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Preference erosion effects on the agricultural sector of the EU's Mediterranean Partner Countries

Aikaterini Kavallari[1] and P. Michael Schmitz[1*]

Abstract

This paper analyses preference erosion effects on the agricultural sector of the EU's Mediterranean Partner Countries (MPCs) with the partial equilibrium multi-commodity multi-region world trade model AGRISIM. Supposing that the preferences to the MPCs granted by the EU remain as of 2001 then the effects are evident for high protected markets like beef in Turkey, milk and rice in Morocco and olive oil in the MPCs. Supposing a free trade area between the EU and the MPCs, then the impacts are high for beef, milk and sugar. The farmers' income decreases, but the consumers and the taxpayers benefit from lower prices and the overall welfare in all MPCs increases.

Key Words: *preference erosion, multilateral liberalisation, Mediterranean Partner Countries, AGRISIM*

JEL Classification: Q17, Q18, Q13

Introduction

Parallel to ongoing discussions on multilateral liberalisation, Preferential Trade Agreements (PTAs) have been widely spread in recent years. By July 2007 a total of 380 regional PTAs have been notified to the World Trade Organisation (WTO), with Free Trade Areas (FTAs) and partial scope PTAs accounting for 90 % and customs unions for nearly 10 % (WTO, 2007). The expansion of the PTAs can be seen as a possible reason for the standstill of the current WTO negotiations, since opening to a multilateral system results in erosion of preferences enjoyed under bilateralism.

The most significant PTAs within the Mediterranean basin are the Euro-Med Agreements and are among the EU and ten east and southern Mediterranean Countries. The Agreements were established in 1995, in the Summit of Barcelona and aim to form a Free Trade Area between the Mediterranean Partner Countries (MPCs) after 2010, which should be accompanied by economic and financial cooperation. Signatory countries of the Barcelona Declaration are the EU-15, Cyprus and Malta, which are already Member States of the EU, Egypt, Israel, Jordan, Lebanon, Morocco, Tunisia, the Palestinian Authorities and Turkey, while Libya is not yet a partner country but an observer (EU Commission, 2008). The Euro-Med Agreements have not evolved as wished and this is mainly attributed to the slow progress of the negotiations concerning the agricul-

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tural sector.

The Mediterranean countries have shown a strong interest in participating in the currently discussed multilateral trading system, as most of them are already members of the WTO or have applied for membership (WTO notifications, 2008). Garcia Álvarez-Coque (2006) notes that all the MPCs have moved towards implementing the Agreement on Agriculture and have committed themselves to reducing export subsidies, domestic support and import duties on agricultural products. Although they are intersected into different interest groups during the Doha negotiations, they all ask for a special treatment of their agricultural sector and they want to preserve at least up to a certain grade the preferential treatment they currently enjoy, fearing the effects of preference erosion (Garcia Álvarez-Coque, 2006).

Within this framework, objective of this paper is to discuss the issue of preference erosion and to analyse empirically the impacts of multilateral liberalisation on the agricultural markets of the MPCs. For this purpose the paper is organised in six sections. After the introduction follows the second section, where the preferential regime the MPCs enjoy under the Euro-Med Agreements is described. On the third section follows a literature review of relevant studies. On the fourth section is presented the empirical model which is used for this study, while the results are presented on the fifth part. Finally the paper closes with concluding remarks on the sixth and last section.

Trade preferences to Agricultural Commodities within the Euro-Med Agreements

An indication of the evolution of trade preferences in the Mediterranean basin granted by the involved countries in this agreement can be given by the value of the preference margin (VPM). Grethe et al. (2006) argue that the VPM of all agricultural commodities for all MPCs covered by the agreements of the mid-70s was about €130 million, whereas in 1995 the VPM was about €190 million (an increase of 48%) and after the Barcelona Agreement this reduced to about €165 million. According to the authors this negative change is attributed to the reduced EU MFN tariffs (Most Favourite Nation). They argue that once all Euro-Med Agreements have entered into force the VPM will reach €226 million.

Tables 1 and 2 present in detail the VPM from imports into the EU of selected agricultural commodities for the period 1998-2003. The calculations were done following Grethe and Tangermann (1998) i.e. it has been assumed that both the preferential and the non-preferential commodities are sold in the destination market (which is in this case the EU) at the same price and thus the value of the preference margin is the price difference between preferential and non-preferential exports multiplied by the quantity of the commodity each partner country exported into the EU. In most of the cases the MFN duties are the applied ones and thus the VPM is zero. The MPCs gain due to the preferential treatment only for their main export products such as fruits and vegetables. The size of the VPM for a given commodity differs significantly from country to country. This is mainly because of the high variation in exported quantities and not because of any variation in the preferential duty compared to the MFN one. The difference though between the MFN and the applied duty varies between 0.2 and 7 %. A comparison of the VPM of 2003 with that of 1999 shows clearly that the entry into force of the Barcelona Agreement has only slightly intensified the benefits for the MPCs. A poten-

