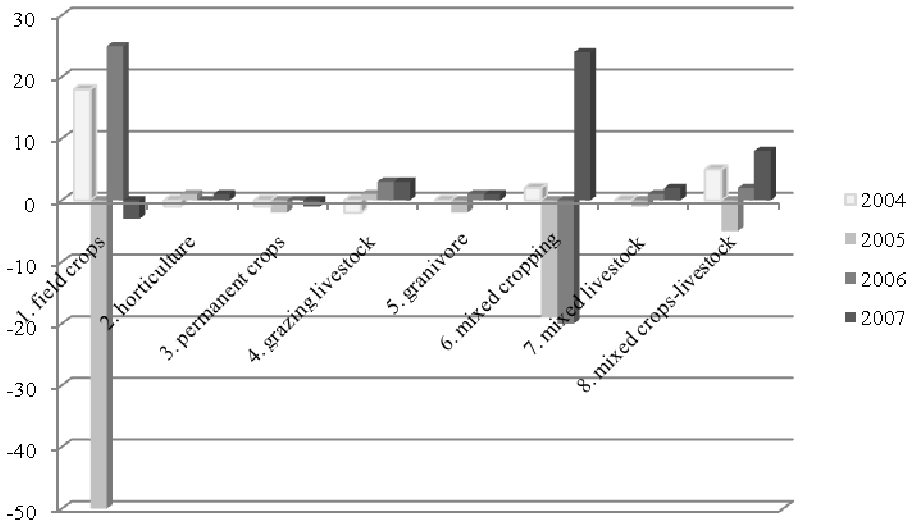
[13] The concept of Standard Gross Margin (SGM) is used to determine the economic size of farms, which is expressed in terms of European Size Units (ESU).

4.2. Main results

With regard to the first research question, we analysed the diversification of production systems of the sub-sample of farms by observing the flows of COP farms (TF 13) from and to other General Types of Farming (TF 1-8) during the 2003-2006 period[14].

Figure 1 shows that the majority of flows regarding COP farms took place in 2005, when 77 farms left this main specialisation (TF 13): 50 farms left the COP specialisation but remained within the General Type of Farming (specialist field crops), while a consistent number of farms (20) moved towards other specialisation within the General TF 6 (mixed cropping). These data show that during the first year of implementation of Fischler reform Italian COP farms increased the differentiation of their production systems, since the flows described above involved the 23% of the COP farms under study.

Figure 3: Balances of flows of the COP farms (TF 13) from and to the 8 General TFs



Source: own elaboration on FADN data

With regard to the second question (comparison between COP farms in 2003-04 and in 2006), data in table 3 show a total reduction in the number of COP farms of 230 units, particularly significant in the case of the mountain farms (-37.1%), as confirmed by the ISTAT data. Farms located in mountain areas also recorded the worst economic results, with a reduction in the farm income and in the income per UAA. The average UAA has grown in all the three altimetric zones, highlighting that especially the smaller farms have changed specialisation moving toward other specializations.

---

[14] Even though farms may change their specialization also within the same General Type of Faming (the general TF 1 - specialist field crops – includes two principal types of farming: TF 13 Specialist COPs and TF 14 General field cropping) we refer only to the flows which involve a change of the General Types of Farming (TF 1-8).

Looking at the economic size of farms, it is worth underlining that for COP farms the weight of the support of the first pillar of the CAP is very high, representing on average the 80-110% of the Farm Net Income. This indicator (direct payments/farm net income) is particularly high in mountains areas, emphasising the fragility and subsistence level for these farms. Direct payments per farm do not change substantially for farms located in mountains and hilly areas, while the first pillar support shows a significant increase for farms located in the plains (+36%). On the contrary, the ratio direct payments/farm net income decrease only in hilly areas (-18.4%).

Economic results are better when observing the Gross Output: in 2006 it grows for all the geographical locations but the gap of the value in the plains compared to the one in the mountains becomes larger over time, and it is even larger when looking at the Net Income: in other words, costs tend to increase over time. This may be due to an increase of depreciation costs, as shown by the increase in farm investments recorded by the funds supplied by the regional Rural Development Programmes for investments. Farm Net Income grows in the hills (+22%) and in the plains (+32%), while it decreases in the mountain areas (-5%).

Overall, it may be observed an improvement of the economic performance of the sector between 2003/04 and 2006. Since the market prices of the COP products remained quite steady over the period under study, this improvement is probably due to the exit of the most marginal farms, and especially of those that used to grow durum wheat in order to receive the CAP support.

