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MARKETS, TRADE AND INSTITUTIONS DIVISION

November 2006

MTID Discussion Paper No. 97

# Defining a Trade Strategy for Southern Mediterranean Countries

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**ACKNOWLEDGEMENT**

The author is grateful to Valdete Berisha-Krasniqi, Jamal Bouoiyour, Jacques Le Cacheux, Shyamal Chowdhury, Nicholas Minot, David Orden, Serge Rey, Devesh Roy for comments on an earlier version.

## TABLE OF CONTENTS

## LIST OF TABLES



## LIST OF FIGURES

## ABSTRACT

The objective of this paper is to analyze the best trade approach for Southern Mediterranean countries (Morocco, Algeria, Tunisia, Libya, Egypt, Jordan, Syria, Lebanon and Turkey) that helps them increase market access and develop trade policies which will facilitate the most efficient economic development. The study uses, the MacMap-HS6 database on market access and the Modeling International Relations under Applied General Equilibrium (MIRAGE) model of the global economy. While most South Mediterranean (SM) countries are very protectionist, they enjoy a fairly good access to world markets, either due to product specialization or to preferences granted by the European Union in the industrial sector. Today, these countries are simultaneously opting for multilateralism, North-South regionalism, and South-south regionalism. Are these options substitutes of each other? As this study suggests, that is not the case. A South-South integration of these countries is not enough trade – creating, while a North – South Free Trade Agreement with Europe is significantly trade – diverting, particularly in the case of SM countries' agricultural imports. In order to examine the dynamics between multilateralism and regional strategies, the '*structural congruence*' of these different trade regimes is measured and a new indicator is proposed.

# DEFINING A TRADE STRATEGY FOR SOUTHERN MEDITERRANEAN COUNTRIES

Antoine Bouët [1]

## 1. INTRODUCTION

The recent evolution of the international trading system has moved in two directions: multilateral trade agreements and regional free trade agreements. Although the progress of the ongoing WTO trade negotiations is surprisingly slow, multilateralism continues to play a crucial role in the international trading system. On the other hand, regional free trade agreements have been the dominant alternative. By 2001, only seven countries were not members of a regional trade agreement, either reciprocal or non reciprocal[2].

Apparently, Southern Mediterranean (SM) countries[3] have not oriented their trade policies in a clear-cut direction. From a multilateral point of view, some are WTO members: Egypt, Morocco, Tunisia, and Turkey since 1995, and Jordan since 2000. Algeria, Libya and Lebanon have been granted an observer status; it means that they will become WTO members soon.

From a regional point of view, all of these 9 countries, except Libya, have been conceded trade preferences from their very rich Mediterranean neighbor, the European

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[2] See Bouet and Mayer, (2003).
[3] We define this group as: Morocco, Algeria, Tunisia, Libya, Egypt, Jordan, Syria, Lebanon and Turkey.

Union (EU)[4]. But this regional strategy is unique. SM countries have been receiving trade preferences from EU for a few decades, but these preferences only concern a non-reciprocal free access for industrial products; they do not include any preference on exportation of agricultural goods and services to Europe. In 1995, the Barcelona declaration defined a new partnership between European Union and SM countries. The preferential access of SM countries to the European market is becoming perennial, the cumulating of rules of origin is being extended and SM countries will open their industrial sectors to European products, while Europe is already open[5].

The European Union has lost its position of being the only regional trading partner of SM countries. Morocco and Jordan have signed a free trade agreement with the USA. Furthermore, bilateral reciprocal agreements with rich countries are not the only means by which SM countries are establishing regional partnerships: South-South integration is also taking place as Morocco concluded free trade agreements with Algeria (Tariff convention, March 14th, 1989) and Libya (Tariff convention, June 29th, 1990). Finally, a great pan-Arabian free trade area is in progress since the decision adopted by the Arabian League in 1997. Tariff dismantling started on January 1st, 1998, but it includes numerous exceptions.

Designing a free trade strategy is all the more important given that these countries are highly protectionist: from the 163 countries available in the MacMap-HS6 database for 2001, Egypt is ranked 5th among the most protectionist countries, Libya 9th, Morocco

[4] The Euromed partnership concerns these 8 countries, plus Israel and the Palestinian Authority. Libya has an observer status since 1999.
[5] Turkey signed an industrial custom union agreement with Europe in 1995.

10th, and Tunisia 11th. Only Turkey and particularly Lebanon are open countries[6] in this group.

After having adopted import substitution strategies, SM countries have now reversed their trade policies, opting for trade openness. In that perspective, they combined both multilateral and regional strategies by trading either with a rich partner (North/South integration) or with Middle Income Countries (South/South integration). Are these strategies perfect substitute? This is a key question as multilateralism today is an uncertain strategy at the time when negotiations are apparently in a deadlock. Thus, countries disappointed by multilateralism could be tempted by regional agreements.

This question is also a key issue of international trade theory. Until 1950 economists held an '*all-trade-is-good*' view, meaning that any form of regionalism is a perfect substitute for multilateralism. But as pointed out by Viner (1950), a discriminatory trade regime not only creates trade, but it also diverts trade, implying adverse terms-of-trade effects. Trade diversion effects have been too long underestimated. From an empirical point of view, several studies have recently highlighted their importance: Yeats (1996), for example, demonstrates that the creation of MERCOSUR gave birth to increased intra - MERCOSUR exports of capital-intensive products, while the same products are not more exported to third economies.

From an analytical point of view, Wonnacott and Lutz (1989) claimed that a Preferential Trade Agreement (PTA) between "Natural Trade Partners" (NTP) should be

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[6] Turkey and Lebanon are ranked 103rd and 128th while Syria, Algeria and Jordan are ranked 21st, 34th and 46th.

necessarily welfare – improving. The NTP concept was expanded by Summers (1991) and Krugman (1991); they founded natural trade on a criterion of volume of trade and distance. But, Bhagwati and Panagarya (1996) demonstrated that a regional agreement between countries with high initial volume of trade or between close countries does not necessarily reduce the likelihood of trade diversion and could be welfare – reducing.

These issues are quite relevant in the case of SM countries. They illustrate that neither a North/South regional integration like the Euromed partnership — following the line of Summer's volume-of-trade criterion — nor a South/South integration like the pan-Arabian free trade area — following Krugman's distance criterion — are *a priori* beneficial. In that sense they are not necessarily perfect substitute for multilateralism[7].

The dynamic analysis is even more remarkable, assessing whether a regional agreement accelerates or decelerates the move towards multilateral free trade. While Bhagwati and Panagarya (1996) have put on the table the general framework of this debate, in terms of "*building versus stumbling blocks*", a few recent papers study the possibility that the regional time-path may affect multilateralism. From political economy models, Krishna (1995) and Levy (1996) show that the constitution of a regional agreement can undermine or even eliminate the domestic support for multilateralism.

A straightforward method to assess if regionalism and multilateralism substitute each other is to evaluate the implications of openness on sector production. To do so, a

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[7] The debate has been "polluted" by the Kemp and Wan' approach (1996) which demonstrates that for a set of countries it is always possible to determine a custom union which leaves the nonmembers' welfare unchanged while improving members' situation. As suggested by Bhagwati, Greenaway and Panagarya (1998) this result is an existence theorem which does not state that any regional agreement is welfare – improving.

Computable General Equilibrium Model can be utilized. Multilateral liberalization is efficient as it implies reallocation of productive factors from sectors where a country has a comparative disadvantage to a sector where it has an advantage. In the long term, when productive factors are reallocated, the economy is more efficient and richer.

But in the short or medium term, the opening of economy incurs a social cost. Any trade openness that serves as a first step towards the allocation of productive factors warranted by the most efficient trade regime is an attractive policy.

In this sense, regionalism can be attractive as far as it implies an allocation of productive factors, which is conform to the one ensured by multilateralism[8]. This paper uses the concept of **structural congruence**, first introduced by Roland Holst and Van der Mensbrugghe (2003); it is defined by "*similarity in the composition of real sectoral output within a country under two different policy regimes*" (Roland Holst and Van der Mensbrugghe, 2003, p. 24). A statistical indicator of structural congruence is proposed as Roland Holst and Van der Mensbrugghe' analysis was not systematic.

In a nutshell, most SM countries are very protectionist, but they enjoy a fairly good access to world markets, either due to their product specialization or to preferences granted by the European Union in the industrial sector. These countries are simultaneously opting for multilateralism, North-South regionalism and South-south regionalism. Are these options substitutes? Using a multi-country computable general equilibrium model, this paper concludes on a negative answer. According to the

[8] Implicitly we suppose here that full multilateral liberalization is the most efficient regime. It can be considered justified from a collective point of view.

"*Vinerian*" approach, a South-South integration of SM countries is not enough trade – creating, while a North – South PTA with Europe is significantly trade – diverting, particularly in the case of SM countries' agricultural imports. According to the "*Bhagwati – Panagarya*" approach, the advantage of a partnership with Europe is that it is a "*building block*" (for Turkey and Tunisia) while a Great Arabian League is a "*stumbling block*" for Tunisia.

The policy conclusions here emphasize that multilateralism appears to be the best option for SM countries and that they should support this negotiation. On regionalism, the FTA with the European Union is a much better direction than the implementation of a greater Arabian FTA. Furthermore, this last option tends to create adverse allocation of productive factors in these countries, as compared to the one implied by multilateral free trade. This last policy conclusion is pointed out by the measure of structural congruence in this paper.

Section 2 provides an assessment of SM countries' protection and their access to the world market. Section 3 evaluates the macroeconomic impact of three different trade strategies with the help of the MIRAGE model[9]. Section 4 studies the consistency of SM countries' trade policies followed by Section 5, which concludes the study.