Table 1. Value of Preference Margins resulting from the Euro-Mediterranean Association Agreements in '000 US $ (1999)[1]

Commodity \ Country (HS 1996)		*Morocco*	*Turkey*	*rest of Mediterranean Partner Countries*	*of which*							
					Algeria	*Egypt*	*Israel*	*Jordan*	*Lebanon*	*Libya*	*Syria*	*Tunisia*
0201	Meat of bovine animals	n.a[2]	0.00	0.00	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a
0203	Meat of swine	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
0207	Meat of the poultry	8.03	0.00	522.16	n.a	n.a	522.16	n.a	n.a	n.a	0.00	n.a
0401	Milk and cream, not concentrated	0.00	0.00	0.00	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a
0402	Milk and cream, concentrated	n.a	0.00	0.00	0.00	n.a	0.00	n.a	0.00	0.00	n.a	0.00
0702	Tomatoes	0.00	0.00	0.00	n.a	0.00	0.00	0.00	n.a	0.00	0.00	0.00
080510	Oranges	33168.58	0.00	16250.72	n.a	1135.16	10017.52	n.a	0.00	n.a	0.00	5098.04
080810	Apples	380.96	0.00	1.69	0.11	0.27	0.00	n.a	n.a	n.a	0.92	0.38
1001	Wheat and meslin	n.a	0.00	0.00	n.a	0.00	0.00	n.a	n.a	n.a	n.a	n.a
1003	Barley	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
1005	Maize (corn)	0.00	0.00	0.00	n.a	0.00	0.00	n.a	n.a	n.a	n.a	0.00
1006	Rice	n.a	0.00	0.00	n.a	0.00	0.00	0.00	0.00	0.00	n.a	n.a
1007	Grain sorghum	n.a	n.a	0.00	n.a	0.00	n.a	n.a	n.a	n.a	n.a	0.00
1008	Other cereals	0.00	0.00	0.00	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.00
1201	Soya beans	n.a	0.00	0.00	n.a	0.00	0.00	n.a	n.a	n.a	n.a	n.a
1204	Linseed	n.a	0.00	0.00	n.a	0.00	n.a	n.a	n.a	n.a	n.a	n.a
1206	Sunflower seeds	0.00	0.00	0.00	n.a	0.00	0.00	n.a	n.a	n.a	n.a	n.a
1207	Other oil seeds	0.00	0.00	0.00	n.a	0.00	0.00	0.00	0.00	n.a	0.00	n.a
1507	Soya-bean oil	65.85	n.a	0.93	n.a	n.a	n.a	n.a	0.93	n.a	n.a	n.a
1509	Olive oil	0.00	0.00	0.00	n.a	0.00	0.00	n.a	0.00	n.a	0.00	0.00
1512	Sunflower-seed, safflower or cotton-seed oil	n.a	0.00	0.00	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a
2401	Unmanufactured tobacco	0.00	0.00	0.00	0.00	n.a	n.a	n.a	0.00	n.a	0.00	0.00
5201	Cotton not carded or combed	0.00	0.00	0.00	n.a	0.00	0.00	n.a	n.a	n.a	0.00	0.00
170111	Cane sugar	n.a	n.a	0.00	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a
	Sum	33623.42	0.00	16775.50	0.11	1135.43	10539.68	0.00	0.93	0.00	0.92	5098.42

[1] for the period 1998-2003 import duties (into the EU) where reported only for 1999 and 2003, whereas for Libya only for 1999; [2] n.a= non-available import duty for this commodity; Source: own calculations based on reported import duties derived from TRAINS and bilateral trade flows derived from COMTRADE

Table 2. Value of Preference Margins resulting from the Euro-Mediterranean Association Agreements in '000 US $ (2003)[1]

