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Which road to liberalization in the Mediterranean?

Analyzing different regional trade liberalization scenarios for Morocco and Tunisia

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Abstract

The Euro-Mediterranean Partnership says to aim for economic growth and stability at the Southern borders of the EU, but its actual contents reflect narrow economic interests of specific EU member states. These narrow economic interests are incoherent with the interests of the EU as a whole in stability at its Southern borders. Maintaining and possibly increasing employment is of paramount importance for Mediterranean partner countries. Current agreements will result in the opposite. Subjecting highly protected industries to competition from the EU will reduce employment, while maintaining of barriers on agricultural trade limits employment in horticultural production. This paper uses a multi-regional general equilibrium model to search for a liberalization of Mediterranean trade that supports stability at the Southern borders of the EU. It contributes a focus on both employment and on diverging interests between Northern and Southern EU member states to existing quantitative analyses.

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1. Introduction

After the Barcelona meeting in 1995, the EU and its Mediterranean Partner Countries (MPCs) engaged into an ambitious venture of increased economic, political and social cooperation, consisting of Euro-Mediterranean Association Agreements and financial cooperation. Ambitions in terms of economic cooperation were especially high, aiming at a Free Trade Area by 2010. This should create an area of shared prosperity, fostering peace and stability at the turbulent Southern borders of the EU. So far association agreements have been concluded with Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, the Palestinian Authority, Syria and Tunisia. In March 2004 Libya has been invited by the European Commission to actively participate in the Barcelona Process. Reciprocity is an important feature of the association agreements. This contrasts with earlier agreements from the 1970s, consisting of unilateral elimination of European barriers to Mediterranean industrial goods.

The economic interests of the EU and MPCs in the agreements are wide apart. The MPCs are of little economic interest to the EU. Imports from the MPCs account for only 2 percent of EU imports, while exports to the MPCs account for only 3 percent of total EU exports. The major part of EU imports from the MPCs consists of oil, followed at a distance by Mediterranean horticultural products. Given the limited size of the agrarian trade flows, the European Commission does not consider the MPCs a threat to European farmers (Garcia-Alvarez-Coque, 2002).

The very limited economic interests of the EU contrast with the clear economic interests of the MPCs: fifty percent of their imports and exports is with the EU, being their largest trade partner. The MPCs have a comparative advantage in typical Mediterranean products like fresh fruit and vegetables, citrus, tomatoes and olive oil. Improved access to European agricultural markets could provide a positive stimulus to their economies. Such a positive stimulus is badly needed. Economic growth in the MPCS is lagging behind the growth rates

attained in the rest of the world, while the MPCs combine a young population with unemployment rates between fifteen and thirty percent.

Given the limited economic interests in the MPCs the association agreements *de facto* mainly serve the EU's political interests in stable Southern borders. This mainly political interest in the countries at the Southern border of the Mediterranean can also be derived from references to the Barcelona process in the security strategy launched by Solana (2003). A second indication of the political interests in the Mediterranean is a recent speech on the link between the European Neighborhood Policy and the Euro-Mediterranean Partnership (Wallström[1], 2005). Looking at the association agreements from such a political interest in stability and prosperity at the EU's Southern borders, there appears a contradiction between the political interests of the EU as a whole and sectoral or regional economic interests.

The EU has already unilaterally removed its protection on manufactured goods in the 1970s, while it maintains its high levels of protection in agriculture. The association agreements are thus plainly an opening of the MPCS for the industrial imports from the EU. Since the MPCS industrial producers are not internationally competitive, implementation of the agreements will decimate MPCS industry. The resulting reduction in already limited employment will not contribute to stability in the MPCS. Tunisia, leading the region in terms of economic reforms, therefore postponed its reduction of industrial protection despite implementing far-reaching reforms in other parts of its economy.

Next to a loss of employment in the industrial sector, implementation of the agreements will result in a decrease in tariff revenues. Government expenditures in the MPCS are high due to a bloated public sector: the share of non-military public employment in total employment is twice the world average (Bulmer, 2000). In addition producers of grain, meat

[1] The speech delivered March 14 in Cairo " The European Neighbourhood Policy and the Euro-Mediterranean partnership" can be downloaded from http://europa.eu.int/.

and milk are subsidized to reduce dependence on imports, while the impact on consumers is limited through subsidies on staple foods. Reduction of government revenues through trade liberalization would thus have a direct impact on employment and consumer prices, with all its consequences in terms of social unrest.

The current agreements thus conflict with the political interest of the EU in attaining stability at its Southern borders, by having detailed schemes for abolishing protection on manufactured goods, but not so for agricultural and horticultural products. From the perspective of stability at the Southern borders, and given the comparative advantage of the MPCs in (labor-intensive) horticulture, the trade agreements should aim at relaxing the complex EU trade barriers for Mediterranean food products. Current EU concessions in this area are marginal, since MPCS producers compete directly with producers from Southern EU member states. Although concessions would have a marginal impact on the EU as a whole, relaxing restrictions on Mediterranean horticultural products would be noticeable in Southern EU member states. The current trade agreements reflect these regional interests.

European trade barriers, however, are only one of the factors limiting economic growth in the MPCs. Next to a bloated public sector and market interventions, governments also plays a direct role in MPC economies through inefficient state enterprises, for example accounting for 30 percent of GDP in Egypt and Tunisia. The region furthermore belongs to the most protected in the world, and the competitiveness of the private sector is limited by this high trade protection. In addition, there is an inflow of foreign exchange in the MPCS through oil revenues and remittances. This inflow of foreign exchange stimulates domestic demand for services and causes an appreciation of the exchange rate by increasing demand for imports, thus hampering exports. As a result MPC economies are oriented towards non-trade sectors.