[9]The MIRAGE model was developed at the *Centre d'Etudes Prospectives et d'Informations Internationales* (CEPII) in Paris. Full description of the model is available at the CEPII Web site (www.cepii.fr) and in Bchir, Decreux, Guerin and Jean (2002).

## 2. TRADE AND MARKET ACCESS IN SOUTHERN MEDITERRANEAN COUNTRIES: SOME PRELIMINARY STATISTICS

An important historical feature of SM countries is that they implemented Import Substitution Industrialization (ISI) strategy in the 1960s, which resulted in high protection of domestic industry. Their current structure of protection, partially, reflects this legacy: protectionism is high in these countries and in some countries such as Egypt, Libya, and Syria, industry is still more protected than agriculture — a very uncommon feature of trade policy (see Chaherli, 2002; Devlin, 2003; Oliva, 2000; Srinivasan, 2002). This section studies the market access issue in SM countries using the MacMap-HS6 database[10].

### 2.1 MARKET ACCESS IN SM COUNTRIES

Table 1 provides a global picture of protection in SM countries, first for the entire economy, and second, by differentiating agricultural, industrial, and primary (non-agricultural) activities[11]. In order to evaluate the relative importance of these figures, the same indicators are calculated for three sets of countries (OECD countries, Middle Income Countries – MICs, and Least Developed Countries – LDCs), then at the world level.

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[10] MAcMap-HS6 is a database providing with a consistent, *ad-valorem* equivalent measure of tariff duties and tariff rate quotas for 163 countries and 208 partners, at the six-digit level of the Harmonized System (5,111 products), accounting for all preferential agreements. Special emphasis has been placed on minimizing the endogeneity bias in the aggregation procedure, and on acknowledging structural differences in export specialization. This database is a collective work realized at Centre d'Etudes Prospectives et d'Informations Internationales, Paris and at the International Trade Centre, Geneva.

[11] These are weighted averages of import duties according to the methodology defined in Bouet et alii (2005).

That the average levels of protection are low in rich countries is well recognized by now, especially in the Quad (Canada, European Union, Japan, and US). Nevertheless, the sector dispersion of tariff protection is high in most OECD countries (Japan, Switzerland, EU, and Canada): agriculture is highly protected, whereas industry is almost free from any protection. In developing countries, overall protection is frequently higher and less dispersed across sectors; exceptions to this are Madagascar and Lesotho which only protect their agricultural sector. Table 1 also points out uneven levels of protection in agriculture and industry in China, India, and South Africa.

Evidently, market access in SM countries is very restricted. Figure 1 ranks countries throughout the world by their overall level of protection, as calculated by the MacMaps-HS6 database. Protection ranges from 0.0% in Hong-Kong to 46.0% in Bermuda.

SM countries are clearly in the protectionist group[12]. The overall rate of protection is very high in Libya, Morocco, and Tunisia and especially in Egypt. Exceptions to this are Turkey, whose protectionist trends have been outweighed in the last decade by the European influence, and Lebanon which has been a proponent of free trade for a long time. It is noteworthy, however, that the Turkish agriculture remains highly protected. In other SM countries, market access is restricted; the level of protection is relatively high as compared to MICs.

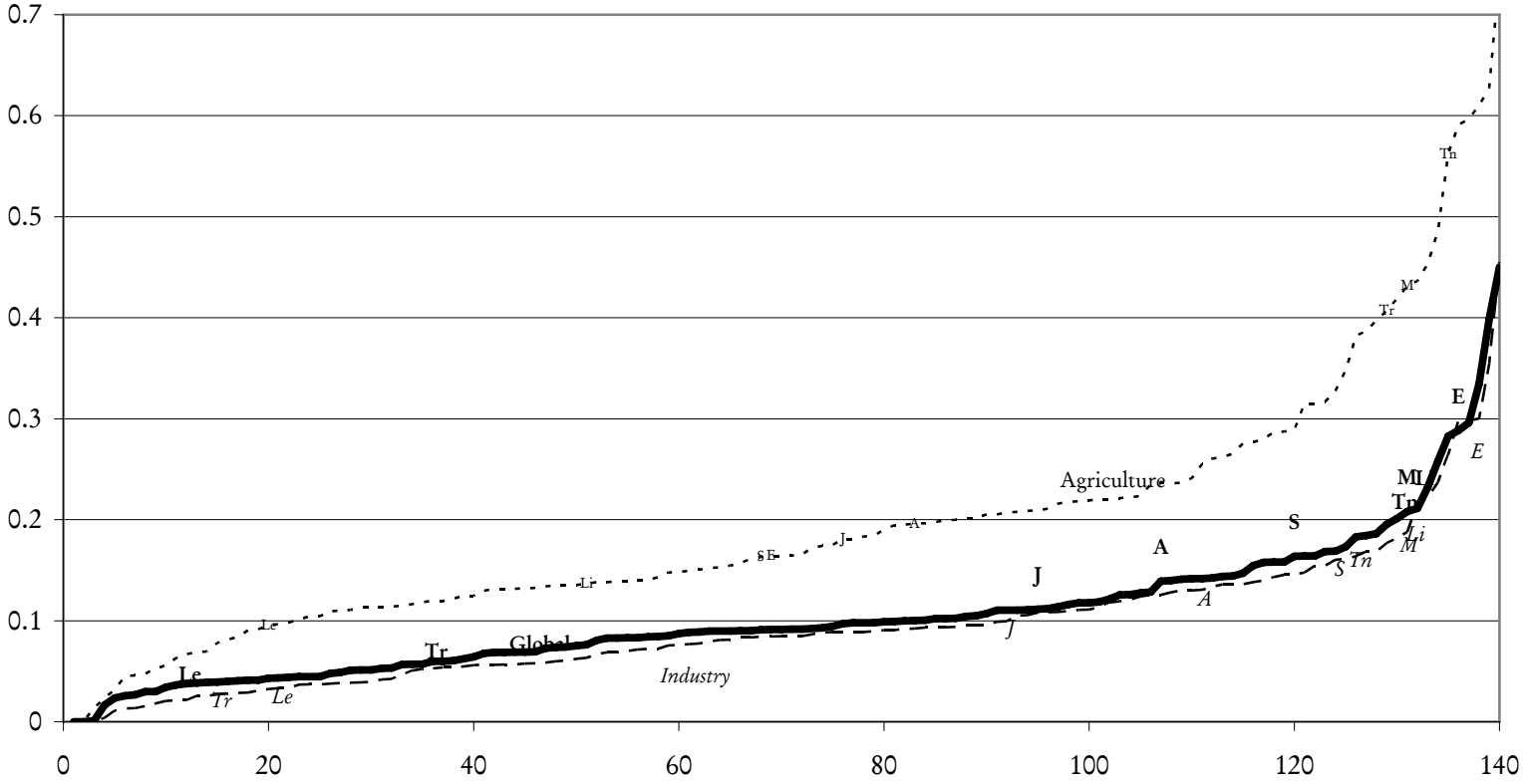
[12] They are pointed out on Table 1 by initials: A for Algeria, E for Egypt, J for Jordan, Le for Lebanon, Li for Libya, M for Morocco, S for Syria, Tn for Tunisia, Tr for Turkey.

**Table 1—Global and sector-level protection in SM countries**

| | | Global | Agriculture | Industry | Primary |
|---|---|---|---|---|---|
| **SM countries** | Algeria | 13.8% | 19.6% | 13.7% | 7.4% |
| | Egypt | 28.9% | 16.4% | 32.1% | 4.7% |
| | Jordan | 11.1% | 18.0% | 10.9% | 4.7% |
| | Lebanon | 3.8% | 9.5% | 3.3% | 2.8% |
| | Libya | 21.1% | 13.5% | 18.8% | 61.2% |
| | Morocco | 20.7% | 43.1% | 19.0% | 14.3% |
| | Syria | 16.2% | 16.3% | 17.0% | 6.3% |
| | Tunisia | 20.0% | 56.2% | 17.3% | 8.9% |
| | Turkey | 6.0% | 40.8% | 3.0% | 0.4% |
| **OECD countries** | Australia | 5.1% | 3.1% | 5.4% | 4.6% |
| | Canada | 3.4% | 13.6% | 2.7% | 0.1% |
| | EU | 3.1% | 15.9% | 2.4% | 0.1% |
| | Japan | 4.1% | 33.2% | 1.5% | 0.2% |
| | Switzerland | 4.5% | 38.7% | 1.7% | 0.2% |
| | US | 2.4% | 4.8% | 2.4% | 0.0% |
| **MI countries** | Argentina | 12.5% | 12.4% | 12.9% | 1.2% |
| | Brazil | 11.7% | 11.3% | 12.6% | 0.7% |
| | China | 14.1% | 26.1% | 13.9% | 0.7% |
| | India | 33.5% | 61.2% | 30.5% | 20.8% |
| | Pakistan | 18.3% | 28.8% | 17.6% | 7.3% |
| | South Africa | 8.4% | 19.5% | 7.5% | 0.8% |
| **LDCs** | Bangladesh | 16.7% | 22.4% | 15.3% | 24.2% |
| | Cambodia | 14.7% | 14.3% | 15.4% | 6.2% |
| | Chad | 15.7% | 22.1% | 14.5% | 10.2% |
| | Ethiopia | 14.3% | 18.3% | 13.6% | 6.1% |
| | Lesotho | 7.6% | 22.3% | 6.0% | 0.3% |
| | Madagascar | 4.4% | 5.3% | 4.3% | 0.3% |
| | **LDC** | **13.4%** | **17.8%** | **12.6%** | **12.8%** |
| | **MIC** | **9.7%** | **21.5%** | **8.9%** | **3.9%** |
| | **OECD** | **3.4%** | **15.7%** | **2.6%** | **0.4%** |
| | **World** | **5.5%** | **17.8%** | **4.7%** | **1.4%** |

Source: MacMap-HS6 and author's calculation.