Commodity \ Country (HS 1996)		*Morocco*	*Turkey*	*rest of Mediterranean Partner Countries*	*of which*							
					Algeria	*Egypt*	*Israel*	*Jordan*	*Lebanon*	*Libya*	*Syria*	*Tunisia*
0201	Meat of bovine animals	n.a[2]	n.a	0.00	0.00	n.a	0.00	n.a	n.a	n.a	0.00	n.a
0203	Meat of swine	0.00	n.a	0.00	n.a	n.a	0.00	n.a	0.00	n.a	n.a	n.a
0207	Meat of the poultry	n.a	111.79	0.00	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a
0401	Milk and cream, not concentrated	n.a	0.00	0.00	0.00	n.a	n.a	n.a	n.a	n.a	n.a	n.a
0402	Milk and cream, concentrated	n.a	0.00	0.00	0.00	n.a	0.00	n.a	n.a	n.a	n.a	n.a
0702	Tomatoes	58370.40	19387.20	2447.66	1.36	444.09	0.00	316.72	3.11	n.a	0.00	1682.38
080510	Oranges	48831.55	5780.60	30046.55	n.a	4725.44	18548.43	n.a	36.15	n.a	n.a	6736.53
080810	Apples	-0.03	343.39	-0.03	n.a	-0.02	0.00	n.a	n.a	n.a	-0.02	n.a
1001	Wheat and meslin	n.a	133.26	0.87	n.a	n.a	0.00	n.a	0.87	n.a	0.00	n.a
1003	Barley	n.a	0.00	0.00	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
1005	Maize (corn)	0.00	0.00	0.00	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a
1006	Rice	n.a	687.73	0.00	n.a	0.00	n.a	n.a	n.a	n.a	0.00	0.00
1007	Grain sorghum	n.a	n.a	0.00	n.a	0.00	n.a	n.a	n.a	n.a	n.a	n.a
1008	Other cereals	n.a	n.a	0.00	n.a	0.00	n.a	n.a	0.00	n.a	0.00	n.a
1201	Soya beans	n.a	n.a	0.00	n.a	n.a	0.00	n.a	n.a	n.a	n.a	n.a
1204	Linseed	0.00	0.00	0.00	n.a	0.00	n.a	n.a	n.a	n.a	n.a	n.a
1206	Sunflower seeds	n.a	0.00	0.00	n.a	0.00	0.00	n.a	n.a	n.a	0.00	n.a
1207	Other oil seeds	0.00	0.00	0.00	n.a	0.00	0.00	0.00	0.00	n.a	0.00	n.a
1507	Soya-bean oil	28.51	2.34	0.00	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
1509	Olive oil	0.00	0.00	0.00	n.a	0.00	0.00	n.a	0.00	n.a	0.00	0.00
1512	Sunflower-seed, safflower or cotton-seed oil	33.98	3.29	8.29	n.a	8.29	n.a	n.a	n.a	n.a	n.a	n.a
2401	Unmanufactured tobacco	n.a	0.00	0.00	n.a	0.00	n.a	n.a	0.00	n.a	0.00	0.00
5201	Cotton not carded or combed	0.00	0.00	0.00	n.a	0.00	0.00	n.a	n.a	n.a	0.00	0.00
170111	Cane sugar	n.a	0.00	0.00	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
	Sum	107264.41	26449.60	32503.34	1.36	5177.80	18548.43	316.72	40.13	0.00	-0.02	8418.91

[1] for the period 1998-2003 import duties (into the EU) where reported only for 1999 and 2003, whereas for Libya only for 1999; [2] n.a= non-available import duty for this commodity; Source: own calculations based on reported import duties derived from TRAINS and bilateral trade flows derived from COMTRADE

tial expansion of exports into the EU of those commodities where the VPM is already positive would result to significant gains for the MPCs.

Moving towards multilateralism is connected to preference erosion effects for the MPCs. Francois et al. (2006) explain that preference erosion effects arise from the reduction or elimination of tariffs on the non-preferential supplier and show that preference erosion is certainly beneficial for the third countries and not beneficial for the preferential supplier, especially if this country is less efficient than third countries. The effects for the preferential importer are not clearly positive or negative and certainly the magnitude of the effects depends on the initial granted preferences. If this is the case, then the elimination of preferences could be beneficial for small developing countries that supply major markets of developed countries. This argument could be relevant for the MPCs, which are at the moment preferential suppliers of the EU markets.

Existing empirical assessments

A number of ex-ante empirical studies analyse the impacts of future trade liberalisation between the EU and the non-EU Mediterranean countries. Table 3 gives an overview of relevant studies and their scope. Most of them are carried out with Computable General Equilibrium models (CGE) focusing only on one country, usually Turkey, Egypt, Tunisia or Morocco. A number of studies employing multi-regional, multi-commodity models use the Global Trade Analysis Project (GTAP) without modifying the model structure and the model closure or alternatively use the database of various GTAP versions. A few studies have been carried out with dynamic CGEs, while even fewer are the studies that analyse the impacts of trade liberalisation on the Mediterranean agricultural sector with partial equilibrium (PE) models.

