

CAP Reform and the Mediterranean EU-Member States

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CAP REFORM AND THE MEDITERRANEAN EU-MEMBER STATES

Abstract

In the previous years the Mediterranean Member States of the EU came across the Reform of the CAP and especially last year faced the second wave of the Reform for three typical Mediterranean products, namely cotton, olive oil and tobacco. In this paper a partial equilibrium model is used to simulate the impacts of decoupling, as a key point of the decided CAP Reform. The second wave of the Reform appears to be of crucial importance for the southern EU countries and although the producer's income is reduced, there are positive welfare effects.

Keywords: decoupling, partial equilibrium model, CAP Reform, Greece, Italy, Spain; Q18; Q17; D59

Introduction

In recent years the European Union has put its Common Agricultural Policy (CAP) to an immense reform process. The latest reform of the CAP was first discussed in 1999 in the Council of the Ministers of Agriculture in Berlin. The proposals of this Council, mostly known as "Agenda 2000" were limited up until 2006 and were meant to be revised in 2003. In July 2002 the Commission published the Mid Term Review of the CAP, as a communication between the Commission and the European Council. This was not only a review of the situation in agriculture, but also involved new reform proposals. The proposals were revised and adopted in 2003 by the Council of Luxembourg, now known as the Luxembourg Agreement, providing the framework of agriculture in the European Union for the next 10 years.

The proposals for a reform of the three Mediterranean products, tobacco, cotton and olive oil, followed later, on September 2003 and were discussed and reviewed by the Council on April 2004. They are considered to be a follow up of the Luxembourg Agreement and were not included in the original proposals of 2002, because these products were coming from recent changes that had just been decided by the Council. For tobacco the pressure for an immediate abolition of support from the European Parliament was very intense and the prolongation of the existing support regime was agreed upon very positively by the producer countries. For cotton the Council had adopted a reform in 2001. For olive oil the prolongation of the regime was necessary since no producing country had prepared the olive oil registers and thus risking automatic reductions in support (Commission, 2004).

One could argue that the CAP reform is already well analysed and indeed several models have been employed for the analysis of the impacts of the recent CAP reform. A wider view on modelling exercises of the Luxembourg Agreement give Balkhausen et al. (2005). On the contrary, only few attention has been given to the reform of the three Mediterranean products. For example Karagiannis (2005) employs a partial equilibrium model for analysing the impacts of the changed cotton regime on the producers welfare. This reform implies further adjustments for the Mediterranean agriculture and is strong related and thus, particularly up-to date in 2005 – year of the Mediterranean as it is by the EU-Commission declared – 10 years after the Barcelona Agreement. The discussion for the future of the Mediterranean agriculture should be based therefore on sound empirical studies.

In this context this poster tries to provide fresh analysis concerning the Mediterranean area and some typical for the region products. An empirical analysis was conducted in order to provide information about the impacts of the CAP Reform on the allocation of resources and distribution of income on the agricultural markets of cotton, olive oil and tobacco of the Mediterranean EU member-states. In the second part the political background of the CAP Reform is briefly presented. The third part is devoted to the conceptual framework and its implementation in the partial equilibrium model AGRISIM. In the fourth part illustrative simulation results are discussed, whereas, after concluding remarks in the fifth part follow in the annex extensive tables of the results.

Political Background

The major elements of the new CAP can be summarized by three keywords, that is decoupling, modulation and cross-compliance, although, it should be noted that this is not the first time that these words are included in the CAP. Under decoupling and modulation are meant the introduced changes of the payments to EU farmers. These payments on the one side will no longer be dependent on the production of a good and will be in form of a Single Farm Payment (decoupling) and on the other side, as far as the direct payments are concerned, will be reduced for the large farms receiving more than

5000€ (modulation). They are linked to environmental, food safety, animal and plant health and animal welfare standards (cross-compliance). The objective of the new CAP is a competitive agriculture, where production is determined by the international market forces and not by different support levels of agricultural products as it used to be in practice in the EU.

Regarding the three Mediterranean commodities and taken into account that no price cuts are necessary, the Commission's proposals concern only the decoupling of these direct payments and the introduction of a Single Farm Payment. The decoupled payments will be linked to environmental and food safety standards through cross-compliance and will be subject to the modulation and financial discipline mechanisms. For each sector though different approaches are proposed, since they face different problems and there are differences in their long-term priorities (Commission, 2003a; 2004).

For olive oil a conversion of a minimum of 60% of the coupled payments for holdings larger than 0.3 hectares for the reference period into entitlements to the single farm payment is decided. As a reference period for the calculation of the initial payments the four marketing years 1999/00-2002/03 will serve. 40% of the initial payments may be retained by the member states as an additional olive prove payment per hectare and will have the form of a national envelope. Current private storage measures will be kept as safety net mechanisms. Refunds for exports and for the manufacture of certain preserved food will be abolished (Council, 2004). For holdings smaller than 0.3 hectares the payments will be completely decoupled. The member states may decide by August 2005 the implementation of the reform i.e. to set a higher rate of decoupled payments and the reform will enter into force by 2006.

For tobacco the Council decided a gradual decoupling of the existing tobacco premium in parallel with the establishment of a financial restructuring envelope, within the second pillar of the CAP, to support a more sustainable policy for the sector in the future. A transitional period towards full decoupling is suggested from 2006 to 2010. During this period 40% of the current payment must be decoupled and a maximum of 60% can be maintained as coupled. The production quotas are kept in order to define the quantities that are entitled to receive the coupled payment. At the end of this period the aid for tobacco will be fully decoupled and 50% of it will be included in the single farm payment, 50% will be transferred to the restructuring envelope, whereas the current CMO will not apply (Council, 2004).

For cotton two types of payment are introduced: the single farm payment and a payment of eligible area per hectare of cotton, representing the decoupled and coupled part of the payment respectively. Member states must transfer 65% of the producer-support expenditure to the single farm payment and grant the other 35% as area payment. The eligible area is 370,000 ha for Greece, with a different amount of coupled aid (594 €/ha for the first 300,000 ha and 342.85 €/ha for the remaining 70,000 ha), 85,000 ha for Spain with coupled aid of 898 €/ha and 360 ha for Portugal with 556 €/ha as coupled payment. This area payment will be reduced proportionately if production exceeds the maximum area of the member state (Council, 2004).