**Figure 1—World distribution of applied protection: Global/Agriculture/Industry**




Source: MacMap-HS6 and author's calculation.

A very common feature of trade policies throughout the world is that they impose higher protection on agricultural sector than on the industrial one (see the case of Japan and Switzerland on Table 1). Nevertheless, this is not the case for three SM countries: Egypt, Libya and Syria. This is obviously a result of an "infant industry" strategy, which has prioritized the protection of domestic manufactures. At a more disaggregated level, not only SM countries are imposing on average high duties, but tariffs are also extremely dispersed across products[13]; market access is severely restricted for meat and dairy products in Morocco, for beverages in Syria, for meat cut flowers, coffee, tea and spices, and sugar in Tunisia, and for meat, sugar, and cocoa in Turkey.

## 2.2 MARKET ACCESS FOR SM COUNTRIES

Traditionally, protection is measured only from the importing country's perspective; namely by the barriers the importing country imposes on the exporting country's products. Nevertheless, access to foreign markets is a key issue of trade negotiations. The MacMap-HS6 database has included the exporter's dimension in assessing world protection, it also allows for measuring market access from the perspective of the exporting country.

Table 2 indicates the average duties faced on exports with the same structure as Table 1. Differences in market access reflect a product composition (a country is more or less specialized in highly protected sectors), a geographic concentration of exports

[13] Devlin (2003) outlines a rising dispersion in MENA countries' tariffs.

(whether a country's exports are more or less concentrated towards very protectionist countries or free-traders) and the trade preferences that countries have been granted.

**Table 2—Average duty faced on exports**

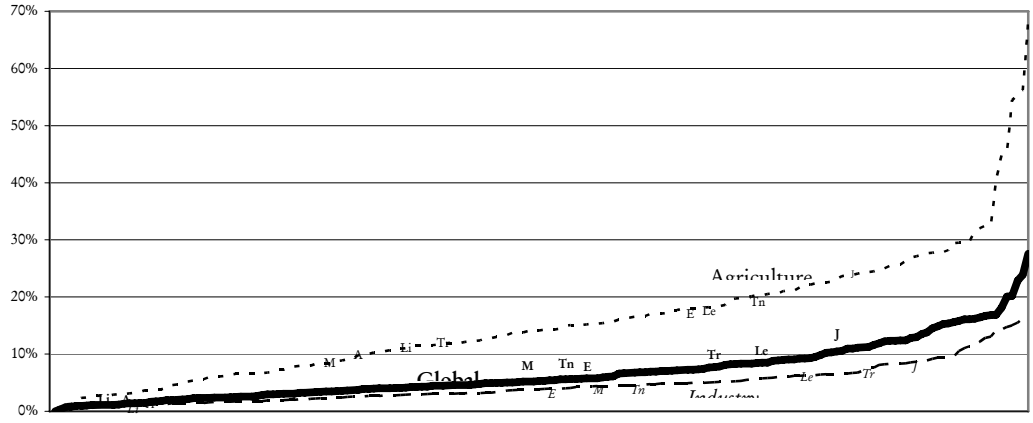
| | | Global | Agriculture | Industry | Primary |
|---|---|---|---|---|---|
| **SM countries** | Algeria | 1.1% | 9.8% | 1.3% | 0.9% |
| | Egypt | 5.7% | 18.0% | 4.8% | 1.5% |
| | Jordan | 10.5% | 23.9% | 9.1% | 3.9% |
| | Lebanon | 8.5% | 18.2% | 6.3% | 2.2% |
| | Libya | 1.1% | 11.0% | 3.3% | 0.8% |
| | Morocco | 5.2% | 8.4% | 4.8% | 1.4% |
| | Syria | 3.6% | 11.5% | 7.5% | 1.1% |
| | Tunisia | 5.6% | 20.4% | 4.9% | 0.8% |
| | Turkey | 7.7% | 11.7% | 7.2% | 3.0% |
| **OECD countries** | Australia | 9.1% | 29.1% | 4.8% | 2.3% |
| | Canada | 4.1% | 15.4% | 3.3% | 1.0% |
| | EU | 5.9% | 17.2% | 4.8% | 1.8% |
| | Japan | 6.0% | 11.5% | 6.0% | 4.5% |
| | Switzerland | 3.1% | 17.1% | 2.7% | 1.8% |
| | US | 5.8% | 19.9% | 4.4% | 2.0% |
| **MI countries** | Argentina | 13.6% | 18.2% | 11.1% | 3.8% |
| | Brazil | 11.3% | 24.2% | 6.9% | 1.8% |
| | China | 6.1% | 14.2% | 5.5% | 2.2% |
| | India | 7.5% | 16.7% | 6.0% | 2.1% |
| | Pakistan | 8.3% | 22.5% | 5.9% | 3.0% |
| | South Africa | 6.6% | 19.5% | 5.7% | 1.5% |
| **LDCs** | Bangladesh | 5.0% | 3.0% | 5.1% | 8.7% |
| | Cambodia | 5.4% | 12.0% | 5.3% | 6.0% |
| | Chad | 2.0% | 37.0% | 1.2% | 0.4% |
| | Ethiopia | 8.3% | 8.9% | 3.1% | 17.1% |
| | Lesotho | 4.9% | 6.8% | 4.9% | 14.6% |
| | Madagascar | 4.1% | 3.9% | 4.4% | 2.4% |
| | **LDC** | **4.4%** | **10.7%** | **4.8%** | **1.4%** |
| | **MIC** | **5.5%** | **18.1%** | **5.2%** | **1.4%** |
| | **OECD** | **5.5%** | **17.7%** | **4.5%** | **1.3%** |
| | **World** | **5.5%** | **17.8%** | **4.7%** | **1.4%** |

Source: MacMap-HS6 and author's calculation.

Differences in average duties faced by SM countries on their exports may come from their product specialization. For example, exports from Algeria and Libya are little taxed (gas and petroleum) Other SM countries are clearly taking advantage of the Euromed agreements and of the duty reduction on textile and apparel exports. Agricultural products are much more protected but this is a lesser concern for these countries compared to large agro-food exporters such as Argentina, Australia, and Brazil[14].

Figure 2 ranks countries throughout the world according to the average duty faced on exports. For SM countries, this reaffirms a fairly good access to foreign markets. Contrarily to their positioning on Figure 1, SM countries are spread throughout the distribution curve, with a very low position for Algeria, indicating a very good market access.

**Figure 2—World distribution of market access: Global/Agriculture/Industry**




Source: MacMap-HS6 and author's calculation.

[14] on this point the global figure must be compared to the two sector-level figures

## 2.3 A BILATERAL PERSPECTIVE ON MARKET ACCESS

Table 3 indicates bilateral import duty, that is to say the average duty faced on exports of countries ranked in columns, at destination of countries ranked in rows. For example, Lebanon faces an 18.4% tariff on its exports to Algeria.

Remarkably, the duties that the SM countries' exports to the European Union face are very low: from 0% for Algeria up to 2.2% for Lebanon. It is quite similar to the excellent access that LDCs have been granted for their exports to Europe. This is a result of the Euromed agreement — even if its product coverage is far from complete, it is quite positive in industry and especially in apparel and clothing where SM countries are competitive. This is an important element of trade for these countries since the European Union is one of the richest markets in the world and since it is a close destination for SM countries' exports. The market access and proximity can influence the geographical distribution of SM countries' exports. Access to other OECD markets is much more restricted. Average duties that SM countries face on exports to MICs and LDCs are much higher.