Trade protection distorts the structure of the economy while creating interests in maintaining protection that hamper reform. An example is the industrial sector in the MPCs.

Access to the European markets has not led to a competitive sector, because continuing MPCS trade barriers did not provide an incentive to restructure industries. A comparable scenario would be possible with unconditional and unilateral reduction of European trade barriers for horticultural products. The complexity of the current protection implies that producers have invested in information and contacts to be able to export to the EU, and thus have an interest in maintaining the current protection structure. If the MPCS retain their barriers to imports from the EU, there are no incentives for a restructuring of agricultural production.

Given the limited economic interest of the MPCS for the EU as a whole, there is room to support necessary reforms in the MPCS through careful sequencing of liberalization. The sequence of liberalization should aim at minimizing social unrest, if only because of the security interests of the EU. The aim of this study is to search for a road to liberalization of the trade in the Mediterranean that supports stability at the Southern borders of the EU. It aims at identifying a scenario in which trade reforms are sequenced such that a reduction in trade protection is accompanied by the creation of new opportunities for sectors in which the MPCS have a comparative advantage and that absorb a lot of labor.

[insert short justification of the country grouping used in the model]

[insert here highlights from model results]

The study is structured as follows. The considerations above provide the rational for the country and sector aggregation used in this study. Section 1 discusses the applied methodology, in terms of aggregation and in terms of model structure, relating it to existing models aimed at analyzing the association agreements. Section 2 presents an analysis of the impact of the Association Agreements, first looking at the pattern in the agreements followed by an analysis of their impact on Morocco and Tunisia. Section 3 presents an alternative

liberalization scenario based on a search to maintain employment and boost economic growth. Section 4 concludes.

1. Methodology

The issue at stake in this paper is to identify a different scenario for trade liberalization in the Mediterranean that takes economic and political objectives into account. This poses a set of requirements on the applied methodology. Kuiper (2004) provides a review of existing general equilibrium analyses of the association agreements in the light of these requirements. Here we will focus on the main implications of this review for the modeling exercise in this paper.

In order to address diverging economic interests among EU member states a multi-regional model is required. Similarly, in order to address the prospects of south-south integration to balance the hub-and-spoke nature of the bilateral agreements between the EU and MPCs a multi-regional model is needed. Most existing studies, however, employ relatively standard single country models of MPCs. Version 6 of the GTAP database includes Morocco and Tunisia as separate countries, as well as allowing differentiation of Southern and Northern EU members. Of the other MPCs Algeria, Egypt and Libya are grouped as the rest of North Africa. Remaining MPCs (Israel, Jordan, Lebanon, the Palestinian Authority and Syria) are part of larger aggregate region for the Middle East which also includes countries that are not part of the Barcelona Process. Use of the GTAP database thus allows construction of a multi-regional model with a focus on Morocco and Tunisia and an aggregate representation of the effects on North African MPCs.

Use of the GTAP database allows us to work with a multi-regional model, but it does not allow a detailed analysis of the myriad of restrictions on horticultural trade, like for example seasonal import restrictions for specific crops. While being restricted in terms of sectoral

detail, an economy-wide analysis possible with the GTAP data does allow an analysis of trade-offs between agricultural and non-agricultural sectors and the employment effects of the agreements. The current association agreements are most detailed in terms of lowering restrictions on trade in manufacturers by the MPCs, and we thus feel that a more aggregated but economy-wide perspective on the association agreements in the context of a multi-regional model is warranted.

The aim of this study is to search for a liberalization scenario which accounts for the employment effects of trade liberalization as well as for the need for domestic reform. Based on the labor-intensive character of horticultural crops and the comparative advantage of MPCs in this sector, we expect that liberalization of agricultural trade may create employment. The employment-effect of a liberalization on agriculture depends possibilities for substitution between different types of agricultural activities and between labor and other inputs. Furthermore, the ease with which labor can shift between agricultural and non-agricultural sectors will determine to what extent reductions in manufacturing industries can be absorbed by agricultural sectors. To capture these aspects of trade liberalization we use the GTAPEM model which differs from the standard GTAP model in (i) more detailed crop-specificity of land through a nested 3-level CET for land allocation; (ii) substitutability of factors and intermediates; (iii) segmented labor and capital markets (Huang et al., 2004). To capture the importance of employment we use a unemployment closure. We furthermore include tariff replacement through a consumption tax.

The aggregation of countries in this study is based on the analyzing the diverging interests between Northern and Mediterranean EU member states which are two separate regions in the model. We furthermore distinguish EU accession countries in order to account for the recent accession of the new EU member states as well as the upcoming accession of Bulgaria and Romania. MPCs are represented by Morocco, Tunisia and the rest of North Africa aggregate.

we furthermore distinguish the rest of the Middle East which includes some of the MPCs as well as other countries in the middle east to allow an analysis of the impact of the accession agreements on South-South trade. Finally, to allow future analyses of the impact of trade agreements between the MPCs and the USA we keep the USA separate from the rest of the World.

The sector aggregation is based on an analysis of the scope of the current association agreements and the expected employment impacts. We linked data from Association Agreements at HS6 level to factors shares from GTAP to determine an appropriate grouping of sectors. Vegetables and fruits are kept as a separate sector because of the comparative advantage of the MPCs in horticultural products, spices and other crops are kept separate because of different patterns in proposed elimintion of protection. Tariff reductions in the manufacturing do not show much variance across sectors, apart from different types of equipment sectors which are thus kept as a separate sector. The remaining sectors are grouped according to the labor share in production.

After aggregating regions and sectors we arrive at a model with 9 regions and 17 sectors (see annex 1 for the aggregations schemes). We run a pre-simulation experiment to eliminate trade barriers within the enlarged EU (*i.e.* between Northern, Mediterranean and Accession EU countries) and to harmonize differences in trade barriers of Morocco and Tunisia *vis a vie* the three EU regions.