Table 3: The main economic indicators of COP farms: comparison between 2003/04 and 2006

		Avg. 2003-04			2006			Var % 2006/2003-04		
		Mountains	Hills	Plains	Mountains	Hills	Plains	Mountains	Hills	Plains
Farms	Nr.	76	413	385	44	274	319	-37.1	-33.7	-17.0
Rented UAA/ UAA	%	37.2	25.2	49.4	38.1	25.4	53.2	2.5	0.7	7.7
Gross output per farm	€	40,989	58,072	10,4974	49,715	64,701	123,798	21.3	11.4	17.9
Gross output per UAA	€	1,059	1,012	1,838	1,143	1,035	2,093	7.9	2.2	13.9
Farm Net Income	€	10,558	19,157	36,827	10,011	23,383	48,503	-5.2	22.1	31.7
Farm Net Income/ UAA	€	273	334	645	230	374	820	-15.6	12.0	27.2
Direct payments per farm	€	11,049	18,899	29,970	11,207	19,003	40,656	1.4	0.5	35.7
Direct payments/UAA	€	285	330	525	258	303	686	-9.7	-8.1	30.6
Direct payments/Farm Net Income	%	103.6	98.7	81.5	111.9	80.5	83.6	8.1	-18.4	2.6
Investment per farm	€	58,146	65,369	63,167	67,934	71,257	65,895	16.8	9.0	4.3
Mechanisation cost per farm	€	3,478	5,728	7,687	4,263	7,380	11,207	22.6	28.9	45.8

Source: own elaboration on FADN data

The third question address the issue of the effects of the reform on farms that kept the specialisation on COP crops over the period under study. Table 4 shows an improvement of the economic indicators for farms located in hills and in the plains both in terms of Gross Output and Net Income. It is worth underlining that, in absolute values, the increase of the Gross Output is larger than that of the Net Income, which is due to an increase in both fixed and variable costs. Mechanisation costs also increase significantly, up to 13% in the mountains and to 38% in the plains.

In 2006 public support from the first pillar of the CAP decreases both in the mountain and hill areas, while it increases in the plains, resulting in a decrease of the share of direct payments on Net Income everywhere, although more clearly in the hilly areas. Thus, even though public support decreases in the mountains and in the hills, specialised farms have improved their economic performances in the hills and even more in the plains. This may be explained by the fact that these are the farms that have chosen to maintain their specialisation, which was justified by the related overall good economic results.

Table 4: The economic indicators of the same 637 COP farms in 2003/04 and in 2006

		Avg. 2003-04			**2006**			**Var % 2006/2003-04**		
		Mountains	Hills	Plains	Mountains	Hills	Plains	Mountains	Hills	Plains
Farms	Nr.	44	274	319	44	274	319			
Rented UAA/ UAA	%	39.8	25.2	52.9	38.1	25.4	53.2	-4.3	1.0	0.6
Gross output per farm	€	47,152	61,363	111,655	49,715	64,701	123,798	5.4	5.4	10.9
Gross output per UAA	€	1,081	1,009	1,855	1,143	1,035	2,093	5.7	2.6	12.8
Farm Net Income	€	11,299	21,084	39,114	10,011	23,383	48,503	-11.4	10.9	24.0
Farm Net Income/ UAA	€	259	347	650	230	374	820	-11.1	7.9	26.2
Direct payments per farm	€	12,895	20,673	32,908	11,207	19,003	40,656	-13.1	-8.1	23.5
Direct payments/UAA	€	288	340	547	258	303	686	-10.4	-11.0	25.3
Direct payments/Farm Net Income	%	108.6	97.5	84.1	111.9	80.5	83.6	3.1	-17.4	-0.7
Investment per farm	€	64,500	70,401	65,321	67,934	71,257	65,895	5.3	1.2	0.9
Mechanisation cost per farm	€	3,770	5848	8,102	4,263	7,380	11,207	13.1	26.2	38.3

Source: own elaboration on FADN data

Meanwhile, what happened to the farms that did change their specialisation? When considering the fourth question, we observed the trend of the same indicators for the 267 farms that during the same period abandoned the TF 13 (Table 5).

In this case, all the indicators show an improvement - to a smaller pace the structural ones, more important in the case of the economic indicators - while Direct Payments show a decrease in the mountains and in the hills, while in the plains the increase is rather substantial (+67%). Both Gross Output and Farm Net Income feature an increase, especially in the plains and in the hilly areas. On the other hand, the underlying hypothesis in this case is that these

farms, being free from any constraint in terms of what to grow and in what amounts, have opted for other products according to market signals, also with possible positive agronomic effects on the soil use.