## Table 3—Bilateral protection – 2001

| | | Partner | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Algeria* | *Egypt* | *Jordan* | *Lebanon* | *Libya* | *Morocco* | *Syria* | *Tunisia* | *Turkey* | *Australia* | *Canada* | *EU* | *Japan* | *Switzerland* | *US* | *Argentina* | *Brazil* | *China* | *India* | *Pakistan* | *South Africa* | *Bangladesh* | *Cambodia* | *Chad* | *Ethiopia* | *Lesotho* | *Madagascar* |
| Reporter | *Algeria* | | 14.6% | 15.3% | 18.4% | 8.6% | 0.0% | 12.8% | 19.1% | 19.7% | 11.1% | 10.3% | 14.6% | 12.9% | 12.4% | 12.0% | 14.0% | 14.6% | 19.9% | 17.0% | 17.8% | 14.8% | 18.1% | 15.5% | 5.5% | 9.4% | 8.4% | 23.4% |
| | *Egypt* | 7.3% | | 10.2% | 17.6% | 3.2% | 14.0% | 23.8% | 15.1% | 77.2% | 11.7% | 10.1% | 28.6% | 17.7% | 12.8% | 28.2% | 16.0% | 22.8% | 142.6% | 51.6% | 45.0% | 35.2% | 63.9% | 42.4% | 6.1% | 7.0% | 13.0% | 0.0% |
| | *Jordan* | 18.8% | 5.8% | | 7.9% | 3.6% | 4.5% | 5.0% | 7.1% | 16.2% | 6.9% | 7.8% | 12.6% | 10.9% | 8.2% | 9.9% | 9.8% | 11.1% | 15.9% | 10.4% | 3.9% | 14.1% | 5.7% | 4.4% | 1.1% | 4.5% | 2.6% | 23.4% |
| | *Lebanon* | 2.0% | 3.3% | 5.8% | | 2.3% | 1.8% | 2.2% | 4.5% | 7.8% | 2.5% | 3.0% | 4.7% | 3.0% | 2.8% | 3.8% | 5.0% | 4.8% | 5.5% | 3.4% | 2.8% | 5.7% | 3.3% | 1.9% | 0.5% | 3.2% | 1.7% | 4.0% |
| | *Libya* | 37.9% | 7.6% | 5.2% | 11.6% | | 0.0% | 24.0% | 7.0% | 18.7% | 15.5% | 16.0% | 21.6% | 21.7% | 15.2% | 20.5% | 24.4% | 19.4% | 18.9% | 9.8% | 14.1% | 17.1% | 8.0% | 10.2% | 1.4% | 7.7% | 27.1% | 6.5% |
| | *Morocco* | 0.0% | 20.5% | 11.1% | 16.6% | 0.0% | | 12.7% | 15.8% | 34.1% | 31.4% | 22.1% | 18.6% | 17.9% | 16.8% | 19.5% | 28.0% | 26.6% | 28.4% | 33.8% | 38.6% | 28.0% | 30.5% | 36.6% | 4.0% | 27.6% | 10.9% | 33.1% |
| | *Syria* | 10.1% | 16.1% | 10.8% | 17.2% | 7.1% | 9.7% | | 18.3% | 27.7% | 8.3% | 10.1% | 20.0% | 17.6% | 7.9% | 14.0% | 16.7% | 18.0% | 25.1% | 13.4% | 30.3% | 17.0% | 17.9% | 23.8% | 28.8% | 14.8% | 8.3% | 22.8% |
| | *Tunisia* | 4.0% | 15.9% | 15.7% | 21.8% | 4.7% | 16.6% | 12.8% | | 40.1% | 30.4% | 38.7% | 12.0% | 20.6% | 22.2% | 23.7% | 33.2% | 25.0% | 32.0% | 30.3% | 25.9% | 28.8% | 28.3% | 28.4% | 1.8% | 34.3% | 10.4% | 34.8% |
| | *Turkey* | 0.6% | 12.0% | 5.4% | 11.4% | 1.3% | 12.1% | 6.6% | 16.1% | | 17.6% | 10.6% | 3.2% | 4.4% | 0.6% | 6.2% | 16.7% | 18.6% | 9.4% | 14.5% | 9.1% | 11.1% | 7.8% | 8.6% | 0.2% | 6.5% | 2.2% | 19.3% |
| | *Australia* | 2.7% | 7.7% | 12.7% | 4.4% | 5.0% | 10.4% | 5.7% | 13.8% | 12.0% | | 4.2% | 5.8% | 6.3% | 2.8% | 3.3% | 2.4% | 3.2% | 6.4% | 8.1% | 14.8% | 4.3% | 16.3% | 17.9% | 0.1% | 0.7% | 19.8% | 8.0% |
| | *Canada* | 0.0% | 4.5% | 9.9% | 4.7% | 0.4% | 8.0% | 1.1% | 9.8% | 8.0% | 4.4% | | 4.7% | 2.6% | 3.0% | 0.5% | 2.1% | 4.3% | 4.9% | 6.0% | 10.7% | 1.7% | 15.1% | 17.2% | 0.0% | 0.4% | 18.5% | 6.4% |
| | *EU* | 0.0% | 1.3% | 2.0% | 2.2% | 0.3% | 0.9% | 0.4% | 1.6% | 1.1% | 9.3% | 4.8% | 0.3% | 4.0% | 0.6% | 3.6% | 6.6% | 7.0% | 4.1% | 5.5% | 2.2% | 2.9% | 0.0% | 0.0% | 0.0% | 0.9% | 0.0% | 1.0% |
| | *Japan* | 0.9% | 7.2% | 6.2% | 6.8% | 0.2% | 6.5% | 1.4% | 6.4% | 4.9% | 11.9% | 3.7% | 4.6% | | 1.8% | 3.0% | 8.6% | 7.6% | 3.8% | 12.9% | 20.9% | 3.4% | 0.2% | 0.6% | 0.0% | 7.5% | 0.3% | 3.4% |
| | *Switzerland* | 0.0% | 6.7% | 18.2% | 7.9% | 0.0% | 8.1% | 1.8% | 3.5% | 6.9% | 18.2% | 5.5% | 3.9% | 1.2% | | 5.4% | 16.7% | 13.4% | 1.4% | 5.3% | 11.7% | 2.7% | 0.1% | 0.0% | 0.0% | 3.1% | 0.2% | 0.3% |
| | *US* | 0.2% | 3.7% | 4.2% | 2.3% | 0.2% | 5.8% | 1.1% | 6.3% | 5.9% | 2.0% | 0.1% | 2.8% | 1.9% | 2.2% | | 3.5% | 3.0% | 4.5% | 4.6% | 8.2% | 0.7% | 11.7% | 12.4% | 2.0% | 0.6% | 12.0% | 5.0% |
| | *Argentina* | 0.2% | 13.0% | 10.7% | 15.3% | 1.0% | 7.9% | 7.7% | 9.5% | 16.2% | 11.1% | 12.5% | 13.8% | 13.5% | 11.3% | 13.2% | | 4.7% | 15.4% | 13.9% | 16.6% | 12.5% | 16.0% | 9.3% | 7.7% | 10.8% | 17.0% | 12.8% |
| | *Brazil* | 0.4% | 10.9% | 7.1% | 10.3% | 1.0% | 7.9% | 5.0% | 11.6% | 15.7% | 8.6% | 8.8% | 13.9% | 14.0% | 9.6% | 10.6% | 3.3% | | 15.2% | 11.6% | 14.5% | 11.7% | 13.5% | 9.7% | 9.1% | 6.6% | 9.9% | 10.1% |
| | *China* | 4.6% | 10.6% | 10.3% | 13.8% | 1.7% | 9.8% | 6.8% | 16.2% | 19.2% | 11.1% | 10.4% | 16.4% | 15.4% | 11.2% | 13.7% | 24.6% | 24.2% | | 12.6% | 11.1% | 13.8% | 8.5% | 20.7% | 2.1% | 7.4% | 17.4% | 5.5% |
| | *India* | 15.6% | 24.6% | 29.4% | 32.1% | 31.2% | 30.4% | 13.4% | 31.0% | 34.1% | 34.6% | 38.7% | 32.9% | 36.0% | 33.8% | 30.8% | 48.3% | 34.6% | 34.9% | | 41.3% | 34.7% | 13.2% | 31.3% | 28.4% | 35.9% | 34.5% | 35.8% |
| | *Pakistan* | 9.6% | 12.4% | 15.1% | 17.6% | 12.6% | 12.6% | 7.8% | 17.5% | 21.1% | 11.7% | 13.4% | 19.4% | 30.5% | 8.1% | 17.7% | 35.9% | 22.3% | 19.8% | 18.4% | | 14.4% | 12.0% | 12.8% | 15.9% | 23.2% | 24.7% | 20.3% |
| | *South Africa* | 1.8% | 10.3% | 4.7% | 14.7% | 0.4% | 5.3% | 8.5% | 6.0% | 15.6% | 15.9% | 10.2% | 8.2% | 7.5% | 2.9% | 8.0% | 8.6% | 18.1% | 12.6% | 13.9% | 17.4% | | 18.1% | 6.1% | 13.3% | 2.9% | 0.0% | 11.6% |
| | *Bangladesh* | 13.3% | 21.3% | 13.0% | 19.6% | 17.3% | 15.5% | 7.4% | 14.4% | 23.2% | 9.5% | 10.1% | 14.9% | 17.2% | 7.2% | 15.8% | 17.3% | 19.2% | 20.5% | 17.2% | 18.4% | 12.0% | | 12.8% | 23.8% | 19.7% | 19.0% | 29.4% |
| | *Cambodia* | 3.8% | 9.1% | 9.6% | 15.6% | 6.4% | 9.1% | 10.9% | 9.5% | 14.2% | 7.7% | 11.0% | 14.4% | 17.6% | 4.1% | 15.7% | 10.6% | 12.0% | 13.1% | 11.3% | 9.0% | 7.6% | 15.0% | | 10.5% | 13.6% | 14.6% | 15.3% |
| | *Chad* | 11.3% | 15.9% | 11.5% | 15.8% | 7.5% | 23.3% | 20.4% | 24.0% | 18.5% | 11.8% | 13.1% | 14.8% | 14.3% | 12.7% | 11.9% | 14.8% | 21.9% | 20.2% | 17.8% | 16.4% | 16.6% | 10.1% | 22.3% | | 13.9% | 12.7% | 18.7% |
| | *Ethiopia* | 5.9% | 9.4% | 9.0% | 15.1% | 0.8% | 26.4% | 27.3% | 21.0% | 16.8% | 9.6% | 8.0% | 14.8% | 11.5% | 12.2% | 9.4% | 9.6% | 9.2% | 22.6% | 17.3% | 11.6% | 14.4% | 18.6% | 27.8% | 13.8% | | 15.7% | 12.9% |
| | *Lesotho* | 3.6% | 6.9% | 6.1% | 9.2% | 2.5% | 3.1% | 15.5% | 7.7% | 13.2% | 4.9% | 10.9% | 7.3% | 8.7% | 1.3% | 9.6% | 8.8% | 17.5% | 9.1% | 14.0% | 9.3% | 0.0% | 5.7% | 2.9% | 22.4% | 8.2% | | 4.5% |
| | *Madagascar* | 0.7% | 0.0% | 2.3% | 4.9% | 0.3% | 5.8% | 5.8% | 4.9% | 3.7% | 2.1% | 2.4% | 4.5% | 5.4% | 4.3% | 3.2% | 2.4% | 7.8% | 5.6% | 3.8% | 1.6% | 4.4% | 6.8% | 7.6% | 3.5% | 5.2% | 3.5% | |

Source: MacMap-HS6 and author's calculation.