The production for these three products is highly concentrated in certain regions, many of them lagging behind in economic development and employs a large proportion of the rural population and often account for 10% or more of the agricultural production in some countries (European Commission, 2004). For example cotton is cultivated mainly in Greece in Thessaly, Macedonia-Thrace, Sterea Ellada and in Spain in Andalusia, Murcia and Valencia (Directorate-General for Agriculture, 2003). The main production areas of tobacco are the provinces of Macedonia-Thrace, Thessaly and west Sterea Ellada in Greece, Extremadura in Spain and Umbria, Campania, Aquitaine and Veneto in Italy (Commission, 2003b). Furthermore due to geographical constraints those areas do not offer many alternatives for other economic activities and for the cultivation of other crops which maybe more competitive. Therefore special consideration should be given to the impacts on these sectors of decoupling payments. Abandoning production due to decoupling for instance, would generate significant negative impacts for rural development.

Conceptual Framework

Implementation of decoupling

The coupled payments under the Agenda 2000 were initially granted as compensation payments for price cuts in the MacSharry reform from 1992. The introduction of those payments could be considered as a shift of subsidies from the actual quantity of a product produced to the actual product itself. For example the level of the payment the farmer received was determined by the cultivation of

wheat and not by the amount of wheat produced. As a next step, the decoupled payments – particularly in association with cross-compliance – shifts the payments from the single product to the whole agricultural production. For example, the planting of wheat does not qualify for a payment, but rather the cultivation of agricultural land.

There is thus a distinction between the 2 phases of decoupling, i.e. between the decoupling of the payments from the produced quantity and the Single Farm Payment there. The Single Farm Payment and its regional implementation according to the EU Regulation 1782/2003, influences the production and therefore has impacts on the market and these impacts are again determined by the production effects of payments. A more elaborate discussion on how “coupled or decoupled” the introduced decoupled payments of the Luxembourg Agreement can be found for example in Binfield et al. (2005). Thus, the theoretical challenge for analysing decoupling is to define a pragmatic term of “production-effectiveness” of direct payments to work with and to analyze the production-effectiveness of the granted payment.

The *production-effectiveness* can be defined as the share of direct payments to cause changes in the production structure compared to a situation without direct payments and thus varies between 0% and 100%. The direct payment can be converted ceteris paribus into an increase of the producer price, that leads to the same results for the produced quantity. Hence, a producer incentive price results from the farm gate price increased by the production-effective direct payment.

In order to analyse empirically the effects of decoupling according to the above definition specific steps were necessary (Figure 1). First, the total sum of all decoupled payments is calculated. Dividing this total sum by the relevant total area, the decoupled payment per hectare is determined. The relevant total area consists of the area used for cereals including rice, oilseeds, sugar beet, sugar cane, cotton, olive oil, tobacco and of the forage area. For crops, the result is equivalent to the subsidy per production activity level per hectare. Dividing this result by the stocking density regarding livestock activities, the subsidy per production activity level is determined for the products of ruminants, i.e. milk and beef. Pig and poultry meat are assumed not to be directly affected by decoupled payments. Dividing the decoupled payment per production activity level for every product by its average yield, leads to a subsidy per unit of output. The impact on the producer incentive price for every product arises from the multiplication of this subsidy per ton by a specific multiplier for the production-effectiveness of direct payments. It should be noted that all subsidies in the model affect the producer incentive price.

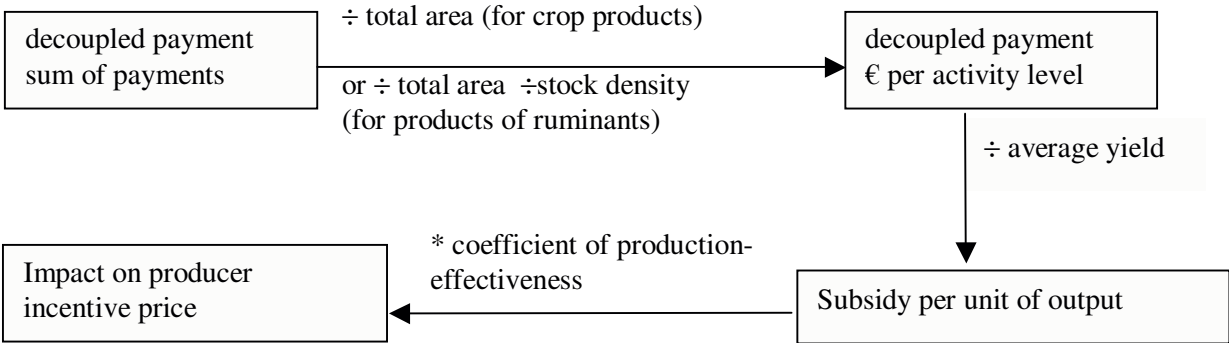


Figure 1: The path of decoupling in AGRISIM

The model AGRISIM

An adjusted version of the world trade model AGRISIM is used for the empirical analysis. AGRISIM is a partial equilibrium, multi commodity, multi region model, comparative static in nature, with non – linear supply and demand functions and constant elasticities. Policy interventions are considered as changes of nominal protections rate, price transmission elasticities, minimum producer prices, production quotas and subsidies, whereas through shift coefficients in the demand and supply functions additional variables can be simulated, like population and income growth (for more details see Pustovit, 2003; Schmitz, 2002). The base version of the model includes 9 commodities: wheat, coarse grains, rice, oilseeds, sugar, milk, beef, pig meat and poultry meat. The database was recently updated for the year 2001.

The adjustments of the model concern the regions and the commodities, in order to be able to illustrate better the second wave of the Reform of the CAP. AGRISIM is extended by the three commodities olive oil, tobacco and cotton, whereas the regions are reorganized and the world is organised into 17 regions. In this version Greece, Italy, Spain and the rest of the Member States of the EU15, are modelled separately in order to extract the impacts of the agreed decoupled payments, as included in the reformed CAP, on those four countries/regions. The other regions/counties included are the new Member States of the EU without Cyprus and Malta (i.e. Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia), Russia & Ukraine, Turkey, Australia, USA, Mexico, Japan, Rest of OECD countries (Canada, Iceland, Korea, Norway, New Zealand, Switzerland), Brazil, China, South Africa and Rest of World.

Implementation of the CAP Reform

The implementation of the reformed CAP is realised under different scenarios, as Table 1 shows.