The scenarios are related to tariff cuts between the examined Mediterranean country(ies) and the EU. Because the opening of the EU markets to the MPCs under the Euro-Med Agreements is a step-wise procedure, almost all the studies simulate scenarios that examine various extends of tariff reduction (usually 50 and 100 %). This is the case for example of Augier and Gasiorek (2003), Harrison et al. (1997), Hoekman (2001), Hosoe (2001), Rutherford et al. (1997) and of the studies using dynamic CGE models, whereas the liberalisation was either unilateral (from the side of the MPCs) or bilateral. Kuiper (2006) followed a different schema i.e. formulated first a base assumption, where the policy variables are adjusted so as to approximate the policy framework in the year that the results refer to and then simulated a full bilateral liberalisation between the examined MPCs and the EU, providing in this way the lower and upper bounds of the forthcoming liberalisation. A similar scheme is followed by Britz et al. (2006). In most of the CGE models the liberalisation is set in manufactures and services and not in the agricultural commodities. Agricultural markets are examined thoroughly only by the PE models, while in the CGE studies they are presented aggregated usually in one sector.

The results focus mainly on the whole economy of the non-EU countries. The authors generally agree that liberalisation will result in welfare gains for the EU, in increase of its exports to non-EU Mediterranean countries and in higher producer prices in the MPCs. The magnitude of the effects varies based on the importance of the liberalised sectors for the EU markets.

The existing studies give only narrow insights to the issue of preference erosion. In all studies apart from Kuiper (2006) and Britz et al. (2006) both the base year and the baseline scenario refer to a time period where the Euro-Med Agreements were not ratified by the MPCs. Hence preferences granted to MPCs were not captured and consequently trade liberalisation scenarios show trade creation and diversion effects that are not the result of preference erosion. Kuiper (2006) and Britz et al. (2006) discuss the effects from the view of the EU.

Table 3. Overview of ex-ante empirical studies on modelling agricultural trade policy liberalisation on the Mediterranean Basin with equilibrium models

Type of model	*Study*	*Scope of the study*
Computable General Equilibrium Models		
static	Augier and Gasiorek (2003)	Euro-Med Agreements
	Brown et al. (1997)	EU-Tunisia free trade area
	Chatti (2003)	EU-Tunisia free trade area
	Harrison et al. (1997)	EU-Turkey customs union
	Hoekman (2001)	Egypt's trade liberalisation
	Konan and Maskus (1997; 2000)	Egypt's trade liberalisation + fiscal policies
	Minot et al. (2007)	Tunisia's and Syria's trade liberalisation
	Ravallion and Lokshin (2004)	Moroccan trade liberalisation
	Rutherford et al. (1997)	EU-Morocco free trade area
- GTAP	Alessandri (2000)	Euro-Med Agreements
	Dennis (2006)	Euro-Med Agreements/GAFTA
	Diao and Yeldan (2001)	Euro-Med Agreements
	Elbehri and Hertel (2004)	EU-Morocco free trade area
	Hosoe (2001)	Jordan trade liberalisation
	Kuiper (2006)	Euro-Med Agreements on Morocco and Tunisia
dynamic	Chemingui and Dessus (2001)	EU-Tunisia trade liberalisation
	Feraboli et al. (2003)	EU-Jordan trade liberalisation
	Löfgren et al. (2001)	Moroccan trade liberalisation
Partial Equilibrium Models		
static	Britz et al. (2006)	Euro-Med trade liberalisation
	Grethe (2003)]	EU-Turkey customs union
spatial	M´Barek (2002)	Euro-Med Agreements on Morocco and Tunisia

Source: own compilation

Overview of the trade model AGRISIM

The empirical analysis has been undertaken using the partial equilibrium multi commodity, multi region world trade model AGRISIM. It is a synthetic simulation model, comparative static and deterministic in nature, with non-linear, iso-elastic demand and supply functions. The regions are connected with each other with a market clearing mechanism, whereas the world market price that yields from this mechanism is fed into the domestic markets through the domestic prices. The net trade summed from all regions, which is given by the difference between supply and demand, is fed again to the

world market clearing mechanism, while the commodities are treated as homogenous. Policy interventions are considered as changes in nominal protection rates, price transmission elasticities, minimum producer prices, production quotas and subsidies. 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).

Time series data of volumes of production, commodity balances and population dating from 1975 to 2001 are derived from FAOSTAT, whereas time series from 1986 to 2001 containing information on trade policies are taken from the PSE and CSE database of the OECD. For countries and/or commodities not included in the PSE databases other sources are used. Ad-valorem applied tariffs are derived from TRAINS. From the same source are taken – when existing – specific tariffs, compound tariffs, mixed tariffs and technical tariffs that are first converted to ad-valorem equivalents and then fed into the model, whereas export subsidies from 1995 to 2001 are taken from the WTO secretariat. The elasticities were taken from SWOPSIM and regarding the Central and East European Countries from the CEEC-ASIM model developed at IAMO. After the recent updates and extensions of the model additionally have been used the databases of FAPRI and the USDA. The supply elasticities (own and cross price) for oranges, apples and tomatoes for the Mediterranean Countries are taken from Grethe (2003) and M´Barek (2002).