2. The impact of the association agreements

The Association Agreements contain detailed schemes for lowering import tariffs on manufactured goods by Morocco and Tunisia over a period of up to twelve years. Schemes for elimination of trade barriers vary form immediate elimination of tariffs, stepwise elimination over a short period (three to five years), stepwise elimination over a long period

(up to twelve years or during part of a twelve year period), elimination of tariffs after twelve years and products that are exempted from the tariff reductions. Specifications for reductions to be applied by the EU are much simpler, immediate elimination of all protection except for a maintenance of protection on the agricultural component of imported goods. This reflects the lowering of trade barriers on manufactured imports from MPCs in the past, implying very limited number of remaining barriers.

Figure 1a and 1b depict average import-tariffs by sector for Morocco and Tunisia and tariffs levied on imports from the EU. Both countries have significant protection levels across the board. Comparing the pattern of protection between Morocco and Tunisia we find for agriculture that Tunisia has a stronger protection than Morocco. For non-agricultural sectors we find the reverse, with higher import tariffs in Morocco than in Tunisia.

Each of the aggregated sectors used in the GTAP model can be linked to detailed (6 digit) liberalization information in the Association Agreements of Morocco and Tunisia. We focus in this study on the information contained in the Annexes 2 through 6 of the agreements detailing the liberalization of the industrial goods. We then computed the share of tariff lines (at 6 digit level) subjected to liberalization for each sector. Again comparing Tunisia and Morocco the generic character of the Association Agreements becomes apparent. In both cases, for example, there is a complete liberalization of industrial sectors. Another interesting feature working with detailed information from the agreements is that some liberalization is occurring in agricultural sectors, although we limit our analysis to the liberalization in industrial goods. Some of the tariff lines mentioned in the annexes on industrial liberalization are thus contained in agricultural GTAP sectors.

To analyze the impact of the Association Agreements we need to compute changes in tariffs as foreseen by the agreements. Apart from a clause on maintaining the protection on agricultural components of manufactured goods, the Association Agreements state an

immediate elimination of barriers on imports from Morocco and Tunisia. Since we lack information on the agricultural component of manufactured goods we implement this as a straightforward elimination of the remaining (low) barriers on imports in manufactured goods from Morocco and Tunisia.

Computing the tariff reductions by Morocco and Tunisia is more complicated since for these detailed schemes different time-paths are foreseen. In the current analysis we ignore differences in speed of liberalization. We thus develop a scenario which removes all trade barriers on imports from the EU for all industrial tariff lines mentioned in Annex 3 through 6 of the Association Agreements (see annex 2 for the procedure followed in computing the percentages changes in tariffs). Table 1 presents the tariff reductions derived from the association agreements.

The patterns in tariff reductions from the association agreements in figure 1a and b show a remarkably similar pattern for Morocco and Tunisia. This reflects the generic structure of the Association Agreements. Despite this generic structure the percentage changes in tariffs in table 1 show significant differences between the tariff changes of Morocco and Tunisia. These differences are due to computing the tariff reductions at the six digit level and using trade flows to arrive at a tariff reduction at the GTAP sector level. Basing tariff reductions at the detailed information that recently became available through MacMAp thus results in differential tariff reductions despite referring to a similar Association Agreement.

Table 1 reflects the removal of trade barriers in the seventies by the EU. We computed the effects of a removal of tariffs on industrial goods (HS chapters 18 through 97) and on fishery products (chapter 3 and some additional six digit lines mention in protocol 2 of the Association Agreements). As table 1 shows there are few tariffs remaining on trade in industrial goods. The only significant reduction in percentage terms is in food (61 and 77 percent). These remaining tariff barriers are probably due to protection on the agricultural

components of industrial goods as specified in Annex 1 of the agreements that we cannot isolate because of lack of data. Despite the strong reduction in percentage terms the reduction applies to a initial tariff of 1.5 percent for Morocco and 1.6 percent for Tunisia thus not granting much in terms of additional market access. Overall the current agreements thus require a significant lowering of trade barriers by Morocco and Tunisia (the percentages in table 1 apply the levels depicted in figure1a and 1b), while their access to the EU market does not significantly improve.

The one-sided liberalization implied by the current Association Agreements is reflected by the welfare effects of the agreements (table 2). Both Morocco and Tunisia face welfare losses amounting to 3.5 and 2.6 percent of GDP, respectively. There are small gains for Northern and Mediterranean EU member states, but these are insignificant compared to GPD. This reflects the limited economic importance of the MPCs for the EU as a whole. In welfare terms the Association Agreements thus imply significant losses for Morocco and Tunisia and insignificant gains for the EU.

Next to welfare losses Morocco and Tunisia face a rising unemployment when the Association Agreements are implemented (table 3). For both countries loss of employment for skilled labor (6.9 and 5.3 percent, respectively) exceeds the loss of employment for unskilled labor (5.8 and 4.8 percent). This is expected with a liberalization of manufacturing, generally employing more skilled labor. Differentiating the reduction in employment between agriculture and non-agricultural sectors we also find significant reductions in agricultural employment. This is the result of a drop in domestic demand as manufacturing incomes decline, and is further aggravated by the requirement to replace the fall in import tax revenues through a uniform income tax. The agricultural sectors are thus not shielded from the negative impacts of liberalizing trade in manufactured goods.

Comparing changes in output across sectors (table 4) we find major contractions in manufacturing in both Morocco and Tunisia. The higher contraction percentages in Morocco are due the higher initial protection levels on manufacturing in Morocco (see figure 1a and 1b). The only manufacturing sector benefiting from the liberalization is the textiles and leather industry. This also holds in Morocco despite high initial levels of protection (39 percent).