In the first scenario only the first wave of the latest CAP Reform is modelled and all direct payments for the initial products included in the Luxembourg Agreement, i.e. wheat, coarse grains, oilseeds, rice, sugar, milk and beef are fully decoupled in the model. It should be noted that the option of full decoupling is chosen instead of the partial decoupling since most of the EU Member countries have expressed themselves towards not using the provisions of coupling (Agra-Europa, 2004). Furthermore as the model is comparative static and makes projections within a 10 year horizon only final situations regarding changes in the parameters of the model is suggestive to be modelled, like final changes due to an altered policy regime and not changes of a transitional implementation of the new policy regimes, fact that encourages the modelling of the full decoupling option. In the last scenario on the other hand only the second wave of the CAP Reform, i.e. the reform for cotton, olive oil and tobacco is modelled. Through these two scenarios is examined if and how much the Mediterranean EU countries are affected by each wave of the Reform and avoiding overlapping effects by modelling at once both waves.

Table 1: Base Assumption (BA) and simulated Scenarios (SC)

	Agenda 2000	Lux. agreement	Tobacco	Cotton	Olive oil
BA	✓	-	-	-	-
SC1	✓	Total decoupling of all direct payments for all products except of tobacco, cotton, olive oil	-	-	-
SC2	✓	Same as SC1	100% decoupling, direct payments reduced by 50%	65% decoupling of direct payments	60% decoupling of direct payments
SC3	✓	Same as SC1	Same as SC2	100% decoupling of direct payments	100% decoupling of direct payments
SC4	✓	Same as SC1	Same as SC2	Same as SC3	100% decoupling, direct payments reduced by 40%
SC5	✓	-	Same as SC2	Same as SC2	Same as SC2

Source: own illustration

In the second, third and fourth scenario the complete CAP Reform is modelled using the assumptions of the first scenario with small differences between the scenarios, depending on the implementation of the new policy regime the Member States will choose. In the second scenario the direct payments for tobacco, cotton and olive oil are decoupled, but all provisions of coupling for these two products are used. For tobacco all payments provided as production aid must be decoupled after 2010 and 50% of them will go to the Restructuring Envelope and therefore will no longer be provided as direct payment to the producers. In the third and fourth scenario all direct payments for all products

are decoupled. Their only difference is that in the fourth scenario the production aid of olive oil is reduced by 40%. This 40% goes to the National Envelope and the Member States can distribute it to the producers as a coupled payment (SC2), as a decoupled payment (SC3) or use it for other purposes, like restructuring of the olive groves and the cultivation areas (SC4).

The base year is 2001 and therefore the base assumption for all scenarios is the fully implementation of Agenda 2000, without reforms on the milk market. As a consequence reforms under Agenda 2000 from the years 2002 and 2003 are not implemented in the base year. In order to include these reforms direct payments for oilseeds and beef prices were decreased and direct payments for beef were increased.

The variation of the multipliers for production-effectiveness is used in sensitivity analyses and thus three sub-scenarios are modelled for every main scenario. The production-effectiveness is modelled to be a) initial to the previously existing coupled payments, b) half of them and c) the decoupled payments have no production effects.

Illustrative Simulation Results

The results involve changes in prices, produced quantities, consumption, net trade and welfare with particular emphasis on the three EU-Mediterranean countries. For a better presentation this part is divided to three sub-parts. In the first part the effects on prices and production are discussed, in the second the net trade effects, whereas the welfare effects follow in the third and last sub-part.

Price and Production Effects

The major trends regarding the prices (farm gate price and producer incentive price), the production and the demand from all simulated scenarios are briefly shown in Table 2. Detailed tables of the changes on the production and the farm gate prices are given in the appendix (Table 4 - 12). Overall the decoupling of the direct payments results to a reduction of the producer incentive price – price which includes the farm gate price and those subsidies that are assumed to affect production – for most of the commodities examined, with only a few exceptions as indicated in the footnotes of Table 2.

Table 2: Trends due to the CAP Reform in Greece, Italy and Spain (Scenarios 1, 2, 3, 4 and 5¹)

Commodities	Farm Gate Price	Producer Incentive Price	Production	Demand
Wheat	→	↘ ²	↘ ⁵	→
Coarse Grains	→	↘	↘	→
Oilseeds	→	↘ ³	↘ ⁶	→
Beef	↘	↘	↘	→
Cotton	→	↘ ⁴	↘	→
Tobacco	→	↘ ⁴	↘	→
Olive oil	→	↘ ⁴	↘	→

¹ Scenario 5 involves changes only to cotton, tobacco, and olive oil; ² except of Italy; ³ except of scenario 2 with initial production-effectiveness; ⁴ except of scenario 1 with initial and half production-effectiveness; ⁵ except of Greece; ⁶ except of Spain and Italy in all scenarios with no production-effectiveness, where the revised trends are observed

Source: own illustration according to simulation results

The changes of the producer incentive prices vary between about 0.01 % (in the fifth scenario, with no production effectiveness by most of the products initially included in the CAP Reform) and 140 % (for milk 2nd scenario, initial production-effectiveness in Greece) in absolute numbers. The first wave of the CAP Reform affects mainly the products initially included in the Luxembourg Agreement (scenario 1), whereas and as expected only the second wave of the CAP Reform has impacts mainly on cotton, tobacco and olive oil. The changes on the producer incentive prices of poultry and pig meat are due to cross-price effects. It should be noted that all changes are more intense under the third sub-scenario, where the direct payments have no effects on the production. Furthermore the scenarios 2, 3 and 4 give only minimal differences.

Regarding the farm gate prices, here the changes are more limited, less than 4.5 % in absolute numbers. They do not always follow the same trend with the producer incentive price. For example for wheat, coarse grains and oilseeds the farm gate price rise, whereas the producer incentive price falls. Although this seems to be controversial at first place, it is not. The decrease of the producer incentive

price is attributed to the reduced direct payments that affect the production and this reduction is more intense than the rise of the farm gate prices resulting in decreasing producer incentive prices. The changes here are again more intense when the production effectiveness is minor.

Looking at the production, it follows the tendency shown by the producer incentive prices. This trend was expected because the lower producer incentive prices influence the supply and result in lower produced quantities. There are only two exceptions, namely by oilseeds and pig meat. The effects on pig meat and poultry are again attributed to cross-price effects because the production of these two commodities is assumed not to be directly affected by the decoupling as it does not depend on the available area (hectares) as it happens by other livestock products (i.e. beef and milk). The produced quantities of sugar and milk are not altered because of the application of quotas.