For the simulations a 17-region, 15-commodities aggregation scheme has been followed. Table 4 shows the regional aggregation and the commodity composition.

Table 4. Aggregation scheme of the AGRISIM Database for the simulations

Regions		Products	
GRE	Greece	APPL	Apples
ITA	Italy	ORAN	Oranges
ESP	Spain	TOMA	Tomatoes
E12	Rest of EU-15	OLIO	Olive Oil
MOR	Morocco	COTT	Cotton Lint
TUR	Turkey	TOBA	Tobacco
MPC	Rest of MPC	WHEA	Wheat
CEC	New Member States of the EU (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia)	COAR	Coarse grains (barley, maize, triticale, oats, rye, sorghum, other cereals)
BUR	Bulgaria and Romania	RICE	Rice
RUA	Russia and Ukraine	SUGA	Sugar
ANZ	Australia and New Zealand	OILS	Oilseeds
MEX	Mexico	MILK	Milk
USA	United States	BEEF	Beef and Veal
BRA	Brazil	PORK	Pig meat
CHI	China	POUL	Poultry meat
ROE	Canada, Iceland, Japan, Norway, South Korea, Switzerland		
ROW	Rest of World		

Source: own compilation

Because base year of the model is 2001 and in order to capture preference erosion effects, a baseline scenario (BA) was necessary, where the EU agricultural policy parameters are adjusted based on the recent CAP reforms since changes in the domestic policy of the EU are reflected in the extra-EU trade with its partner countries. In detail, in this scenario the reforms under Agenda 2000 for the years 2002 and 2003 are included by decreasing the direct payments for oilseeds and by increasing those for beef. Additionally the EU east enlargement, the Luxembourg Agreement and the reform of the CAP for the Mediterranean commodities of 2004 (cotton, olive oil and tobacco) are simulated. For the Luxembourg Agreement the option of full decoupling is chosen, while the direct subsidies for the tobacco market are fully decoupled and reduced by 50 %, for cotton they are decoupled by 65 % and for olive oil by 60 %. The reform of the sugar sector in the EU, which followed in 2006, and the reform of the tomato market (in 2007) have not been taken into account.

In the first scenario (SC1), the forthcoming FTA with the EU is supposed to be fully implemented. It is assumed that the price level within the MPCs is adjusted to the EU one, since the EU is a large country when compared to the MPCs. This is modelled by setting the Nominal Protection's Rate (NPR) of the MPCs at the level of the EU one. In a second scenario (SC2) a full multilateral liberalisation has been simulated.

By comparing the results of SC2 with the baseline scenario and with SC1 the lower and upper limits of possible preference erosion effects are revealed for the MPCs, which are due to the different levels of the initial granted preferences.

Model results

Commodity balances and net trade effects

Generally a decline of the supply and small adjustments of the demand are observed. Table 5 and 6 present in detail the simulation results.

In detail, in Morocco deviations of SC2 from BA reveal a decrease of the cereals supply by about 4%, decline of the milk production by about 14% and decrease of the olive oil production by about 10%. The highest reduction is for poultry meat and apples, where the production is reduced by about 38% and 26% respectively. On the contrary, the supply of tomatoes, oranges and cotton increases by about 7%, 5% and 10% respectively. The deviations of SC2 from SC1 are milder and of the same direction. Only for cereals an increase of the production by about 4 percentage points is observed.

In Turkey the results are of a small magnitude. When comparing the results of SC2 with the baseline scenario, then the highest reduction is observed for beef (about 14%). For Mediterranean commodities there is a slight increase of the supply of tomatoes and of oranges by about 7% each, while the olive oil supply declines by about 5%. The upper bounds (deviation of SC2 from SC1) are higher regarding beef and milk supply (decrease of supply by about 20% in each market).

In the rest of MPCs the deviations of SC2 from the BA are high for supply of tomatoes, olive oil and milk (decrease of 39%, 11% and 8% respectively). Again the deviations of SC2 from SC1 are milder apart from beef and milk, where the decline of the supply is as in Turkey (about -20% in each market).

The adjustments on the demand are also smooth. The highest deviations of SC2 compared to BA are observed in the Moroccan apple market (increase of 19%), the