The contraction of manufacturing and the ensuing rise in unemployment reduces domestic demand, which translate to a reduction of agricultural production. Exceptions are the plant-based fiber sector in Tunisia (increasing with 2.4 percent) and animal products and wool in Morocco (increasing 3.4 percent). The increase in plant based fibers in Tunisia is due to an increased demand for inputs from the expanding textiles and leather industry. Protection on both plant based fibers and textiles is removed with the Association Agreements. Tunisia is thus expanding a competitive agricultural sector. Morocco, on the other hand, is diverting resources to its most highly protected sector when protection on manufactured goods is removed. Delaying negotiations on agricultural trade liberalization thus seems to increase future costs of liberalizing agricultural trade for Morocco.

The hub-and-spoke structure of the Association Agreements becomes obvious when comparing changes in imports and exports in figure 2 and 3. Morocco and Tunisia reduce trade with each other and with the rest of the world in favor of trade with the EU. Despite the significant changes in trade pattern for Morocco and Tunisia, the insignificant changes in production for the EU (table 4) again underline the limited economic importance of the MPCs for the EU.

Assessing the impact of the Association Agreements we thus find significant costs in terms of welfare and employment for both Morocco and Tunisia and insignificant effects for the EU. In the Association scenario Morocco and Tunisia only gain improved access for their

food and beverages exports, which slightly increase to the EU. This increase is a clear case of trade diversion, total exports of food remains the same for Morocco while decreasing in Tunisia due to a decreased export to Morocco.

3. Conclusions

This paper analyzes the economic impacts of the Euro-Mediterranean Association Agreements using a multi-sector, multi region model. Our numerical analysis, which focuses on Morocco and Tunisia, is built from a detailed commodity profile (HS-6) of the provisions of the Association Agreements. This reveals that the Agreements are very asymmetric: The EU basically does not give any concessions, and keeps protecting its agricultural and horticultural sectors, while the North African countries will have to open their manufacturing markets for competition from the EU.

The one-sided liberalization implied by the current Association Agreements yields s negative welfare effects for both Morocco and Tunisia, with losses amounting to 3.5 and 2.6 percent of GDP, respectively. Gains for Northern EU countries and There are small gains for Northern and Mediterranean EU member states are insignificant compared to GPD. This casts doubts on the structure of these Agreements. The consequent losses in employment and income in MPCs will not contribute to economic and social stability in those countries, and therefore the current design of the Agreements runs counter to the stated goals of the Barcelona process.

Our future research agenda intends to focus on further decomposition of effects into tax replacement effects and trade policy effects.

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Annex 1: Aggregation schemes

Table A.1: Aggregation of regions

Aggregate region	*Code*	*GTAP V6 regions*
1) Morocco	MOR	Morocco
2) Tunisia	TUN	Tunisia
3) Rest of North Africa	RNA	Rest of North Africa
4) Middle East	MEAST	Rest of Middle East
5) Northern EU members	EU_N	Austria Belgium Denmark Finland France Germany United Kingdom Ireland Luxembourg Netherlands Sweden
6) Mediterranean EU members	EU_M	Greece Italy Portugal Spain
7) EU accession countries	EU_A	Bulgaria Cyprus Czech Republic Hungary Malta Poland Romania Slovakia Slovenia Estonia Latvia Lithuania
8) USA	USA	United States
9) All other regions	ROW	The remaining 55 GTAP regions

Table A.2: Aggregation of sectors

Sector	*Code*	*Sector*	*Code*
1) Cereals	**cereal**	**11) Textiles & leather**	**tex_lea**
Wheat (wht)		Textiles (tex)	
Cereal grains nec (gro)		Wearing apparel (wap)	
Processed rice (pcr)		Leather products (lea)	
2) Oils seeds & vegetable oils	**oilcrp**	**12) Petro-chemicals**	**petchem**
Oil seeds (osd)		Petroleum, coal products (p_c)	
Vegetable oils and fats (vol)		Chemical,rubber,plastic prods (crp)	
3) Vegetables, fruits & nuts	**veg_frt**	**13) Wood, paper & mineral products**	**wd_min**
Vegetables, fruit, nuts (v_f)		Wood products (lum)	
4) Spices and other crops	**spices**	Paper products, publishing (ppp)	
Crops nec (ocr)		Mineral products nec (nmm)	
5) Plant-based fibers	**fibercrp**	Metals nec (nfm)	
Plant-based fibers (pfb)		**14) Metals and metal products**	**metal**
6) Sugar cane, sugar beet, sugar	**sugar**	Ferrous metals (i_s)	
Sugar cane, sugar beet (c_b)		Metal products (fmp)	
Sugar (sgr)		**15) Various types of equipment**	**equip**
7) Animal products and wool	**anim**	Transport equipment nec (otn)	
Cattle,sheep,goats,horses (ctl)		Electronic equipment (ele)	
Animal products nec (oap)		Machinery and equipment nec (ome)	
Wool, silk-worm cocoons (wol)		**16) Motor vehicles &manufactures**	**veh_man**
Meat: cattle,sheep,goats,horse (cmt)		Motor vehicles and parts (mvh)	
Meat products nec (omt)		Manufactures nec (omf)	
8) Milk & dairy products	**dairy**	**17) Services**	**servs**
Raw milk (rmk)		Electricity (ely)	
Dairy products (mil)		Gas manufacture, distribution (gdt)	
9) Natural resource extraction	**extract**	Water (wtr)	
Forestry (frs)		Construction (cns)	
Fishing (fsh)		Trade (trd)	
Coal (coa)		Transport nec (otp)	
Oil (oil)		Sea transport (wtp)	
Gas (gas)		Air transport (atp)	
Minerals nec (omn)		Communication (cmn)	
10) Food & beverages	**food**	Financial services nec (ofi)	
Food products nec (ofd)		Insurance (isr)	
Beverages and tobacco products (b_t)		Business services nec (obs)	
		Recreation and other services (ros)	
		PubAdmin/Defence/Health/Educat (osg)	
		Dwellings (dwe)	

Annex 2: Computing tariff reductions

The computation of tariff reductions foreseen in the association agreements is done by combining 6-digit level data on tariff lines to be removed from Annex 3 through 6 in the Association Agreements of Morocco and Tunisia with tariff and trade data from MAcMAP.