The demand remains almost constant, since the introduced decoupled direct payments are supposed to influence only the production side.

Net trade Effects

Analogous tendencies with the production are shown regarding net trade. The net trade is estimated in the model as the difference between the production and the demand. As the demand remains almost stable, when the production decreases the exports decrease and the imports rise and vice versa. In Table 3 are shown the observed trends in Greece, Italy and Spain and the detailed table is included in the Appendix (Table 13).

Table 3: Net trade effects* for Greece, Italy and Spain

Commodities	Trend	Comment
Wheat	→	Spain: net importer; Italy: net importer; Greece: net importer, change of trade status on SC1, 2, 3 and 4
Coarse Grains	→	All three countries net importers
Oilseeds	→	All three countries net importers
Beef	↘	Spain: net exporter, change of trade status by SC1, 2,3,4 Italy and Greece: net importers
Cotton	→	Greece and Spain: net exporters, change of trade status in Spain by scenarios 3, 4; Italy: net importer
Tobacco	→	Italy and Spain: net importers; Greece: net exporter
Olive oil	→	Greece and Spain: net exporters; Italy: net importer

* The net trade in the model is calculated as the difference between the supply and the demand. Therefore when supply>demand a country (or region) is a net exporter and when supply<demand a country (or region) is a net importer.

Source: own illustration based according to simulation results

The Reform of the CAP results in a change of the trade status in four cases: Greece from net importer of wheat of about 249,000 tonnes becomes net importer of about 450,000 tonnes in the first scenario and of about 250,000 to 500,000 tonnes in scenarios 2,3 and 4. Regarding beef, Spain becomes a net importer of about 9,000 to 103,000 tonnes, depending on the production effectiveness in the first scenario and of 40,000 to 104,000 tonnes in scenarios 2, 3 and 4 with half and no production-effectiveness, but remains net exporter of about 16,000 tonnes when the production effectiveness of the decoupled direct payments is the same with the coupled payments. Initially Spain exports about 12,000 tonnes. Again in Spain there is a change of the trade status of poultry in the first scenario and in the second, third and fourth scenario only with no and half production effectiveness, where the country exports about 9,000 to 60,000 tonnes (under the base assumption Spain is net importer of about 36,000 tonnes). Finally by the trade of cotton and by scenarios 3 and 4 Spain from net exporter of about 9,000 tonnes becomes net importer of about 3,000 tonnes.

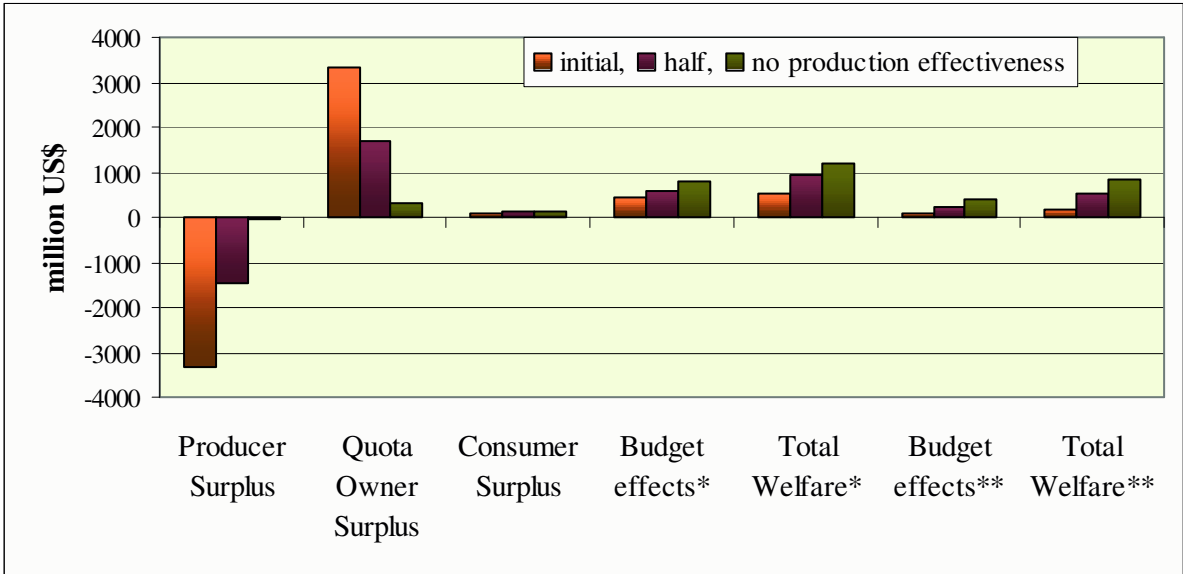
Welfare effects

The decoupling of direct payments results in welfare losses for the producers and welfare gains to all other components of social welfare (quota owner, consumer, budget) in all examined scenarios (for detailed figures, see Table 14 in the appendix). Figure 2 presents the effects of decoupling using all the provisions of coupling for tobacco, olive oil and cotton (scenario 2), with parallel variation of the production-effectiveness.

The producer surplus is reduced more if the direct decoupled payments have the same influence with direct-coupled payments and is negative in all three examined countries. These losses though in the producers income could be compensated by the changes of the quota owner surplus, when the farmer is the owner of the quotas. The quota owner surplus is positive and it is lower when the production-effectiveness is lower.

The consumer surplus remains constant with the variation of the production-effectiveness, due to the constant demand.

Concerning the budget, it is positive mainly because of reduced expenditure. Nevertheless, two different budget effects and consequently two different total welfare effects are illustrated in the figures, which involve the reduced amount of direct payments of tobacco and olive oil. In the first case (budget effect* and total welfare* of the Figure 2 and 3), this amount is assumed to increase welfare, because it is no longer used as direct payments and can be used in alternative ways. This results in lower budget expenditure in terms of welfare. In the second case (budget effect** and total welfare**) this amount is not assumed to increase welfare, because it remains in the sector of the examined products for e.g. restructuring programs. Thus the amount is earmarked and therefore the budget expenditure is higher than in the first case. This results in lower total welfare gains.