Turkish

Table 5. Simulation results: changes from BA in %

Commo-dity	Supply			Demand			Farm gate prices			Border prices		
	MOR	TUR	MPC	MOR	TUR	MPC	MOR	TUR	MPC	MOR	TUR	MPC
WHEA	-4	1	-3	5	-1	2	-25	3	-9	-3	-4	-3
COAR	-7	-6	3	0	7	0	-1	-17	-1	-1	-1	-1
RICE	-10	1	1	5	-1	0	-52	8	4	2	8	4
OILS	0	-3	0	0	2	-1	0	-19	1	0	1	1
SUGA	1	-1	2	-1	1	-2	9	-11	27	9	14	29
MILK	-14	3	-8	0	0	6	-51	1	-16	5	16	5
BEEF	5	-14	1	-4	24	-3	16	-52	7	16	45	15
PORK	3	0	2	-2	0	-2	11	6	8	11	6	10
POUL	-38	-4	-6	0	-5	0	-49	-12	-14	7	5	3
COTT	10	1	2	0	-1	-1	0	4	2	2	4	2
TOBA	-1	-1	0	1	1	0	-7	-9	4	9	14	8
OLIO	-11	-5	-11	6	3	5	-33	-20	-28	4	6	4
APPL	-26	5	-1	19	-3	1	-31	6	-2	6	6	5
ORAN	7	7	2	-4	-3	-1	8	8	2	8	8	9
TOMA	5	8	-39	-1	-2	13	3	4	-25	3	4	3

Source: own calculations with AGRISIM

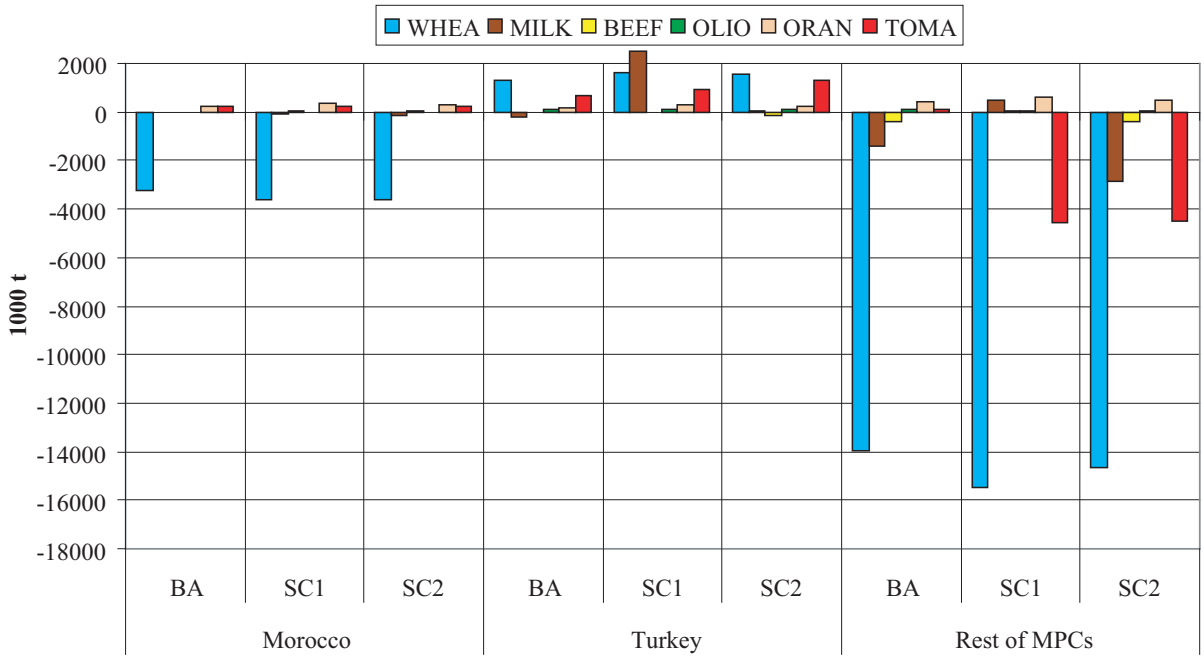
Table 6. Simualation results: changes from SC1 in %

Commo-dity	Supply			Demand			Farm gate prices			Border prices		
	MOR	TUR	MPC	MOR	TUR	MPC	MOR	TUR	MPC	MOR	TUR	MPC
WHEA	3	-1	0	1	1	-2	-4	-7	-5	-3	-4	-4
COAR	4	6	4	2	3	3	-9	-8	-9	-1	-1	-2
RICE	-4	-4	-5	2	2	2	-18	-32	-36	2	8	4
OILS	1	0	0	0	0	0	0	1	0	0	1	0
SUGA	-5	-4	-3	5	4	3	-66	-48	-44	9	14	30
MILK	-9	-22	-21	0	5	12	-25	-36	-43	5	17	6
BEEF	-17	-10	-19	20	18	19	-145	-36	-135	17	47	16
PORK	-3	0	-2	2	0	2	-12	-16	-13	11	7	10
POUL	-15	-15	-15	0	-10	-2	-20	-36	-38	7	6	4
COTT	3	2	2	-1	-1	-1	2	4	2	2	4	2
TOBA	1	1	1	-1	-1	-1	7	11	7	9	14	7
OLIO	0	0	0	0	0	0	0	0	0	0	1	0
APPL	0	0	-1	0	0	1	0	0	-2	6	6	5
ORAN	-4	-4	-4	2	2	2	-6	-5	-5	9	9	10
TOMA	1	1	0	0	0	0	0	1	0	0	1	0

Source: own calculations with AGRISIM

beef market (increase of 24%) and the tomato market in the rest of MPCs (increase of demand by about 13%). For the rest of the markets the demand effects are very small. Deviations of SC2 from SC1 are evident in the beef market. In all MPCs the demand of beef increases by about 20% (instead of decrease by about 4%). Contrasting are also the effects on the Moroccan apple market, where the demand remains in the level of SC1.