1. We first compute the trade-weighted import tariff on imports originating in Northern of Mediterranean EU countries at 6 digit level using the MacMap database (these data are from 2001 and thus cover the period before the EU enlargement). We then compute the trade-weighted tariff for each of the sectors in our model.
2. We then remove tariffs in accordance with the Association Agreements at 6 digit level and re-compute the average trade weighted tariff for imports originating in the EU for the sectors in our model.
3. We then compute the percentage change in tariffs for each of the sectors in our model which renders the shocks to be applied to simulate the Association Agreements.

Figure 1a: Import tariffs and scope of liberalization for Morocco

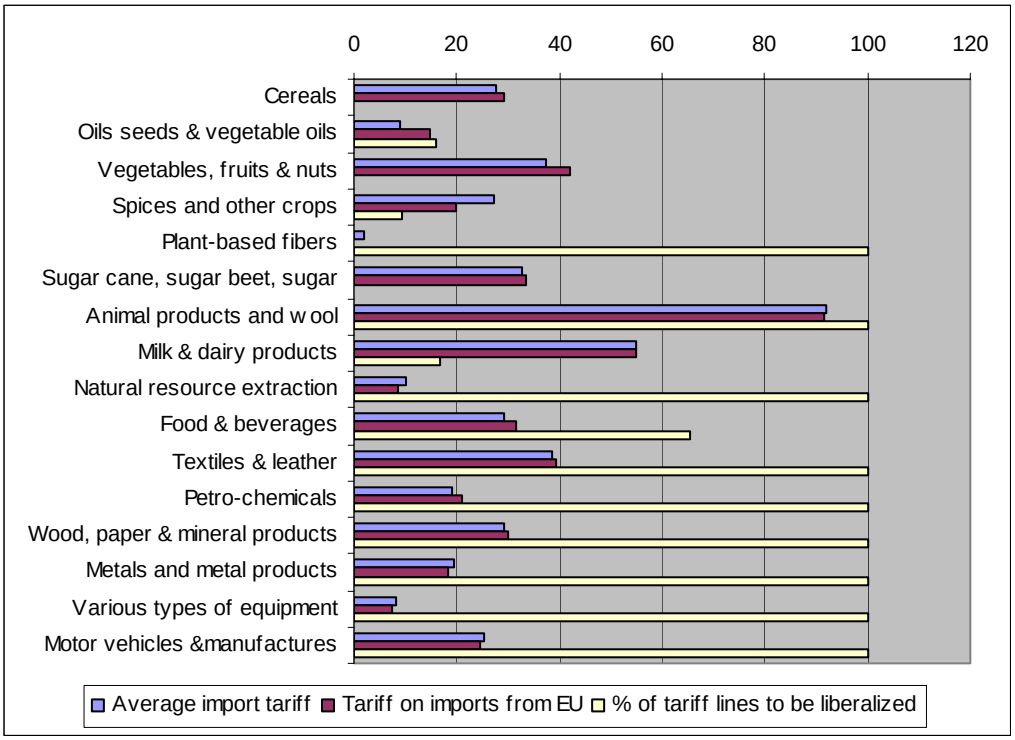

Figure 1b: Import tariffs and scope of liberalization for Tunisia

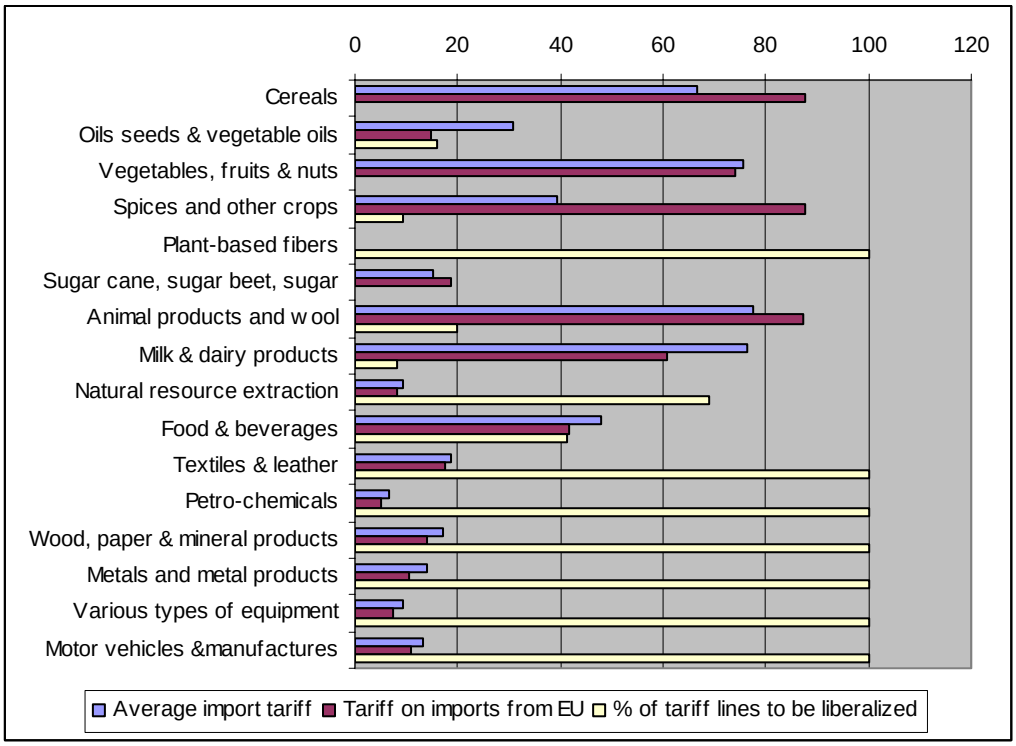

Figure 2a: Percentage change in imports by sector and destination for Morocco

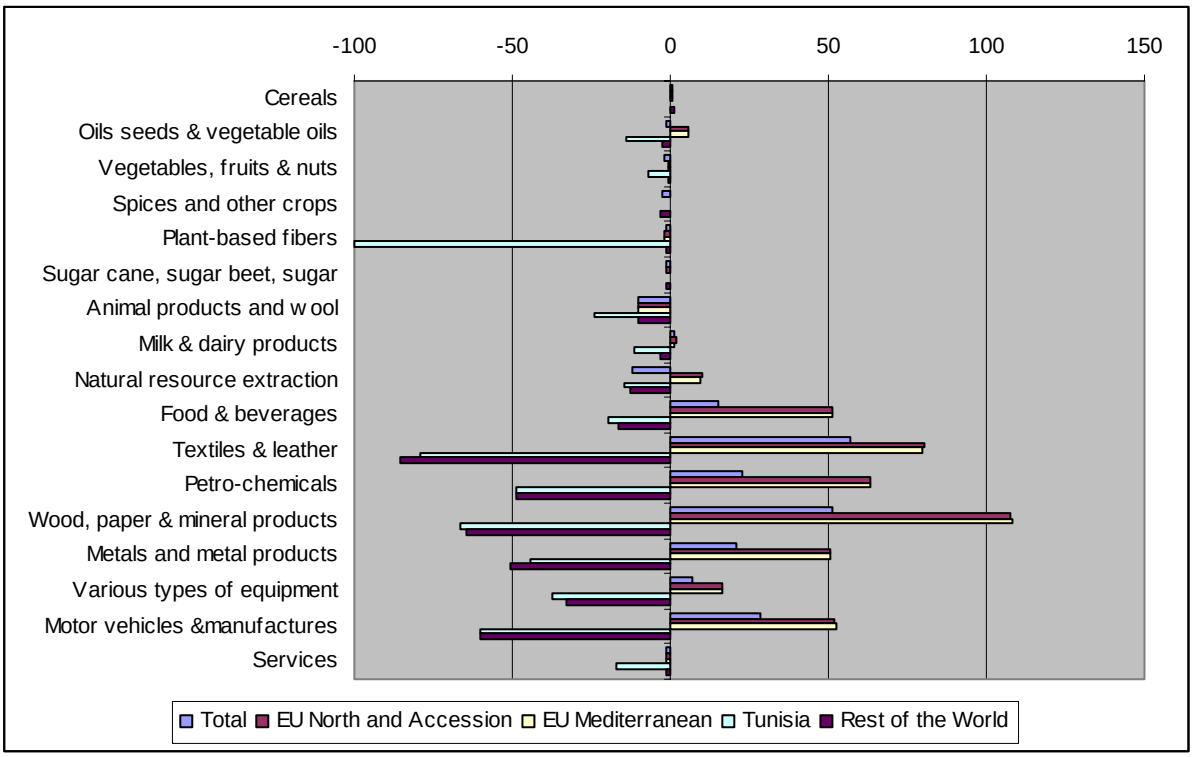

Figure 2b: Percentage change in imports by sector and destination for Tunisia

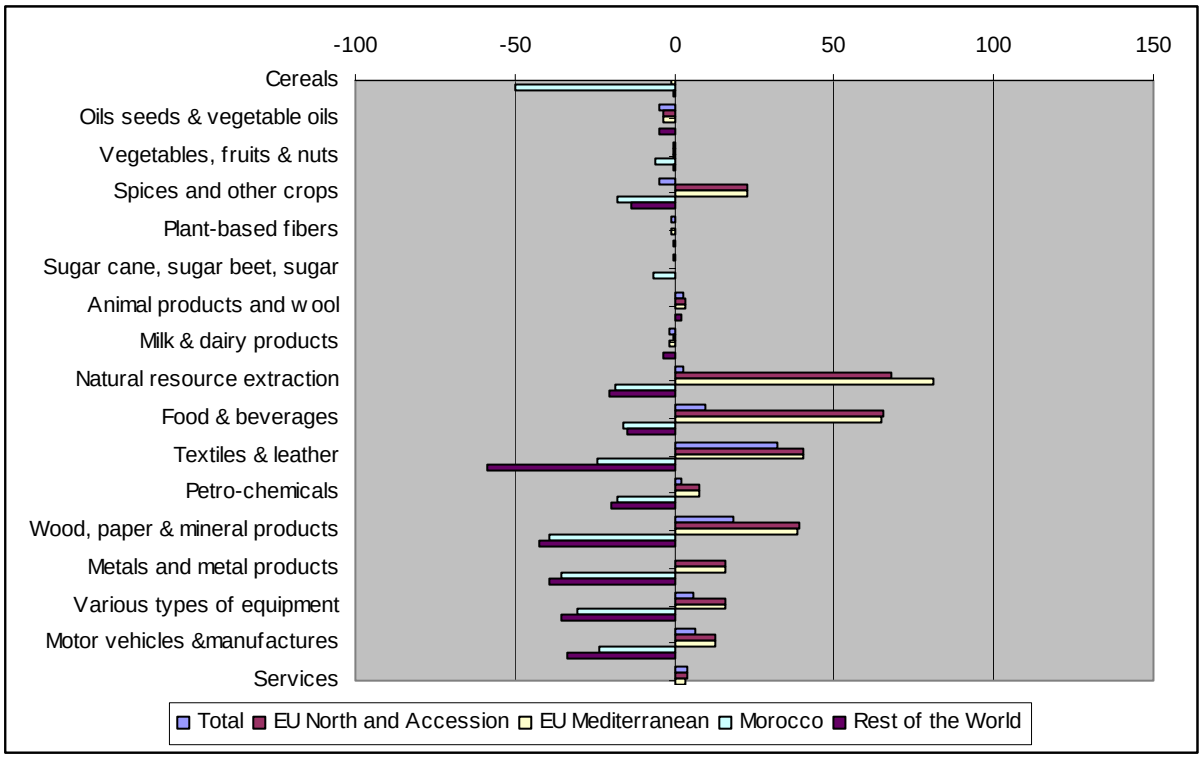