Table 5: The economic indicators of the 267 farms leaving TF 13 in 2003/04 and in 2006

		Avg. 2003-04			**2006**			**Var % 2006/2003-04**		
		Mountains	Hills	Plains	Mountains	Hills	Plains	Mountains	Hills	Plains
Farms	Nr.	31	157	79	31	157	79			
Rented UAA/ UAA	%	34.3	26.0	25.4	32.2	34.5	25.6	-5.9	32.6	0.9
Gross output per farm	€	29,790	52,209	69,349	32,998	71,867	115,485	10.8	37.7	66.5
Gross output per UAA	€	958	1,056	1,775	1,028	1,392	2,674	7.4	31.9	50.6
Farm Net Income	€	8,941	15,402	23,987	11,942	34,193	46,674	33.6	122.0	94.6
Farm Net Income/ UAA	€	287	311	614	372	662	1,081	29.4	112.7	76.0
Direct payments per farm	€	8,515	15,710	14,139	7,614	14,106	23,613	-10.6	-10.2	67.0
Direct payments/UAA	€	274	316	359	237	275	564	-13.3	-13.0	57.2
Direct payments/Farm Net Income	%	95.2	101.6	57.8	63.8	41.6	52.4	-33.1	-59.0	-9.5
Investment per farm	€	48,310	56,532	53,189	45,853	56,099	66,413	-5.1	-0.8	24.9
Mechanisation cost per farm	€	2,937	5,783	5,581	3,313	5,862	7,266	12.8	1.4	30.2

Source: own elaboration on FADN data

It is also evident for data in table 5 that the share of Direct Payments on Farm Net Income decreases everywhere, even though in a more limited way in the plains. It may be also observed an increase of the rented UAA in hilly areas after the decoupling, which may be the result of the need of farmers to accompany any payment entitlement by an eligible hectare.

All in all, data show that the choice of moving away from the specialisation in COP sector for these farms was definitely positive, especially in the more marginal areas[15].

To address the final question, we first compared farms in 2006 that have kept the COP specialisation with those that have not, then we look at the starting point, comparing the same group of farms in 2003 (Tables 6 and 7). In the first case, results are different according to the altimetry (Table 6): for farms located in hilly and mountain areas, in 2006 the economic results are better for those farms that have modified specialisation, also with a reduced share of support per farm; on the opposite, for farms located in the plains, results are better for COP farms than for the ones that changed specialisation.

[15] It is also worth remembering that the process of income diversification enhanced by the CAP in the last years have had a positive effect on farms, and especially on those marginal and more remote areas. See Henke and Salvioni, 2010; Wilson, 2007 and 2008.

Table 6: Comparison between COP farms and farms leaving FT 13 in 2006

		COP farms			Farms leaving FT 13			Difference % Farms leaving FT 13/COP farms		
		Mountains	Hills	Plains	Mountains	Hills	Plains	Mountains	Hills	Plains
Farms	Nr.	44	274	319	31	157	79			
Rented UAA/ UAA	%	38.1	25.4	53.2	32.2	34.5	25.6	-15.5	35.8	-33.1
Gross output per farm	€	49,715	64,701	123,798	32,998	71,867	115,485	-33.6	11.1	-6.7
Gross output per UAA	€	1,143	1,035	2,093	1,028	1,392	2,674	-10.1	34.5	27.8
Farm Net Income	€	10,011	23,383	48,503	11,942	34,193	46,674	19.3	46.2	-3.8
Farm Net Income/ UAA	€	230	374	820	372	662	1,081	61.6	77.1	31.8
Direct payments per farm	€	11,207	19,003	40,656	7,614	14,106	23,613	-32.1	-25.8	-41.9
Direct payments/UAA	€	258	303	686	237	275	564	-8.0	-9.2	-17.7
Direct payments/Farm Net Income	%	111.9	80.5	83.6	63.8	41.6	52.4	-43.1	-48.3	-37.4
Investment per farm	€	67,934	71,257	65,895	45,853	56,099	66,413	-32.5	-21.3	0.8
Mechanisation cost per farm	€	4,263	7,380	11,207	3,313	5,862	7,266	-22.3	-20.6	-35.2