Figure 1 illustrates of the net trade effects on selected markets. Generally due to liberalisation the MPCs increase slightly the imports of commodities where they are already net importers and at the same they are able to increase slightly the exports of Mediterranean commodities, as for example oranges or tomatoes. Deviations between SC1 and SC2 are distinguishable only in the market of milk in Turkey and in the rest of MPCs



[1] Positive values in the axis Y refer to net exports, while negative values to net imports

Source: own compilation based on AGRISIM simulations

Figure 1. Net trade effects on the MPCs [1]

A striking exception to this general trend is this of the tomato market in the rest of MPCs. Not only is a reduction of the exports revealed but also a change of the trade status. From net exporter of about 0.14 million t the region becomes into net importer of about 4.5 million t due to a full liberalisation (SC2). For olive oil, the development of the trade balance is not in favour of the MPCs, although the deviations are quite small. The exports due to liberalisation (SC2) are decreased by about 9,000 t in Turkey and by about 66,000 t in the rest of MPCs. In Morocco the net trade status changes and due to full multilateral liberalisation and from net exporter of 2,000 t the country becomes into net importer of 8,000 t. Further changes of the trade status are observed in Turkey, where the net trade status of the beef market changes and from net export of almost

1,000 t Turkey becomes into net importer of about 122,000 t in SC2.

Prices

The changes of the NPR (Table 7) are the driving force for price adjustments. The effects vary between the single markets and the countries-regions because of the different initial protection. The deviations of SC2 both from the baseline scenario and from SC1 are the same for those markets that are either completely liberalised in the EU or where the EU's protection is very low and they differ for highly protective markets within the EU such as sugar, milk and meat products. For those markets lower and upper bounds are formed, which vary from country to country depending on the initial rate of protection.

Table 7. Net protection's rate in the MPCs markets, in %

Commodity	Morocco			Turkey			Rest of MPCs		
	Base Year	SC1	SC2	Base Year	SC1	SC2	Base Year	SC1	SC2
WHEA	29	2	0	-7	2	0	7	2	0
COAR	0	8	0	19	8	0	0	8	0
RICE	111	40	0	0	40	0	0	40	0
OILS	0	0	0	25	0	0	0	0	0
SUGA	0	75	0	27	75	0	2	75	0
MILK	115	60	0	16	60	0	26	60	0
BEEF	0	164	0	207	164	0	8	164	0
PORK	0	23	0	0	23	0	2	23	0
POUL	109	49	0	19	49	0	20	49	0
COTT	3	0	0	0	0	0	0	0	0
TOBA	18	0	0	25	0	0	4	0	0
OLIO	55	0	0	31	0	0	43	0	0
APPL	55	7	0	0	7	0	7	7	0
ORAN	0	15	0	0	15	0	7	15	0
TOMA	0	0	0	0	0	0	37	0	0

Source: own calculations with AGRISIM

In detail, multilateral liberalisation results in Morocco in increase of the beef farm gate prices of about 16 percentage points when compared to BA and decrease of about 145% when compared to SC1. In the rest of MPCs the respective deviations are about +7% and to -135%, while in Turkey -52% and -36%, as the Turkish beef market is highly protected. For the sugar market, SC2 compared to BA leads to an increase of the farm gate prices of about 9% and 27% in Morocco and the rest of MPCs respectively and a decrease of about 11% in Turkey. SC2 compared to SC1 results in a decrease of the sugar farm gate prices of about 66% in Morocco, 48% in Turkey and 44% in the rest of MPCs. Liberalisation without the assumptions of SC1 (deviation from BA) results in decrease of 33%, 20% and 28% of the olive oil farm gate prices in Morocco, Turkey and the rest of MPCs respectively. If the FTA with the EU is fully into force, then no further decrease of the farm gate prices should be expected.

The adjustments of the border prices are of lower magnitude than those of the farm

gate prices. The effects are of the same magnitude when looking the deviations of SC2 both from BA and from SC1. Overall the border prices increase being the highest for livestock commodities and mainly beef meat and for sugar.

The changes of the farmers' income are analogous to the changes of the farm gate prices and the supply. General conclusions on the development of the income are difficult to be made because the effects on the single markets vary between the MPCs.