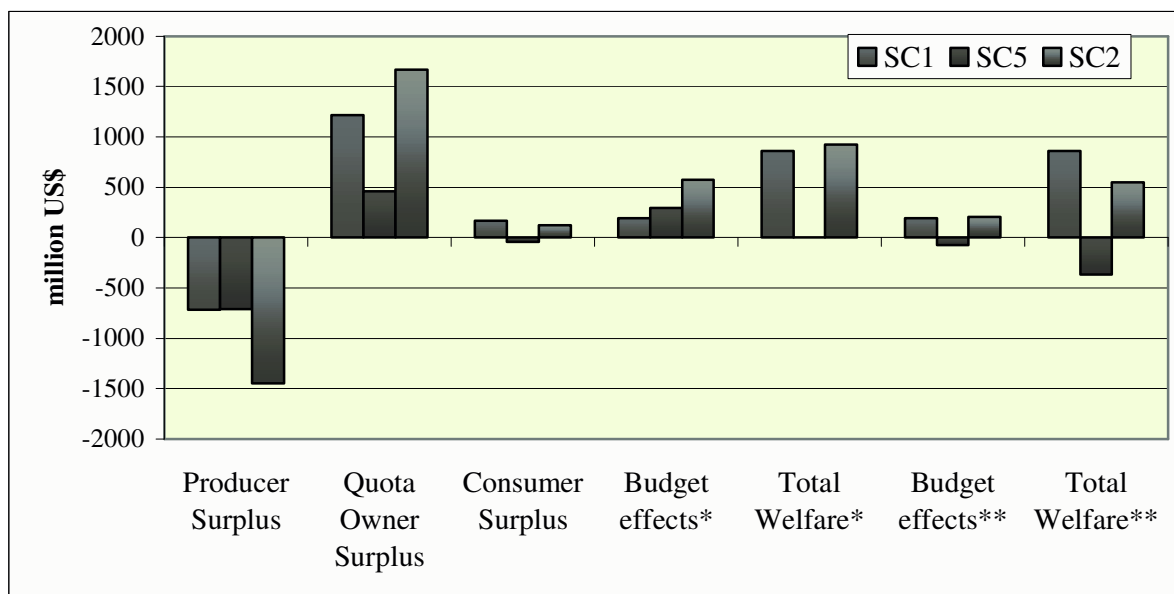
*, ** see text, p.7

Figure 2: Welfare effects of decoupling on the south-EU countries using the provisions of coupling (scenario 2)

It should also be noted that the CAP is financed according to the principle of financial solidarity. Thus, the budget effects will not occur in the different member states but in the EU budget. Taking into account the relatively low contributions of the Mediterranean member states to the EU budget, the welfare gains due to lower budget expenditure should be included in fact only partially in the national budget effects. This results in a lower change in total welfare for the Mediterranean EU countries.

Full decoupling without the provisions of coupling (scenarios 3 and 4) results in the same trends, but with higher losses for producers and higher gains for the budget, due to more significantly reduced expenditure.

Figure 3 compares the welfare effects of scenarios 1, 5 and 2 to show the impacts of the different steps of CAP reform. Scenario 1 simulates decoupling direct payments for the products initially included in the Luxembourg Agreement, scenario 5 simulates the hypothetical situation of decoupling direct payments only for cotton, olive oil and tobacco and in scenario 2 the complete CAP reform using all the provisions of coupling for the three products is simulated. It is shown that the markets of the latest products are of major importance for the Mediterranean EU Member-States, whereas for those countries the effects of the Luxembourg Agreement are not negligible. The losses for the producers are higher under the so-called Reform for the Mediterranean products, but on the other side the higher gains for the budget are observed under this reform.



*, ** see text, p.7

Figure 3: Welfare effects of decoupling on the southern EU Member-States (half prod.-effectiveness)

The producers lose the same amount when only the Luxembourg Agreement is applied or only when the obligatory reform of the CAP for tobacco, olive oil and cotton would take place (scenarios 1 and 5 respectively). Nevertheless, the latter does not provide budget gains. Again the difference on the budget due to the assumptions about the welfare effects of the reduced amount of direct payments of tobacco and olive oil is well reflected.

Concluding remarks

The Reform of the CAP and especially the Reform for the Mediterranean products tobacco, olive oil and cotton, as a follow up of the Luxembourg Agreement, is expected to influence and determine the agricultural sector of the Mediterranean member states of the EU. A key point of this reform is the introduction of the Single Farm Payment, whereas price cuts or adjustments were not necessary.

The objective of this Poster has been to analyse the impacts of both waves of the CAP Reform on the Mediterranean Member States of the EU with a partial equilibrium model. It focuses on the introduced Single Farm Payment as key point of the Reform and on modelling the decoupled payments.

The empirical analysis was carried out with an updated version of the model AGRISIM. The updates involved not only the implementation of decoupled payments in the model, but also the extension of the data bank of the model with the three products, namely cotton, olive oil and tobacco and the modelling of Greece, Italy and Spain and the rest of the EU-15 countries as separate regions. This contribution could be seen as a first step of modelling Mediterranean commodities and sets the basis of further development of the model. Nevertheless, the simulation of the decoupled direct payments under different scenarios does provide deeper insights concerning prices, quantities and welfare due to the different reform steps.

The implementation of the reformed CAP is realised under different scenarios, whereas the effects of the decoupled payments on the farmers decisions regarding the production procedure are simulated with the variation of the term “production-effectiveness” in sub-scenarios, which serves as a sensitivity analysis. The simulations generate effects on production, consumption, domestic and border prices, trade, producer and consumer surplus, taxpayers gains or losses and overall welfare.

Overall the preliminary results indicate a reduction of the producer incentive price – price which includes the farm gate price and those subsidies that are assumed to affect production – followed by a decrease of the produced quantities. The demand remains almost constant, since the introduced decoupled direct payments are supposed to influence only the production side. Analogous tendencies are shown regarding net trade. The exports fall and the imports rise, resulting to a change of the net trade status in Spain and Italy by trade of cotton and olive oil accordingly.

The change of producer surplus is negative in all examined scenarios and sub-scenarios, but the change of quota owner surplus is always positive and can compensate the losses of producer surplus. The reform of the CAP results in less budget expenditure. The Mediterranean member states of the EU are mainly affected by the reform for the Mediterranean products, whereas the pure effects of the Luxembourg Agreement are not negligible.

Worth to be noted is also the fact that the scenarios 2, 3 and 4, where the different degrees of decoupling regarding cotton and olive oil are modelled, generate are only minimal differences. This is an indicator that the different implementation of the decoupling of cotton and olive oil is not of significant importance.