## 2.4 ASSESSING THE IMPACT OF PREFERENCES

Table 4 evaluates the impact of trade preferences on access to foreign markets. The column "Apparent margin" provides the difference between the world average duty faced on exports and the national average; this is given for each country, globally, and for each sector. This apparent margin is positive for Algeria, Libya, Morocco, and Syria, highlighting a better access to foreign markets than the world average. MICs are frequently penalized by a negative apparent margin, while LDCs are favored.

But the information from the first column must be carefully interpreted. As previously explained, differences in apparent margins clearly reflect several points: (i) trade preferences granted on exports; (ii) regional agreements; (iii) a geographical composition effect; and (iv) a product composition effect. Bouet, Fontagne and Jean (2005) have proposed a method to disentangle the composition effect (difference in market access due to the sector and geographic composition of trade) and the preference effect (called "True Preferential Margin" on Table 4, reflecting the impact of regional agreements and preferences on market access). They are indicated on Table 4 — a positive value reflects that market access is improved due to this effect.

The Euromed agreements have clearly given SM countries a large preference in the industrial activity. For Egypt, Jordan, Lebanon, Morocco, Syria, Tunisia, and Turkey, a major part of their exports is apparel. As this product is significantly taxed in the European MFN regime, it results in a positive true preferential margin. Conversely, the concentration of Algerian and Libyan exports in gas (see the product composition of SM

countries' trade on Table 5), on which imports duties are low throughout the world, implies a positive composition effect.

The external trade of these countries is strongly affected by close economic relations with Europe, which have evolved due to geographic proximity and the high level of European income, but also due to an important role that trade agreements may have played. Figure 3 measures this point.

## Table 4—Apparent margin, composition effect and true preferential margin on exports

| | | Global | | | Agriculture | | | Industry | | | Primary (not agric.) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apparent margin | Composition effect | True preferential margin | Apparent margin | Composition effect | True preferential margin | Apparent margin | Composition effect | True preferential margin | Apparent margin | Composition effect | True preferential margin |
| **SM countries** | Algeria | 4.4% | 5.4% | -1.0% | 8.0% | 11.4% | -3.5% | 3.4% | 3.8% | -0.3% | 0.5% | 0.6% | -0.2% |
| | Egypt | -0.2% | -2.2% | 2.0% | -0.2% | -1.7% | 1.5% | 0.0% | -2.6% | 2.6% | -0.2% | -0.2% | 0.1% |
| | Jordan | -5.0% | -6.5% | 1.6% | -6.1% | -4.0% | -2.1% | -4.4% | -6.4% | 2.0% | -2.5% | -2.7% | 0.2% |
| | Lebanon | -3.0% | -9.9% | 6.9% | -0.5% | 1.8% | -2.3% | -1.5% | -9.8% | 8.3% | -0.8% | -1.3% | 0.5% |
| | Libya | 4.4% | 5.7% | -1.3% | 6.7% | 12.3% | -5.6% | 1.4% | 1.9% | -0.5% | 0.5% | 0.7% | -0.2% |
| | Morocco | 0.3% | -2.1% | 2.4% | 9.4% | 11.0% | -1.6% | -0.1% | -2.8% | 2.7% | -0.1% | -1.1% | 1.0% |
| | Syria | 1.9% | 1.6% | 0.3% | 6.3% | 8.9% | -2.6% | -2.7% | -6.9% | 4.2% | 0.3% | 0.4% | -0.1% |
| | Tunisia | -0.1% | -2.5% | 2.3% | -2.7% | -0.5% | -2.2% | -0.2% | -3.2% | 3.0% | 0.5% | 0.1% | 0.4% |
| | Turkey | -2.2% | -4.5% | 2.3% | 6.0% | 6.9% | -0.9% | -2.5% | -4.9% | 2.4% | -1.6% | -2.2% | 0.5% |
| **OECD countries** | Australia | -3.5% | -4.6% | 1.1% | -11.3% | -14.0% | 2.7% | -0.1% | -0.1% | 0.0% | -0.9% | -0.9% | -0.1% |
| | Canada | 1.4% | 1.3% | 0.1% | 2.4% | 0.5% | 1.9% | 1.4% | 1.6% | -0.1% | 0.4% | 0.4% | 0.0% |
| | EU | -0.4% | -0.3% | -0.1% | 0.6% | 0.2% | 0.4% | -0.1% | 0.2% | -0.3% | -0.5% | -0.6% | 0.1% |
| | Japan | -0.5% | 0.8% | -1.3% | 6.3% | 11.7% | -5.5% | -1.3% | -0.4% | -0.9% | -3.1% | -3.1% | -0.1% |
| | Switzerland | 2.4% | 2.6% | -0.2% | 0.6% | 2.7% | -2.1% | 2.1% | 2.0% | 0.1% | -0.4% | -0.6% | 0.1% |
| | US | -0.2% | -1.0% | 0.7% | -2.1% | -5.4% | 3.2% | 0.3% | -0.1% | 0.4% | -0.6% | -1.0% | 0.3% |
| **MI countries** | Argentina | -8.0% | -12.1% | 4.0% | -0.4% | -4.2% | 3.8% | -6.3% | -6.2% | -0.1% | -2.5% | -2.5% | 0.0% |
| | Brazil | -5.7% | -6.8% | 1.1% | -6.4% | -6.5% | 0.1% | -2.1% | -2.0% | -0.2% | -0.5% | -0.5% | 0.0% |
| | China | -0.5% | -0.4% | -0.1% | 3.5% | 6.6% | -3.1% | -0.8% | -0.9% | 0.1% | -0.9% | -1.2% | 0.3% |
| | India | -2.0% | -3.5% | 1.5% | 1.0% | 4.0% | -3.0% | -1.3% | -3.1% | 1.8% | -0.7% | -0.8% | 0.1% |
| | Pakistan | -2.8% | -5.7% | 2.9% | -4.7% | -1.7% | -3.1% | -1.2% | -4.7% | 3.5% | -1.6% | -1.9% | 0.3% |
| | South Africa | -1.0% | -0.7% | -0.3% | -1.7% | 1.7% | -3.4% | -1.0% | -0.9% | -0.1% | -0.2% | -0.2% | 0.0% |
| **LDCs** | Bangladesh | 0.5% | -4.7% | 5.2% | 14.8% | 15.4% | -0.6% | -0.4% | -6.0% | 5.6% | -7.3% | -12.8% | 5.5% |
| | Cambodia | 0.1% | -5.3% | 5.4% | 5.7% | 7.6% | -1.9% | -0.6% | -6.5% | 5.9% | -4.6% | -6.9% | 2.2% |
| | Chad | 3.5% | 0.1% | 3.5% | -19.3% | -13.5% | -5.8% | 3.5% | -1.2% | 4.8% | 0.9% | 0.9% | 0.0% |
| | Ethiopia | -2.8% | -3.4% | 0.6% | 8.8% | 13.2% | -4.4% | 1.6% | 1.0% | 0.6% | -15.7% | -15.8% | 0.1% |
| | Lesotho | 0.6% | -5.1% | 5.7% | 11.0% | 3.8% | 7.2% | -0.2% | -6.2% | 6.0% | -13.2% | -13.2% | 0.0% |
| | Madagascar | 1.4% | -2.6% | 4.0% | 13.9% | 16.0% | -2.1% | 0.4% | -4.8% | 5.2% | -1.1% | -2.3% | 1.2% |

Source: MacMap-HS6 and author's calculation.

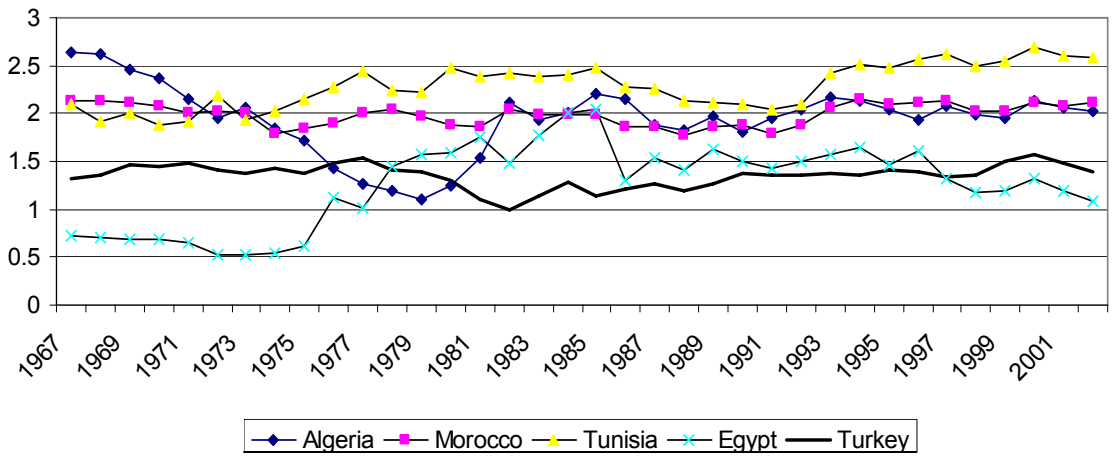
**Table 5—Sector breakdown of SM countries' exports and imports – 2003**