Of interest for the producers of the MPCs are certainly the developments on the markets of olive oil, oranges and tomatoes, where they are mostly specialised. When compared to BA, the income of tomato and orange farmers due to liberalisation increases by about 8% and 15% in Morocco and in Turkey respectively. In the rest of MPCs the income of the orange farmers increases by 4% and this of tomato farmers decreases by merely 55%. The olive oil farmers will suffer a decrease of their income by about 40%, 25% and 35% in Morocco, Turkey and the rest of MPCs respectively.

When compared to SC1, the effects of liberalisation are much lower. They seem to be effective only for the orange producers who will see a decrease of their income by about 10 percentage points respectively.

For the rest of the commodities, high income deviations of SC2 from BA are observed in Morocco regarding the income of milk producers (reduction of about 58%) and of poultry meat producers (reduction of about 68%) and in Turkey regarding the income of beef producers (-59%).

On the other side, the deviations of SC2 from SC1 will affect the most the beef producers in Morocco and in the rest of MPCs (decrease of about 200% and 180% respectively), of sugar farmers throughout the MPCs (-50%, -53% and -74% in rest of MPCs, Turkey and Morocco respectively) and of milk producers again throughout the MPCs (decrease of about 30%, 65% and 67% in Morocco, rest of MPCs and Turkey respectively).

Budgetary, Allocative and Welfare effects

The budget effects are attributed to changes of the customs duties which result from changes in the net traded quantities and the prices as already discussed.

Opening of the trade, results in decrease of the revenue from the import tariffs but also to lower expenditure for export subsidies. This is the reason why the overall change of budget is negative in Morocco and positive in Turkey when compared to the BA. In the rest of MPCs the deviations of the budget effects from the baseline scenario are attributed to changes of the customs duties for tomatoes which are in turn due to changes of the net trade status.

The distribution of the resources is favour of the consumers, shown in detail in Table 8. When the preferential scheme between the EU and the MPCs is partial (deviations of liberalisation scenario from BA), then the consumer surplus increases by about US$1, US$0.5 and US$3 billion in Morocco, in Turkey and in the rest of MPCs respectively. On the other side the producers are worse off and the producer surplus decreases by about US$0.8, US$0.3 and US$2.6 billion in the three regions respectively.

The effects are more profound when the preferences between the EU and the MPCs are the deepest (deviation of SC2 from SC1) and this because the EU still maintains high protection for particular markets as the NPR reveals.

The positive welfare effects imply that preference erosion effects are beneficial for

the MPCs and can be explained by the fact that the MPCs are low cost suppliers to the

Table 8. Allocative and welfare effects on the MPCs (US$ million)

	Morocco		Turkey		Rest of MPCs	
	deviation from BA	deviation from SC1	deviation from BA	deviation from SC1	deviation from BA	deviation from SC1
Producer surplus	-859	-981	-387	-1719	-2625	-7620
Quota owner surplus	0	0	0	0	0	0
Consumer surplus	1028	1000	552	1554	3024	8500
Budget	-162	63	37	429	-329	3
total	7	82	202	264	69	883

Source: own calculations with AGRISIM

EU and by the fact that they are net importers of cereals, sugar and livestock commodities.

Concluding remarks

Preference erosion effects are already an updated concern for many developing countries that enjoy preferences granted by developed countries within the ongoing discussions on multilateralism. In this paper preference erosion effects that arise for the EU's preferred Mediterranean Partner Countries have been examined with the help of the partial equilibrium model AGRISIM with a numerical modelling of complete multilateral liberalisation. Lower and upper bounds of preference erosion effects have been revealed by comparing the simulation results low and deep level of preferences respectively.

The results indicate that with low integration, liberalisation leads to losses for the producers in terms of reduced farm gate prices and level of supply which are particularly distinguishable for highly protective markets. The preference erosion effects that will follow when the preferences between the EU and the MPCs are deep (i.e. when a free trade area exists between the EU and the MPCs) are of lower magnitude and there the reduction of the supply and of the farm gate prices is mostly on livestock commodities and sugar. Driving force for the changes is the high NPR within the EU and thus the high price level in the union between the EU and the MPCs.

The overall welfare effects are positive revealing that the producers could be compensated by a better allocation's policy. It can be thus concluded that preference erosion effects are positive since multilateral liberalisation of the agricultural sector does not affect negative the MPCs. On the contrary liberalisation is the policy that the MPCs should look for.

Openness to trade is alone not a sufficient condition to provide gains from trade. Other factors could play an important role as well, that have not been considered in this paper, as for example geographical variables or institutional quality. Certainly it would be interesting to examine whether institutional reforms are needed in the MPCs so as to support an efficient market structure and a well functioning allocation of resources among the producers and the consumers within each country.

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