Figure 3a: Percentage change in exports by sector and destination for Morocco

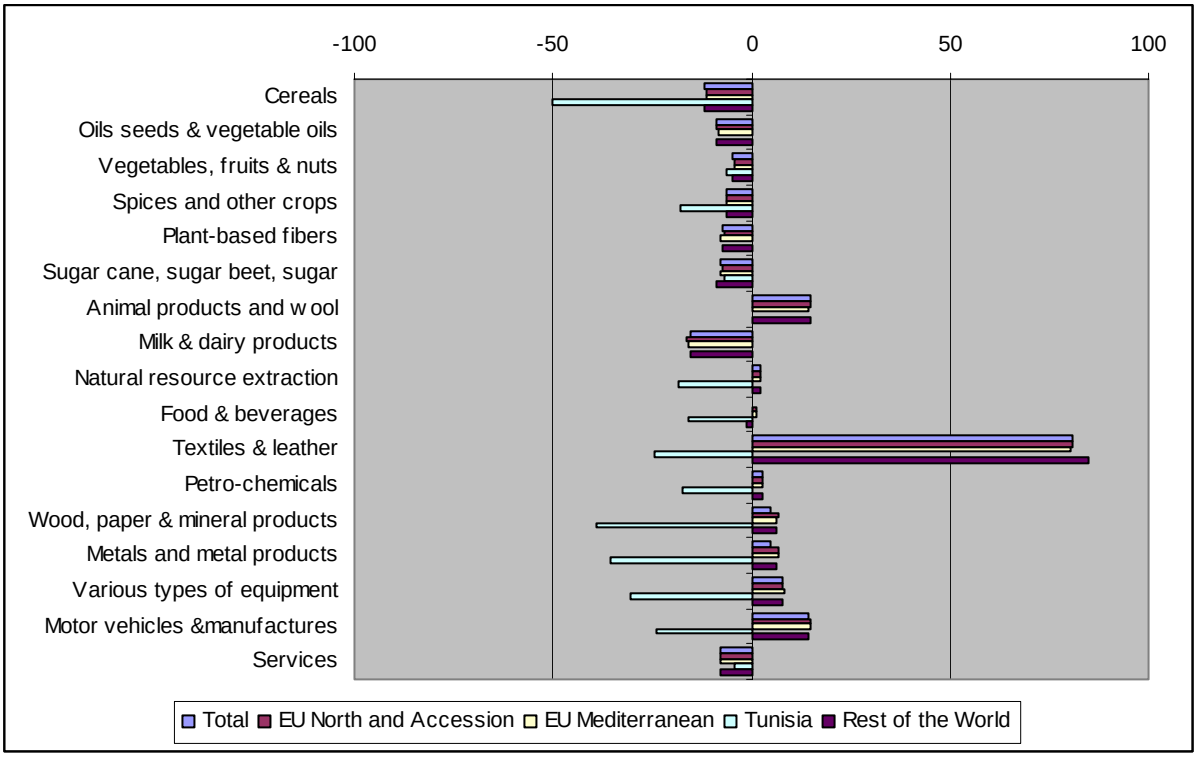

Figure 3b: Percentage change in exports by sector and destination for Tunisia

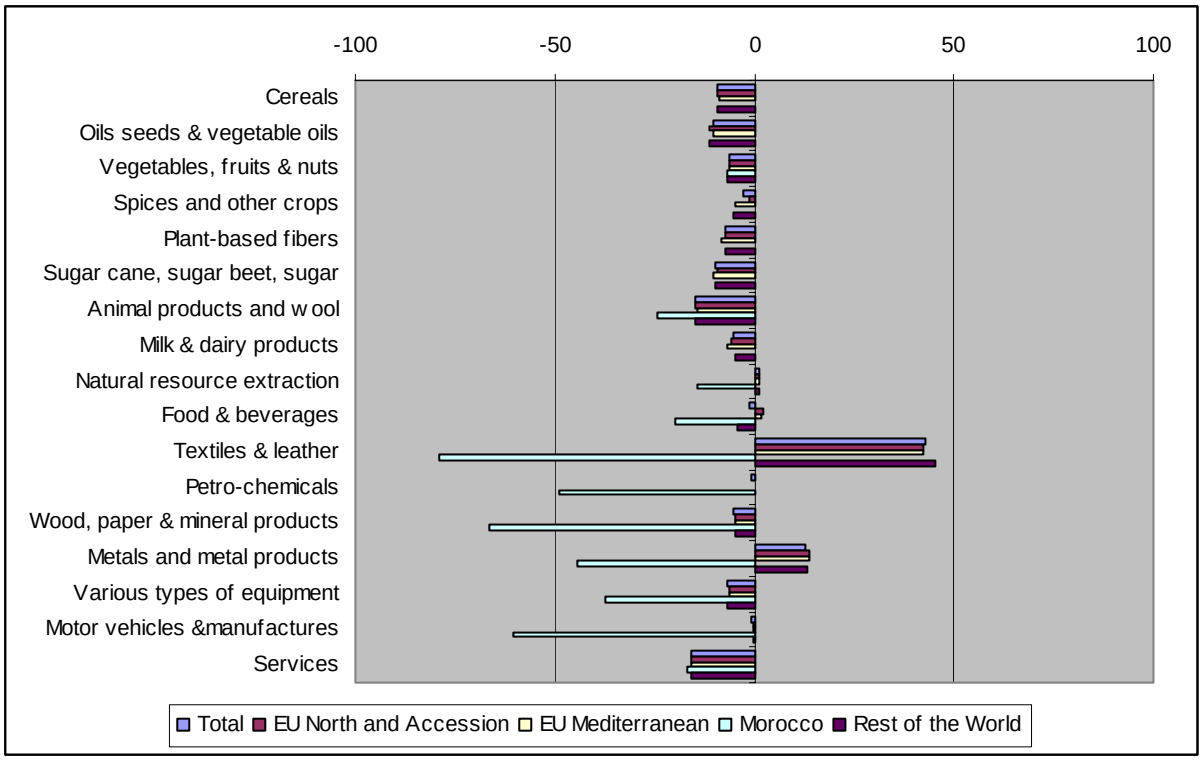

Table 1: Association agreement scenario by sector and region (% reduction in tariffs)

Sector	*Tariffs on imports originating in the EU*		*Tariffs of EU on imports originating in MPCs*	
	Morocco	*Tunisia*	*Morocco*	*Tunisia*
1 Cereals	0.0	0.0	0.0	0.0
2 Oils seeds & vegetable oils	-11.6	-2.4	0.0	-0.2
3 Vegetables, fruits & nuts	0.0	0.0	0.0	0.0
4 Spices and other crops	-3.0	-11.5	-0.4	-17.7
5 Plant-based fibers	0.0	0.0	0.0	0.0
6 Sugar cane, sugar beet, sugar	0.0	0.0	0.0	0.0
7 Animal products and wool	-0.2	-0.4	0.0	0.0
8 Milk & dairy products	-1.9	-0.9	-0.1	0.0
9 Natural resource extraction	-22.6	-81.8	0.0	0.0
10 Food & beverages	-65.5	-58.8	-60.6	-77.2
11 Textiles & leather	-100.0	-99.7	0.0	0.0
12 Petro-chemicals	-100.0	-99.9	0.0	0.0
13 Wood, paper & mineral products	-100.0	-100.0	0.0	0.0
14 Metals and metal products	-100.0	-100.0	0.0	0.0
15 Various types of equipment	-95.1	-100.0	0.0	0.0
16 Motor vehicles &manufactures	-100.0	-84.4	0.0	0.0