Further work plans though are required so as to provide an overall look of effects on major agricultural markets of the Mediterranean countries due to recent reforms of the agricultural sector. They involve the extension of the model with the Mediterranean partner countries of the EU, since these countries are the main competitors of the southern EU member-states, with a simultaneous consideration of a liberalisation of the trade between the EU and the Mediterranean partner countries, term included under the Barcelona Agreement. The markets of fruit and vegetable should also be examined, since both their share in the trade in the Mediterranean basin and their contribution to the agricultural output on the Mediterranean countries is high.

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Appendix – Results of AGRISIM

Table 4: Change of Production in Greece (in %)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	35.03	37.33	39.72	26.66	32.80	39.72	-1.01	-0.45	0.00
Coarse Grains	-15.48	-13.79	-11.77	-19.60	-16.50	-11.77	-4.37	-2.39	0.00
Oilseeds	10.38	10.27	10.32	12.39	11.92	12.17	3.84	2.75	1.65
Sugar	0.00	0.00	0.00	0.00	0.00	0.00	-6.08	-3.25	0.00
Milk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	-18.99	-20.73	-22.51	-13.27	-17.77	-22.51	5.03	2.55	0.00
Pig meat	7.48	8.41	9.34	3.36	6.05	9.34	-2.84	-1.49	0.00
Poultry	3.14	3.49	3.81	1.26	2.42	3.80	-1.34	-0.70	0.00
Cotton	0.37	0.15	-0.08	-4.71	-5.50	-6.34	-5.22	-5.71	-6.22
Tobacco	0.12	0.04	-0.02	-11.57	-11.84	-12.10	-11.76	-11.91	-12.07
Olive Oil	0.11	0.04	-0.04	-0.53	-0.75	-0.99	-0.67	-0.80	-0.94

Table 5: Change of Production in Italy (in %)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	7.28	-8.90	-26.14	13.34	-5.63	-26.14	6.15	3.09	0.00
Coarse Grains	-19.26	-24.73	-30.40	-17.14	-23.62	-30.40	1.83	0.92	0.00
Oilseeds	4.39	-5.49	-15.95	12.21	0.53	-12.00	8.49	6.58	4.64
Sugar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Milk	0.00	0.00	-4.04	0.00	0.00	-4.04	0.00	0.00	0.00
Beef	-10.58	-14.32	-18.96	-9.20	-13.60	-18.96	1.22	0.61	0.00
Pig meat	2.22	4.14	6.49	1.46	3.68	6.49	-0.68	-0.35	0.00
Poultry	-0.04	0.99	2.28	-0.44	0.73	2.28	-0.41	-0.21	0.00
Tobacco	0.38	0.17	-0.03	-14.67	-15.14	-15.59	-15.39	-15.46	-15.54
Olive Oil	0.89	0.84	0.82	-0.94	-1.20	-1.46	-2.12	-2.17	-2.23

Table 6: Change of Production in Spain (in %)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	-3.94	-10.96	-18.57	0.21	-8.69	-18.57	3.91	1.97	0.00
Coarse Grains	-19.35	-24.85	-30.58	-16.06	-23.12	-30.58	2.83	1.42	0.00
Oilseeds	0.52	-9.01	-18.76	10.78	-1.86	-14.96	10.61	7.63	4.62
Sugar	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.02	0.00
Milk	0.00	0.00	-1.47	0.00	0.00	-1.48	0.00	0.00	0.00
Beef	-3.47	-10.56	-18.51	0.46	-8.42	-18.51	3.78	1.91	0.00
Pig meat	2.55	3.79	5.21	1.70	3.29	5.21	-0.66	-0.34	0.00
Poultry	5.10	7.53	10.34	3.67	6.67	10.33	-1.05	-0.54	0.00
Cotton	0.40	0.18	-0.05	-5.80	-6.22	-6.66	-6.40	-6.49	-6.59
Tobacco	0.09	0.04	-0.01	-7.65	-7.75	-7.84	-7.78	-7.80	-7.82
Olive Oil	0.42	0.60	0.82	-0.58	-0.41	-0.17	-1.04	-1.01	-0.97

Table 7: Change of Producer Incentive Price in Greece (in %)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	-24.29	-30.55	-36.83	-1.10	-18.96	-36.83	23.18	11.59	0.00
Coarse Grains	-40.73	-42.82	-44.91	-32.43	-38.67	-44.91	8.31	4.15	0.00
Oilseeds	-10.17	-15.42	-20.65	8.44	-6.14	-20.71	18.60	9.26	-0.07
Sugar	3.40	1.84	0.28	8.82	4.55	0.28	5.43	2.72	0.01
Milk	52.37	25.45	-1.09	140.35	69.43	-1.10	87.98	43.98	-0.01
Beef	-29.66	-31.89	-34.11	-22.37	-28.24	-34.11	7.29	3.64	0.00
Pigmeat	-0.43	-0.84	-1.36	-0.41	-0.83	-1.36	0.03	0.01	0.00
Poultry	-0.51	-0.82	-1.23	-0.48	-0.80	-1.23	0.02	0.01	0.00
Cotton	2.66	1.08	-0.58	-29.17	-33.23	-37.38	-31.83	-34.31	-36.80
Tobacco	0.58	0.21	-0.10	-45.92	-46.75	-47.52	-46.49	-46.96	-47.42
Olive Oil	3.64	1.08	-1.58	-15.91	-21.96	-28.13	-19.44	-22.99	-26.54

Table 8: Change of Producer Incentives Price in Italy (in %)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	7.89	-14.46	-36.83	16.65	-10.08	-36.83	8.75	4.37	0.00
Coarse Grains	-29.05	-36.98	-44.91	-25.89	-35.40	-44.91	3.16	1.58	0.00
Oilseeds	7.34	-7.76	-22.83	13.15	-4.88	-22.90	5.80	2.86	-0.08
Sugar	15.93	8.10	0.28	18.94	9.61	0.28	3.02	1.52	0.01
Milk	29.55	14.04	-1.09	35.42	16.97	-1.10	5.87	2.93	-0.01
Beef	-20.14	-27.13	-34.11	-17.48	-25.80	-34.11	2.66	1.33	0.00
Pigmeat	-0.43	-0.84	-1.36	-0.41	-0.83	-1.36	0.03	0.01	0.00
Poultry	-0.51	-0.82	-1.23	-0.48	-0.80	-1.23	0.02	0.01	0.00
Cotton	8.72	4.19	-0.39	-20.43	-25.81	-31.24	-29.15	-30.00	-30.85
Tobacco	1.89	0.85	-0.13	-54.77	-55.99	-57.14	-56.64	-56.83	-57.02
Olive Oil	16.28	7.60	-1.15	-6.61	-16.86	-27.18	-22.81	-24.42	-26.02