Source: own elaboration on FADN data

Table 7: Comparison between COP farms and farms leaving FT 13 in 2003

		COP farms			Farms leaving FT 13			Difference % Farms leaving FT 13/COP farms		
		Mountains	Hills	Plains	Mountains	Hills	Plains	Mountains	Hills	Plains
Farms	Nr.	44	274	319	31	157	79			
Rented UAA/ UAA	%	39.8	25.2	52.9	34.3	26.0	25.4	-28.7	-18.7	-35.1
Gross output per farm	€	47,152	61,363	111,655	29,790	52,209	69,349	-36.8	-14.9	-37.9
Gross output per UAA	€	1,081	1,009	1,855	958	1,056	1,775	-11.4	4.7	-4.3
Farm Net Income	€	11,299	21,084	39,114	8,941	15,402	23,987	-20.9	-26.9	-38.7
Farm Net Income/ UAA	€	259	347	650	287	311	614	10.9	-10.1	-5.5
Direct payments per farm	€	12,895	20,673	32,908	8,515	15,710	14,139	-34.0	-24.0	-57.0
Direct payments/UAA	€	288	340	547	274	316	359	-4.9	-7.1	-34.4
Direct payments/Farm Net Income	%	114.1	98.1	84.1	95.2	101.6	57.8	-16.6	3.6	-31.3
Investment per farm	€	64,500	70,401	65,321	48,310	56,532	53,189	-25.1	3.6	-18.6
Mechanisation cost per farm	€	3,770	5,848	8,102	2,937	5,783	5,581	-22.1	-27.1	-31.1

Source: own elaboration on FADN data

The share of public support on Farm Net Income in the case of the former COP specialised farms is definitely smaller than the ones still specialised in COP, and all well below

100%. Looking at the comparison in 2003 for the same farms, we can get a clearer picture of the situation before the reform and we can check if the differences met in 2006 were already there in pre-reform years (Table 7). The best economic results were observed for COP farms, confirming the hypothesis that decoupling pushed the least efficient farms to change their specialisation in order to meet market requirements and to rethink the farm production systems and the production plans.

5. CONCLUDING REMARKS

The analysis presented in this paper reveals in a rather clear way the positive impacts of decoupling on the COP crops sector in Italy, especially with regard to its main objective, which is increasing the market orientation of farms.

Data show in a quite clear way that after the Fischler reform a significant number of COP farms changed their specialisation. Together with the reduction of COP farms – which was particularly evident in mountain areas – an increase of the average UAA was also observed, indicating that this de-specialisation involved to a greater extent smaller and more marginal farms.

The analysis of the economic performance of farms confirmed that the change of specialization concerned the less efficient farms with the worst economic results, resulting in a general improvement of the performance of the COP sector, both in terms Gross Output and of Farm Net Income. It is also worth mentioning that, during the 2003-2006 period, farms leaving the COP sector improved their economic performance. This could be linked to the evolution of the type of CAP support: coupled support had become a constraint rather than an opportunity, while the shift to a decoupled system of support gave to the COP farms the possibility to re-orienting the production plans at the same time receiving the support. This could have involved a transition towards more profitable products or towards the production of non-agricultural services.

The positive effects of decoupling were also confirmed by other evidence: while in 2003 the economic performance of farms leaving the COP sector was worse than those of farms that kept the COP specialisation, in 2006 an improvement of all the economic indicators was generally observed. On the other hand, farms that kept the same COP specialisation through the years under study improved their economic performance. This result may be considered an effect of the re-organisation and structural changes of the COP sector, since it was reached in a general context of reduction of public support and of a slow declining trend of prices.

This evaluation may be also useful to better understand the structural dynamics of the sector which were observed through the analysis of ISTAT data: the reduction of the number of farms and of the related UAA may be considered highly related to the evolution of the policy framework. From this perspective, decoupling was certainly a key issue, since it de-linked the production of COPs from the public support, by enhancing the ongoing process of specialisation and of concentration on larger and more market-oriented farms.

A few words of advice are also necessary to better understand both the significance and the limitations of the observed results:

- FADN data refer only to "commercial farm". This may have some distortive effects on the results in case that the excluded (and smaller) farms would have had different performances compared to the (larger) farms included in the sub-sample;
- the analysis of the economic performance of farms was carried out at current values. While this may be considered a significant limitation in assessing the impact of the decoupling, it may be argued that, by analyzing the performances of farms in a real situation, the observed results are even more interesting and reliable;
- although the data presented in this paper regard a sub-sample of FADN farms which is not representative of the universe of farms, the observed trends may be useful to understand the main impacts of Fischler reform on the COP sector, especially with regard to the economic performance of farms;
- even though the farms under study are specialized in COP production, they also cultivate other type of crops which may have influenced to some extent their overall economic performance.

To conclude, the analysis suggests rather clearly that the main goal of decoupling, which is getting farms more oriented towards market needs, has been basically met for COP sector in Italy. Indeed, data shows that in this sector, also because of its structural and market features, commercial farms were able to modify their strategies according to the market needs and that decoupling was a positive evolution of the CAP support in increasing this capacity. At the same time, data also shows that first pillar payments have continued to play a central role in the overall market performance of the sector even after the decoupling, a factor that will have to be take into great consideration also in the debate on the CAP post-2013, since the new EU agricultural policy could involve a significant reduction of the budget for the COP sector and, above all, a consistent redistribution of financial resources amongst Member States and territories.