(% of total merchandise exports for exports - % of total merchandise imports for imports)

| | Agric. raw material | | Food | | Fuel | | Manufactures | | Ores and metal | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Exports** | **Imports** | **Exports** | **Imports** | **Exports** | **Imports** | **Exports** | **Imports** | **Exports** | **Imports** |
| Algeria | 0.0 | 2.4 | 0.2 | 22.4 | 97.3 | 0.8 | 2.1 | 73.2 | 0.4 | 1.2 |
| Egypt, Arab Rep. | 7.0 | 4.6 | 8.6 | 24.9 | 43.8 | 5.2 | 31.0 | 48.7 | 3.2 | 2.5 |
| Jordan | 0.2 | 1.6 | 14.5 | 17.9 | 0.3 | 16.7 | 68.8 | 59.6 | 16.1 | 2.1 |
| Lebanon | 1.8 | 1.5 | 19.5 | 18.5 | 0.3 | 16.0 | 68.1 | 61.5 | 9.7 | 2.4 |
| Morocco | 1.8 | 3.3 | 21.5 | 11.0 | 1.1 | 15.7 | 68.6 | 67.2 | 7.1 | 2.8 |
| Syrian Arab Republic | 3.0 | 4.2 | 14.0 | 18.9 | 71.3 | 3.7 | 10.7 | 70.5 | 0.9 | 2.7 |
| Tunisia | 0.9 | 3.0 | 7.6 | 9.1 | 8.6 | 6.9 | 81.5 | 78.3 | 1.5 | 2.7 |
| Turkey | 0.8 | 3.7 | 10.0 | 4.2 | 2.1 | 13.0 | 83.7 | 68.4 | 2.0 | 5.5 |

Source: WTO

**Figure 3—Export bi-ratio-SM countries/Euro zone**




Source: CHELEM and author's calculation.

The statistic used here is an "export bi-ratio [15]": $\frac{X_{i,EU}^{\cdot} / X_{i,\cdot}^{\cdot}}{X_{\cdot,EU}^{\cdot} / X_{\cdot,\cdot}^{\cdot}}$. $X_{i,j}^{h}$ is exports of good *h* from country *i* to country *j*; the dot denotes a sum, and EU means European Union. The numerator measures the share of exports towards Europe in country *i*'s exports[16]. The denominator is the share of exports towards world exports. Thus, if Europe is a relatively key destination for country *i*, this statistic is greater than unity.

As a matter of conclusion, SM countries are very protectionist in agriculture and in industry, but their access to world markets is relatively good. The trade preferences that they have been granted by EU seem to have had a strong impact on orienting the geographic structure of their trade.

[15] For a presentation, see Freudenberg et al., 1998a and 1998b.
[16] On Figure 2 this is the zone France, Belgium, Luxembourg, Germany, Italy, Netherlands, Austria, Spain, Finland, Portugal, Greece. The EU-15 is not available in the CHELEM database.

# 3. WHAT IS THE BEST TRADE STRATEGY FOR SOUTH-MEDITERRANEAN COUNTRIES?

There are a number of strategies that SM countries can pursue in order to open their economies. From a political point of view, South-South regional integration involving Arab countries could be appealing. However, it remains to be seen whether this would be economically feasible as compared to South-North regional integration (envisaged here as an association with the European Union) and/or a multilateral liberalization.

## 3.1 A BRIEF REVIEW OF THE LITERATURE

Computable General Equilibrium Models often have been used to assess the benefits of alternative trade policy options for SM countries. The difference among these models is founded in theoretical assumptions, behavioral parameters, as well as policy information, which makes various studies incomparable. (see Bouet, 2005). These models are not fully convergent because they are based on different trade policy databases, different Armington trade elasticities, and on different theoretical assumptions. Full trade liberalization could be very beneficial for SM countries as large distortions are very high. Using the MIRAGE model of the world economy with a specific focus on developing countries and their agricultural sectors, Bouet, Mevel and Orden (2006) conclude that this trade reform could yield large benefits in terms of real income to Tunisia and Turkey— while Morocco may be hurt by deterioration in terms of trade. There are two factors that potentially explain this scenario. First, Morocco is initially a

net food importer, and full trade liberalization scenario would result in a price increase for agricultural products. Second, full trade liberalization would also imply an erosion of Morocco's preferential access to the European industrial market.

This potentially negative outcome for Morocco, in case of full trade liberalization, contrasts with other assessments in the literature, which unanimously agree that there are substantial positive gains coming from full trade liberalization in SM countries. Chaherli (2002) has carried out a survey of 17 studies between 1997 and 2001, and concludes with a strong note on positive welfare gains associated with multilateral liberalization.

Furthermore, a free trade agreement with the European Union would produce smaller gains for these countries. This is clearly illustrated by Bayar (2001) in the case of Egypt, and Augier and Gasiorek (2001) who conclude on very small static welfare gains. Comparing an FTA with the EU on one hand, and one among Arab countries, on the other hand, Dennis (2006) found out that if both options imply small welfare gains, the FTA with the EU is twice as likely to have better results.

## 3.2 A BRIEF INTRODUCTION OF THE MIRAGE MODEL

In this section, the MIRAGE model is used to analyze several the policy options as mentioned above. Different experiments are carried out, and each one represents a strategy which SM countries might choose in order to open their economies. In each case, implication on welfare, economic activity, remunerations of productive factors, and trade flows are studied in order to draw comparisons and design policy recommendations. These comparisons are done with a baseline scenario under which the world economy grows without any trade reform.

The MIRAGE (Modeling International Relationships in Applied General Equilibrium) model is a multi-sector, multi-region computable general equilibrium model devoted to trade policy analysis. In industry and services, competition is assumed to be imperfect while in agriculture competition is perfect. The horizontal product differentiation is linked to varieties, but also to geographical origin, while vertical differentiation is introduced by distinguishing two quality ranges, according to the country origin of the product. The model is applied in a sequential dynamic set-up from 2006 to 2020, and includes GDP expectations (coming from the World Bank's World Development Indicators) affecting the factor productivity. The model applies recursive dynamics, which means that an investment function modifies the stock of capital at each period, and land supply is endogenous. The number of firms adjusts progressively, either quickly (fragmented sectors) or slowly (segmented sectors). Installed capital is assumed to be immobile, even across sectors and capital reallocation only results from depreciation and investment.

Unskilled labor is imperfectly mobile between agricultural and non-agricultural activities; land supply is endogenous with a distinction between countries with low and high densities of arable land per person—thus low and high elasticity of land supply.

There are 24 trading zones and 16 commodities included in the study (see Table 6). The source of the Social Accounting Matrix is the GTAP6 database; it provides data for Turkey, Morocco and Tunisia. Other SM countries are categorized in two zones "Rest of North Africa" and "Rest of Middle East" which are aggregated here.

**Table 6—Geographic and commodity decomposition**

| No | Code sector | Sector | No | Code country | Country/Region |
|---|---|---|---|---|---|
| 1 | rice | Rice | 1 | aunz | Australia/New Zealand |
| 2 | whea | Wheat | 2 | chin | China |
| 3 | cere | Cereal grains nec | 3 | ddas | Developed Asia |
| 4 | vege | Vegetables fruit nuts | 4 | dgas | Developing Asia |
| 5 | otag | Other agric products | 5 | indi | India |
| 6 | sugr | Sugar | 6 | roec | Rest of OECD |
| 7 | plbf | Plant-based Fibers | 7 | usam | US |
| 8 | meat | Meat and meat products | 8 | amla | Latin America |
| 9 | milk | Milk | 9 | rotw | Rest of the World |
| 10 | fofi | Forestry and fishing | 10 | euro | European Union |
| 11 | prim | Other Primary products | 11 | turk | Turkey |
| 12 | Food | Other food products | 12 | rome | Rest of Middle East |
| 13 | text | Textile | 13 | moro | Morocco |
| 14 | wear | Wearing | 14 | tuni | Tunisa |
| 15 | leat | Leather products | 15 | rona | Rest of North Africa |
| 16 | wopa | Wood and paper products | 16 | ssaf | Sub Saharan Africa |
| 17 | pcop | Petroleum coal products | | | |
| 18 | chem | Chemical products | | | |
| 19 | meta | Metals and metal products | | | |
| 20 | moto | Motor vehicles and equip | | | |
| 21 | equi | Equipment goods | | | |
| 22 | otma | Other manuf products | | | |
| 23 | otse | Other services | | | |
| 24 | trtr | Transport and trade | | | |

With regard to product decomposition, an emphasis has been put on agricultural commodities and on sectors on which protection is high (cereals, meat and meat products, dairy products, sugar, vegetable and fruit, textile, wearing).

## 3.3 EXPERIMENT DESIGN

There are three experiments carried out, and in each case the change in market access is implemented at the HS6 level before aggregation at the sector, and geographic decomposition (Table 6). As the social accounting matrix measures macroeconomic aggregates for 2001, a pre-experiment is done taking into account the main trade reforms

that affected the world economy from 2001 to 2005—such as the enlargement of the EU, the WTO accession of China, the end of implementation of the Uruguay Round, and the granting of the EBA and AGOA schemes. Following this, there are three trade reforms that are implemented in five years from 2006:

i) a South-South regional agreement, which consists of the elimination of all tariff barriers between Turkey, Morocco, Tunisia and the six other SM countries included in the two zones Rest of North Africa and Rest of Middle East. Each country in the experiment does not change its trade policy vis-à-vis the rest of the world. This is a Free Trade Area, but not a Custom Union and tariffs are progressively cut through a 5-year period of time under a linear formula.

ii) A South - North agreement: each SM country negotiates separately a free trade agreement with the European Union, in industry and in agriculture; and other trade policies are unchanged and the same progressive scheme is utilized.

iii) Multilateral full trade liberalization: simulating a Doha Development Agenda is rather feasible; however, this methodology is somewhat mis-leading as the final liberalizing package as of April 2006 is still unknown. Simulating full trade liberalization has its advantages as for each zone, save for the "Rest of the World"[17], tariffs are annulled.