Table 9: Change of Producer Incentive Prices in Spain (in %)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	-12.54	-24.67	-36.83	-4.99	-20.91	-36.83	7.53	3.76	0.00
Coarse Grains	-28.29	-36.60	-44.91	-23.18	-34.04	-44.91	5.11	2.56	0.00
Oilseeds	-0.33	-11.70	-23.04	6.51	-8.31	-23.11	6.83	3.38	-0.08
Sugar	4.81	2.54	0.28	6.19	3.24	0.28	1.39	0.70	0.01
Milk	39.18	18.85	-1.09	51.05	24.78	-1.10	11.87	5.93	-0.01
Beef	-8.26	-21.19	-34.11	-0.68	-17.40	-34.11	7.58	3.79	0.00
Pigmeat	-0.43	-0.84	-1.36	-0.41	-0.83	-1.36	0.03	0.01	0.00
Poultry	-0.51	-0.82	-1.23	-0.48	-0.80	-1.23	0.02	0.01	0.00
Cotton	2.90	1.30	-0.35	-34.74	-36.79	-38.90	-37.64	-38.09	-38.55
Tobacco	0.47	0.18	-0.07	-32.84	-33.20	-33.52	-33.30	-33.38	-33.45
Olive Oil	6.51	2.58	-1.44	-5.50	-10.43	-15.46	-11.91	-12.96	-14.01

Table 10: Change of Farm Gate Prices in Greece (%)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	1.66	3.10	4.51	1.55	3.04	4.50	-0.14	-0.07	-0.01
Coarse Grains	2.01	2.92	3.83	1.95	2.89	3.84	-0.05	-0.02	0.01
Oilseeds	0.21	0.81	1.44	0.06	0.70	1.36	-0.16	-0.13	-0.09
Sugar	0.09	0.19	0.29	0.09	0.19	0.29	0.01	0.01	0.01
Milk	-0.06	-0.14	0.19	-0.07	-0.15	0.18	0.00	-0.01	-0.01
Beef	-0.01	-0.02	-0.02	-0.01	-0.02	-0.02	0.00	0.00	0.00
Pigmeat	-0.44	-0.86	-1.39	-0.42	-0.85	-1.40	0.03	0.01	0.00
Poultry	-0.53	-0.84	-1.27	-0.50	-0.83	-1.28	0.03	0.01	0.00
Cotton	-0.89	-1.02	-1.35	-0.70	-0.81	-1.14	0.18	0.20	0.22
Tobacco	0.04	-0.13	-0.19	0.89	0.72	0.66	0.88	0.86	0.85
Olive Oil	-1.28	-2.00	-2.91	0.35	-0.29	-1.12	1.83	1.82	1.81

Table 11: Change of Farm Gate Prices in Italy (%)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	1.66	3.10	4.51	1.55	3.04	4.50	-0.14	-0.07	-0.01
Coarse Grains	2.01	2.92	3.83	1.95	2.89	3.84	-0.05	-0.02	0.01
Oilseeds	0.24	0.93	1.65	0.07	0.80	1.56	-0.18	-0.14	-0.10
Sugar	0.09	0.19	0.29	0.09	0.19	0.29	0.01	0.01	0.01
Milk	-0.06	-0.14	0.19	-0.07	-0.15	0.18	0.00	-0.01	-0.01
Beef	-0.01	-0.02	-0.02	-0.01	-0.02	-0.02	0.00	0.00	0.00
Pigmeat	-0.44	-0.86	-1.39	-0.42	-0.85	-1.40	0.03	0.01	0.00
Poultry	-0.53	-0.84	-1.27	-0.50	-0.83	-1.28	0.03	0.01	0.00
Cotton	-0.49	-0.57	-0.75	-0.39	-0.45	-0.63	0.10	0.11	0.12
Tobacco	0.07	-0.20	-0.30	1.40	1.13	1.03	1.38	1.35	1.33
Olive Oil	-0.91	-1.42	-2.08	0.25	-0.20	-0.80	1.30	1.30	1.29

Table 12: Change of Farm Gate Prices in Spain (%)

	Scenario 1			Scenario 2			Scenario 5		
	Production-effectiveness			Production-effectiveness			Production-effectiveness		
	initial	half	no	initial	half	no	initial	half	no
Wheat	1.66	3.10	4.51	1.55	3.04	4.50	-0.14	-0.07	-0.01
Coarse Grains	2.01	2.92	3.83	1.95	2.89	3.84	-0.05	-0.02	0.01
Oilseeds	0.24	0.94	1.67	0.07	0.81	1.58	-0.19	-0.15	-0.10
Sugar	0.09	0.19	0.29	0.09	0.19	0.29	0.01	0.01	0.01
Milk	-0.06	-0.14	0.19	-0.07	-0.15	0.18	0.00	-0.01	-0.01
Beef	-0.01	-0.02	-0.02	-0.01	-0.02	-0.02	0.00	0.00	0.00
Pigmeat	-0.44	-0.86	-1.39	-0.42	-0.85	-1.40	0.03	0.01	0.00
Poultry	-0.53	-0.84	-1.27	-0.50	-0.83	-1.28	0.03	0.01	0.00
Cotton	-0.57	-0.65	-0.86	-0.45	-0.52	-0.73	0.12	0.13	0.14
Tobacco	0.02	-0.07	-0.11	0.50	0.40	0.37	0.49	0.48	0.48
Olive Oil	-0.84	-1.31	-1.92	0.23	-0.19	-0.74	1.20	1.20	1.19

Table 13: Net trade effects* (in 1000 tonnes)