Source: Annex 2 through 6 of the Association Agreements, MacMap (authors' computations)

Table 2: National income effects by scenario based on EV (millions of dollars)

		Association Agreements	
		(million dollar)	*(% of base GDP)*
MPCs	Morocco	-1194	-3.5
	Tunisia	-516	-2.6
	Rest of North Africa	-151	-0.1
EU	EU Mediterranean	288	0.0
	EU North and Accession	674	0.0
	EU Accession	-25	0.0
ROW	Middle East	-78	0.0
	USA	-17	0.0
	Rest of World	-532	0.0

Table 3: Percentage change in employment by scenario and by sector

	Association Agreements			*Employment*		
	Morocco	Tunisia	Rest of North Africa	Morocco	Tunisia	Rest of North Africa
Total						
Unskilled labor	-5.8	-4.8	-0.1			
Skilled labor	-6.9	-5.3	-0.1			
Agricultural						
Unskilled labor	-6.0	-5.8	-0.1			
Skilled labor	-6.9	-7.2	-0.1			
Non-Agricultural						
Unskilled labor	-5.7	-4.5	-0.1			
Skilled labor	-6.9	-5.3	-0.1			

Table 4: Percentage change in output with the Association Agreements by region

	Morocco	*Tunisia*	*Rest of North Africa*	*EU Mediterranean*	*Eu North*	*EU Accession*	*Middle East*	*USA*	*Rest of the World*