[17] This zone consists of WTO members and non members, but it is dominated by Russia.

## 3.4 EXPERIMENT RESULTS

### *3.4.1 Impact of a South – South free trade agreement*

According to the experiments here, the impact of a free trade agreement among SM countries varies. The effects on macroeconomic variables are reflected on Table 7[18]. This is a long -term impact and it occurs over a 15-year period. While other zones of the Rest of the World are little affected by these trade negotiations, the stakes are higher for SM countries. Looking at individual countries however, some of them win and some lose from this type of trade liberalization.

**Table 7—Impact of a South-South agreement on macroeconomic variables (rate of growth - % - lower figures in italics represent initial values)**

| | **Morocco** | **Tunisia** | **Turkey** | **Rest of Middle East** | **Rest of North Africa** | **Sub-Saharan Africa** | **European Union** | **United States** |
|---|---|---|---|---|---|---|---|---|
| Exports (val _ no intra) | 2.5 | 8.1 | 7.6 | 0.0 | 5.9 | 0.0 | 0.0 | 0.0 |
| | *12.1* | *10.2* | *51.9* | *223.4* | *43.2* | *104.8* | *1210.2* | *987.9* |
| Exports (val) | 2.5 | 8.1 | 7.6 | 0.0 | 6.1 | 0.0 | 0.0 | 0.0 |
| | *12.1* | *10.2* | *51.9* | *240.2* | *43.4* | *121.5* | *2858.7* | *987.9* |
| GDP (vol) | 0.0 | 0.7 | 0.3 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| | *40.3* | *24.1* | *196.5* | *762.9* | *221.1* | *378.9* | *8847.9* | *11649.9* |
| Real return to capital | 0.0 | 1.5 | 0.7 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 |
| Real return to land | -0.4 | -5.6 | 0.8 | 0.0 | 3.2 | -0.1 | 0.0 | 0.0 |
| Real return to natural resources | -0.4 | -0.7 | -3.1 | 0.0 | 5.6 | 0.0 | -0.1 | 0.0 |
| Skilled real wages | 0.1 | 1.1 | 0.3 | -0.1 | 2.2 | 0.0 | 0.0 | 0.0 |
| Unskilled real wages | 0.0 | 0.0 | 1.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 |
| Unskilled real wages in agriculture | -0.2 | -1.9 | 0.9 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 |
| Unskilled real wages in non agricultural sectors | 0.0 | 0.6 | 1.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 |
| Welfare | 0.0 | 0.7 | 0.8 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 |

Source: author's calculation.

[18] More detailed results are available if requested to the author.

The main beneficiaries, however, are the 'rest of North Africa' zone (Algeria, Libya, and Egypt, whose welfare increases by almost 2%), Turkey, and Tunisia. This substantial gain is due to a cut in distortion and to increased economic activity, driven by more exports to SM countries. Turkey and Tunisia have a real comparative advantage in textile and apparel and as market access in this sector is restricted in other SM countries, Turkish and Tunisian exports of these products increase significantly: 13% and 18% in the case of textile, respectively, and 2% and 5% in the case of wearing. Initially, textile and apparel represent 21% and 25% of Turkish and Tunisian exports of goods and services and this reflects a huge increase in South – South trade flows. Gains for Algeria, Libya, and Egypt mainly come from allocative efficiency gains obtained through reduction of their own protection.

The augmentations of Morocco and Rest of Middle East' exports are timid for two different reasons: exports from the Rest of Middle East are dominated by oil and petroleum from Syria, but also from other non SM countries (Saudi Arabia, Iraq, Iran…). Morocco's exports have prioritized OECD (at more than 77%) and are relatively unconcerned with the South Mediterranean destination (4.9% of Moroccan exports instead of 10% for Tunisia and more than 11% for Turkey), reflecting potentially infrastructure problems. Furthermore, the implementation of the free trade agreement between South-Mediterranean countries implies trade diversion for countries like Morocco. Initially its imports from Europe represent 59% of its total imports; the agreement creates trade discrimination between European and other SM countries' suppliers. Imports of rice, wheat, fruit and vegetables, meat from Europe are partially

replaced by imports from other SM countries. This substitution clearly means deterioration in Morocco's terms of trade.

**Table 8—Impact of South-South agreements on sector production (initial level-usd bln-and rate of growth after 14 years - % -lower figures in italics represent initial values)**

| | Morocco | Tunisa | Turkey | Rest of Middle East | Rest of North Africa | Sub Saharan Africa | European Union | US |
|---|---|---|---|---|---|---|---|---|
| Rice | -0.9 | 4.3 | -31.6 | -0.2 | 17.6 | -0.1 | -0.2 | -0.3 |
| | *0.0* | *0.0* | *0.0* | *3.1* | *0.3* | *3.6* | *4.0* | *4.6* |
| Wheat | -0.5 | -38.1 | 18.0 | -0.1 | 2.2 | -0.2 | -0.9 | -0.6 |
| | *1.9* | *0.8* | *2.3* | *4.1* | *10.2* | *1.4* | *12.8* | *8.0* |
| Cereal grains nec | -0.2 | 4.6 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 |
| | *0.9* | *0.1* | *1.0* | *1.8* | *3.3* | *12.0* | *14.2* | *26.2* |
| Vegetables fruit nuts | -0.2 | -4.5 | -0.1 | 0.0 | 1.0 | 0.0 | 0.1 | 0.0 |
| | *2.3* | *2.5* | *14.0* | *20.1* | *17.9* | *17.4* | *53.8* | *32.7* |
| Other agric products | 2.5 | -27.1 | -5.2 | 0.1 | -8.5 | -0.2 | -0.1 | 0.0 |
| | *1.5* | *0.2* | *2.9* | *4.4* | *3.8* | *22.7* | *64.5* | *57.8* |
| Sugar | 0.0 | 0.5 | 0.2 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 |
| | *1.3* | *0.3* | *10.5* | *4.8* | *5.4* | *5.4* | *28.5* | *37.9* |
| Plant-based Fibers | 0.0 | 1.5 | -0.7 | 0.1 | 1.9 | -0.1 | 0.7 | 0.1 |
| | *0.4* | *0.0* | *4.1* | *1.7* | *1.4* | *2.3* | *1.7* | *8.9* |
| Meat and meat products | -1.5 | -0.2 | 0.5 | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 |
| | *2.9* | *1.9* | *5.8* | *30.0* | *17.2* | *25.8* | *319.9* | *285.9* |
| Milk | 0.3 | 11.4 | 0.7 | 0.0 | 2.3 | 0.0 | 0.0 | 0.0 |
| | *1.1* | *0.4* | *6.2* | *14.4* | *5.0* | *3.6* | *171.3* | *127.3* |
| Forestry and fishing | 0.1 | -0.3 | -0.5 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 |
| | *0.6* | *0.3* | *2.5* | *3.9* | *2.8* | *14.0* | *63.0* | *24.9* |
| Other Primary products | -0.4 | -0.4 | -5.9 | 0.0 | 2.7 | 0.0 | -0.1 | 0.0 |
| | *4.2* | *2.5* | *7.3* | *172.3* | *44.1* | *59.2* | *306.0* | *275.5* |
| Other food products | 0.6 | 0.5 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 |
| | *4.6* | *1.1* | *5.4* | *25.9* | *16.2* | *44.9* | *456.4* | *527.9* |
| Textile | 16.4 | 8.4 | 17.2 | -1.1 | -47.4 | 0.0 | -0.1 | 0.0 |
| | *1.0* | *1.1* | *16.4* | *12.8* | *4.5* | *11.4* | *124.3* | *154.4* |
| Wearing | 4.2 | 1.3 | 60.0 | -0.6 | -80.3 | -0.3 | -0.6 | 0.0 |
| | *2.7* | *2.4* | *6.8* | *10.8* | *6.3* | *5.4* | *98.7* | *115.3* |
| Leather products | -0.2 | 3.7 | 0.9 | 0.0 | -0.4 | 0.0 | 0.0 | 0.0 |
| | *1.5* | *1.0* | *1.6* | *3.7* | *4.7* | *2.4* | *60.1* | *20.2* |
| Wood and paper products | 0.0 | 3.4 | -2.4 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 |
| | *2.3* | *1.4* | *5.8* | *22.6* | *11.1* | *18.6* | *518.1* | *699.3* |
| Petroleum coal products | 0.0 | 0.6 | -0.6 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| | *1.5* | *0.4* | *7.1* | *55.0* | *12.3* | *12.6* | *150.3* | *165.3* |

**Table 8—Impact of South-South agreements on sector production (con't)**

| | Morocco | Tunisa | Turkey | Rest of Middle East | Rest of North Africa | Sub Saharan Africa | European Union | US |
|---|---|---|---|---|---|---|---|---|
| Chemical products | -0.5 | 11.1 | -2.2 | -0.2 | 1.9 | 0.0 | 0.0 | 0.0 |
| | *4.1* | *2.8* | *12.7* | *35.8* | *15.7* | *21.2* | *812.1* | *805.8* |
| Metals and metal products | -0.7 | -0.5 | -9.8 | 0.5 | 5.9 | 0.3 | 0.0 | 0.0 |
| | *2.5* | *1.2* | *13.8* | *22.2* | *9.4* | *32.0* | *654.6* | *599.3* |
| Motor vehicles and equip | -0.7 | 6.2 | -6.3 | 0.1 | 1.3 | 0.2 | 0.0 | 0.0 |
| | *1.3* | *0.7* | *9.2* | *11.1* | *5.1* | *12.8* | *694.3* | *754.4* |
| Equipment goods | 0.6 | 3.4 | -6.2 | 0.1 | 4.8 | 0.1 | 0.0 | 0.0 |
| | *3.2* | *1.7* | *16.1* | *29.2* | *6.3* | *13.0* | *1191.2* | *1266.3* |
| Other manuf products | -0.1 | -2.3 | -0.8 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| | *2.5* | *1.3* | *13.4* | *75.5* | *13.1* | *34.7* | *491.1* | *408.8* |
| Other services | 0.0 | -0.2 | -0.3 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 |
| | *31.6* | *11.7* | *68.2* | *384.5* | *127.4* | *173.7* | *7159.7* | *10393.2* |
| Transport and trade | 0.0 | 0.2 | -1.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 |
| | *10.8* | *8.4* | *81.9* | *169.8* | *63.6* | *117.7* | *2454.7* | *3587.8* |

Source: author's calculation.