Country	Product	Base assumption			Scenario 1			Scenario 2			Scenario 5		
		Production-effectiveness			Production-effectiveness			Production-effectiveness			Production-effectiveness		
		initial	half	no	initial	half	no	initial	half	no	initial	half	no
Greece	Wheat	-249	-249	-249	407	454	504	253	371	503	-268	-258	-250
	Coarse Grains	-830	-830	-830	-1177	-1138	-1092	-1272	-1201	-1093	-931	-886	-831
	Rice	43	43	43	28	27	26	31	29	26	46	45	43
	Oilseeds	-100	-100	-100	-99	-99	-99	-99	-99	-99	-100	-100	-100
	Sugar	16	16	16	17	17	17	17	17	17	-3	6	16
	Milk	-290	-290	-290	-290	-290	-289	-290	-291	-289	-290	-290	-290
	Beef	-164	-164	-164	-176	-176	-177	-172	-175	-177	-161	-162	-164
	Pigmeat	-310	-310	-310	-304	-304	-304	-309	-307	-304	-314	-312	-310
	Poultry	-70	-70	-70	-67	-67	-67	-70	-68	-67	-72	-71	-70
	Cotton	291	291	291	291	291	289	269	265	261	267	265	263
	Tobacco	62	62	62	62	62	62	48	48	47	48	47	47
Olive Oil	206	206	206	202	200	197	205	202	199	209	208	207	
Italy	Wheat	-4448	-4448	-4448	-3950	-4858	-5783	-3603	-4672	-5785	-4097	-4272	-4450
	Coarse Grains	-417	-417	-417	-2783	-3508	-3825	-2514	-3367	-3826	-182	-300	-419
	Rice	706	706	706	654	622	588	666	628	588	717	711	705
	Oilseeds	-495	-495	-495	-482	-510	-539	-458	-492	-527	-470	-476	-482
	Sugar	-152	-152	-152	-151	-151	-151	-152	-151	-151	-153	-153	-153
	Milk	-1691	-1691	-1691	-1690	-1689	-2136	-1690	-1689	-2137	-1691	-1691	-1691
	Beef	-266	-266	-266	-389	-429	-477	-374	-421	-477	-253	-260	-266
	Pigmeat	-947	-947	-947	-941	-921	-894	-952	-928	-894	-958	-953	-948
	Poultry	75	75	75	67	77	90	62	74	90	70	72	75
	Cotton	-271	-271	-271	-272	-271	-271	-272	-271	-271	-271	-271	-271
	Tobacco	16	16	16	17	17	17	-1	-2	-2	-3	-3	-3
Olive Oil	-231	-231	-231	-232	-235	-238	-232	-236	-239	-232	-232	-232	
Spain	Wheat	-2792	-2792	-2792	-2942	-3242	-3530	-2757	-3141	-3531	-2619	-2705	-2793
	Coarse Grains	-3040	-3040	-3040	-5287	-5944	-6456	-4901	-5740	-6457	-2712	-2876	-3042
	Rice	329	329	329	202	194	186	206	196	186	333	331	329
	Oilseeds	-537	-537	-537	-534	-566	-597	-499	-541	-584	-500	-511	-521
	Sugar	-103	-103	-103	-100	-100	-100	-100	-100	-100	-104	-103	-103
	Milk	-51	-51	-51	-43	-43	-140	-44	-44	-141	-52	-52	-52
	Beef	12	12	12	-9	-54	-103	16	-40	-103	36	24	12
	Pigmeat	361	361	361	405	430	460	380	415	459	342	351	361

Table 13 – continued

Country	Product	Base assumption			Scenario 1			Scenario 2			Scenario 5		
		Production-effectiveness			Production-effectiveness			Production-effectiveness			Production-effectiveness		
		initial	half	no	initial	half	no	initial	half	no	initial	half	no
Spain	Poultry	-36	-36	-36	9	33	60	-5	24	60	-47	-42	-37
	Cotton	9	9	9	10	9	9	3	3	3	3	3	3
	Tobacco	-47	-47	-47	-47	-47	-47	-50	-50	-50	-50	-50	-50
	Olive Oil	482	482	482	485	487	489	477	478	481	474	474	475

* The net trade is calculated as the difference between the supply and the demand.

Table 14: Change of Welfare (in million US \$)

		Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5		
		Production-effectiveness			Production-effectiveness			Production-effectiveness			Production-effectiveness			Production-effectiveness		
		initial	half	no	initial	half	no	initial	half	no	initial	half	no	initial	half	no
Greece	Producer Surplus	-541	-423	-309	-1,052	-739	-433	-1,209	-804	-405	-1,319	-964	-615	-547	-336	-124
	Quota Owner Surplus	511	384	258	909	584	258	1,096	679	258	993	626	258	424	212	0
	Consumer Surplus	13	16	19	5	8	10	0	3	4	0	3	4	-9	-9	-9
	Budget effects*	-1	-2	-3	181	180	178	172	169	165	382	379	375	190	186	181
	Total Welfare*	-18	-25	-34	43	33	14	59	46	22	57	45	22	59	53	48
	Budget effects**	-1	-2	-3	12	11	9	3	1	-3	3	1	-3	21	18	13
	Total Welfare**	-18	-25	-24	-125	-136	-145	-109	-122	-136	-322	-334	-346	-110	-115	-121
Italy	Producer Surplus	-795	-61	344	-1,214	-312	229	-1,356	-366	245	-1,505	-601	-59	-353	-231	-112
	Quota Owner Surplus	1,014	392	38	1,250	509	38	1,368	568	38	1,250	509	38	231	115	0
	Consumer Surplus	59	68	69	41	49	50	29	36	35	30	36	35	-19	-19	-19
	Budget effects*	115	171	284	255	323	447	242	314	443	557	623	747	63	109	155
	Total Welfare*	393	570	735	332	569	763	283	551	761	331	567	761	-78	-26	24
	Budget effects**	115	171	284	104	171	296	90	162	292	101	168	292	-89	-43	3
	Total Welfare**	393	570	733	181	417	609	132	400	607	-124	112	304	-230	-178	-128
Spain	Producer Surplus	-725	-231	162	-1,067	-396	150	-1,239	-455	185	-1,437	-746	-184	-287	-146	-8
	Quota Owner Surplus	902	441	34	1,168	576	34	1,327	656	34	1,193	588	34	270	135	0
	Consumer Surplus	66	81	95	52	66	80	42	56	69	43	56	69	-15	-15	-15
	Budget effects*	-28	24	89	7	74	154	-15	60	149	368	436	519	-53	1	56
	Total Welfare*	215	315	380	160	320	418	115	317	437	166	334	437	-86	-25	33
	Budget effects**	-28	24	89	-44	22	103	-66	8	98	-53	15	98	-105	-51	4
	Total Welfare**	215	315	378	108	268	364	64	265	383	-255	-87	14	-138	-77	-19

*, ** see text p. 7