Cereals	-5.7	-5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oils seeds & vegetable oils	-6.8	-10.8	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Vegetables, fruits & nuts	-4.1	-3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spices and other crops	-6.2	-8.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Plant-based fibers	-5.2	2.4	0.0	-0.4	-0.3	-0.3	-0.1	-0.1	-0.2
Sugar cane, sugar beet, sugar	-5.2	-5.4	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Animal products and wool	3.4	-2.9	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Milk & dairy products	-7.1	-5.0	0.0	-0.1	0.1	-0.1	0.0	0.0	0.0
Natural resource extraction	-6.4	-3.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Food & beverages	-3.7	-5.8	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Textiles & leather	28.7	27.2	-0.1	0.0	0.2	-0.9	-0.3	-0.1	-0.3
Petro-chemicals	-13.2	-6.6	-0.4	0.1	0.0	0.0	0.0	0.0	0.0
Wood, paper & mineral products	-20.2	-14.4	-0.1	0.1	0.0	0.1	0.0	0.0	0.0
Metals and metal products	-19.7	-8.0	-0.4	0.0	0.0	0.1	0.0	0.0	0.0
Various types of equipment	-3.9	-10.8	0.1	-0.1	-0.1	0.1	0.1	0.0	0.1
Motor vehicles &manufactures	-20.0	-10.8	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Services	-4.1	-3.8	-0.1	0.0	0.0	0.0	0.0	0.0	0.0