ACKNOWLEDGMENTS

This paper presents some preliminary results of an INEA project on the effects of decoupling on the Italian agriculture. The authors are grateful to the Scientific Board of the project for the comments and suggestions: Fabrizio De Filippis, Roberto Esposti, Angelo Frascarelli, Paolo Sckokai, Alessandro Sorrentino. They also would like to thank Concetta Cardillo of INEA for her statistical support and data analysis. The authors are the only responsible of the paper contents.

REFERENCES

Balkhausen, O., Banse, M., Grethe, H. (2007). Modelling CAP Decoupling in the EU: A Comparison of Selected Simulation Models and Results. *Journal of Agricultural Economics* 25: 57-71.

Blanco, M., Cortignani, R., Severini, S. (2008). Evaluating Changes in Cropping Patterns due to the 2003 CAP Reform. An Ex-post Analysis of Different PMP Approaches Considering New Activities. 107th Seminar of the European Association of Agricultural Economists, Sevilla, Spain.

Brady, M., Ekam, S., Rabinowicz, E. (2010). Impact of decoupling and modulation in the European Union: A sectoral and farm level assessment. OECD Workshop on the Disaggregated Impacts of CAP Reform. Paris. France.

Commission EC. (2003). *Proposal for a Council Regulation establishing common rules for direct support schemes under the common agricultural policy and support schemes for producers of certain crops.* COM(23) 2003 final. Bruxelles.

European Commission (2002). *Mid-Term Review of the Common Agricultural Policy. Communication from the Commission to the Council and the European Parliament.* COM(2002) 394 final. Bruxelles.

European Commission. Directorate-General for Agriculture (2003a). *Mid-Term Review of the Common Agricultural Policy. July 2002 Proposals. Impact Analyses.* February. Bruxelles.

European Commission. Directorate-General for Agriculture (2003b). *Mid-Term Review of the Common Agricultural Policy. A Long-Term Perspective for Sustainable Agriculture. Impact Analysis.* March. Bruxelles.

Gallerani, V., Gomez y Paloma, S., Raggi, M., Viaggi, D. (2008). Impatto del disaccoppiamento della PAC sulle imprese agricole dell'Emilia-Romagna. Politiche per i sistemi agricoli di fronte ai cambiamenti: obiettivi, strumenti, istituzioni. XLV Convegno SIDEA. Portici.

Garcia-Alvarez-Coque, J. M. (2003). Is the CAP reform a step toward a rural develpment strategy? *New Medit* 3: Edizioni Dedalo.

Henke R. and Salvioni C. (2010). La diversificazione del reddito nelle aziende agricole italiane: una via d'uscita dalla crisi? paper invited to the XLVII SIDEA Conference, Campobasso, Italy.

LMC International (2005). *Evaluation of the Common Market Organisation (CMO) in the Cereal Sector*. Main Report, Evaluation study for Prepared for: EU Commission — DG Agriculture and Rural Development.

OECD (2004).*Analysis of the 2003 CAP Reform.*

Petrick, M., Zier, P. (2009). Employment impacts of the Common Agricultural Policy in Eastern Germany – A regional panel data approach. International Association of Agricultural of Agricultural Economists Conference. Beijing. China.

Schroeer. L. (2004). EU-25. Trade Policy Monitoring. CAP Reform 2003 – Deconstructing Decoupling. USDA. Gain Report.

Sckokai. P., Moro, D. (2009). Modelling the impact of the CAP Single Farm Payment on farm investment and output. *European Review of Agricultural Economics* 3: 395-423.

Swinnen, J. F. M. (ed.) (2008). *The Perfect Storm. The Political Economy of the Fischler Reforms of the Common Agricultural Policy.*Centre for European Policy Studies. Brussells.

Viaggi, D., Raggi, M., Gomez Y Paloma, S. (2009). Facing decoupling: use of payments and investment reaction to decoupling in the EU. International Association of Agricultural of Agricultural Economists Conference. Beijing. China.

Wilson G.A. (2007). *Multifunctional agriculture. A transition theory perspective*, Cabi Publishing, Cambridge MA (USA) e Wallingford (UK).

Wilson G.A. (2008). From 'weak' to 'strong' multifunctionality: Conceptualising farm-level multifunctional transitional pathways, *Journal of Rural Studies* 24: 367–383.