Table 8 gives evidence of the production shifts across sectors in South Mediterranean countries, European Union, Sub-Saharan Africa and US; inter-sector reallocations of production factor are smooth in Morocco and the rest of Middle East countries (except the significant increase in activity for textile in Morocco). Nonetheless, they are larger in Turkey, Tunisia and Rest of North Africa, with very significant increases in the textile, apparel and wheat sectors in Turkey (textile, apparel, milk, metals and metal products in Tunisia) at the price of activity contraction in rice, metals and metal products (wheat and other agricultural products respectively).

### *3.4.2 Impact of a North – South free trade agreement*

The case of North – South integration, and more precisely the impact of nine bilateral free trade pacts signed separately by each SM zone with the European Union is now examined. Macroeconomic results are indicated on Table 9.

They clearly differ from those derived from a South-South agreement as welfare increases for only Turkey and Tunisia, while welfare is significantly reduced in Morocco and North Africa.

GDP increases in each of the three SM countries. These three free trade agreements have a large trade creation effect, especially in the case of Morocco (whose exports are increased by 42%, due to Morocco's export destination) and Tunisia ( 46.2%). As in 2001, bilateral protection between Turkey and European Union is lower, except for sugar and milk in the case of European market access and agricultural products in the Turkish one, trade creation effect is smaller between these two zones, and this implies large allocative efficiency effects.

But the implementation of a free trade agreement has detrimental effects as SM countries' agricultural imports are diverted from competitive producers (Australia – New Zealand; Latin America) to non – competitive (European Union). Import prices of agricultural products are thus substantially increased in these SM countries (see the negative terms of trade effects for all SM countries, particularly strong in the case of Morocco and Rest of North Africa).

**Table 9—Impact of North-South agreements on macroeconomic variables (rate of growth - % - lower figures in italics represent initial values)**

| Indicator | Morocco | Tunisa | Turkey | Rest of Middle East | Rest of North Africa | Sub Saharan Africa | European Union | US |
|---|---|---|---|---|---|---|---|---|
| Exports (val _ no intra) | 42.0 | 46.2 | 7.4 | 0.1 | 19.1 | -0.2 | 2.0 | 0.0 |
| | *12.1* | *10.2* | *51.9* | *223.4* | *43.2* | *104.8* | *1210.2* | *987.9* |
| Exports (val) | 42.0 | 46.2 | 7.4 | 0.0 | 19.0 | -0.2 | 0.8 | 0.0 |
| | *12.1* | *10.2* | *51.9* | *240.2* | *43.4* | *121.5* | *2858.7* | *987.9* |
| GDP (vol) | 0.5 | 1.6 | 0.6 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 |
| | *40.3* | *24.1* | *196.5* | *762.9* | *221.1* | *378.9* | *8847.9* | *11649.9* |
| Real return to capital | 1.8 | 1.3 | 0.5 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 |
| Real return to land | -9.3 | 20.8 | -2.2 | -0.2 | -0.3 | -0.1 | 0.6 | -0.2 |
| Real return to natural resources | -8.2 | -21.9 | -1.3 | 0.0 | 3.5 | 0.0 | -0.2 | -0.1 |
| Skilled real wages | -0.6 | -2.3 | 0.9 | -0.2 | -2.2 | -0.1 | 0.1 | 0.0 |
| Terms of trade | -5.9 | -0.9 | -0.5 | -0.2 | -3.7 | -0.1 | 0.2 | 0.0 |
| Unskilled real wages | -1.6 | 4.7 | 0.3 | -0.2 | -2.2 | -0.1 | 0.2 | 0.0 |
| Welfare | -0.8 | 1.3 | 0.5 | -0.1 | -0.9 | -0.1 | 0.1 | 0.0 |

Source: author's calculation.

**Table 10—Impact of North-South agreements on sectoral production (initial level – USD bln- and rate of growth after 14 years - % - lower figures in italics represent initial values)**

| | Morocco | Tunisa | Turkey | Rest of Middle East | Rest of North Africa | Sub Saharan Africa | European Union | US |
|---|---|---|---|---|---|---|---|---|
| Rice | -79.7 | 904.7 | 102.2 | -0.4 | 220.9 | -0.4 | -22.7 | -1.2 |
| | *0.0* | *0.0* | *0.0* | *3.1* | *0.3* | *3.6* | *4.0* | *4.6* |
| Wheat | -20.0 | -72.1 | -11.0 | -0.1 | 2.2 | 0.3 | 10.9 | -1.4 |
| | *1.9* | *0.8* | *2.3* | *4.1* | *10.2* | *1.4* | *12.8* | *8.0* |
| Cereal grains nec | -1.7 | -12.6 | -14.5 | 0.0 | 0.8 | 0.0 | 1.2 | -0.5 |
| | *0.9* | *0.1* | *1.0* | *1.8* | *3.3* | *12.0* | *14.2* | *26.2* |
| Vegetables fruit nuts | 8.9 | -10.2 | 1.3 | 0.0 | -0.6 | 0.0 | 0.0 | -0.1 |
| | *2.3* | *2.5* | *14.0* | *20.1* | *17.9* | *17.4* | *53.8* | *32.7* |
| Other agric products | 55.4 | -29.5 | -6.3 | -0.1 | -9.3 | -0.2 | 0.1 | -0.2 |
| | *1.5* | *0.2* | *2.9* | *4.4* | *3.8* | *22.7* | *64.5* | *57.8* |
| Sugar | 0.4 | 25.8 | 9.4 | -0.3 | 0.1 | -1.1 | -4.7 | 0.0 |
| | *1.3* | *0.3* | *10.5* | *4.8* | *5.4* | *5.4* | *28.5* | *37.9* |
| Plant-based Fibers | 1.5 | -10.7 | 0.6 | -0.6 | 4.4 | -0.7 | -1.3 | -0.5 |
| | *0.4* | *0.0* | *4.1* | *1.7* | *1.4* | *2.3* | *1.7* | *8.9* |
| Meat and meat products | -22.5 | 154.9 | -24.9 | -0.2 | -0.7 | -0.1 | 0.2 | -0.2 |
| | *2.9* | *1.9* | *5.8* | *30.0* | *17.2* | *25.8* | *319.9* | *285.9* |
| Milk | -55.5 | -19.9 | -14.2 | -0.3 | -3.8 | 0.2 | 1.9 | 0.0 |
| | *1.1* | *0.4* | *6.2* | *14.4* | *5.0* | *3.6* | *171.3* | *127.3* |
| Forestry and fishing | 0.3 | -4.2 | -2.0 | -0.1 | -1.4 | 0.0 | -0.1 | 0.0 |
| | *0.6* | *0.3* | *2.5* | *3.9* | *2.8* | *14.0* | *63.0* | *24.9* |
| Other Primary products | -5.1 | -18.6 | 0.4 | 0.1 | 4.7 | 0.0 | -0.4 | -0.1 |
| | *4.2* | *2.5* | *7.3* | *172.3* | *44.1* | *59.2* | *306.0* | *275.5* |
| Other food products | 7.2 | -13.9 | -1.6 | -0.4 | -3.2 | 0.0 | 0.2 | 0.0 |
| | *4.6* | *1.1* | *5.4* | *25.9* | *16.2* | *44.9* | *456.4* | *527.9* |
| Textile | 227.3 | 35.2 | 3.1 | -1.5 | -34.0 | -0.2 | 4.3 | -0.2 |
| | *1.0* | *1.1* | *16.4* | *12.8* | *4.5* | *11.4* | *124.3* | *154.4* |
| Wearing | 130.4 | 98.1 | -1.6 | -0.6 | -64.1 | -0.7 | 5.5 | 0.0 |
| | *2.7* | *2.4* | *6.8* | *10.8* | *6.3* | *5.4* | *98.7* | *115.3* |
| Leather products | -31.8 | -8.1 | 10.6 | -0.6 | -1.3 | 0.1 | 0.5 | -0.1 |
| | *1.5* | *1.0* | *1.6* | *3.7* | *4.7* | *2.4* | *60.1* | *20.2* |
| Wood and paper products | -13.1 | -16.9 | 0.3 | -0.2 | -3.0 | 0.1 | 0.1 | 0.0 |
| | *2.3* | *1.4* | *5.8* | *22.6* | *11.1* | *18.6* | *518.1* | *699.3* |
| Petroleum coal products | -4.2 | -8.3 | 0.3 | -0.1 | 5.8 | 0.0 | -0.1 | -0.1 |
| | *1.5* | *0.4* | *7.1* | *55.0* | *12.3* | *12.6* | *150.3* | *165.3* |
| Chemical products | -3.1 | -17.2 | 0.9 | -0.1 | -0.6 | 0.1 | 0.0 | 0.0 |
| | *4.1* | *2.8* | *12.7* | *35.8* | *15.7* | *21.2* | *812.1* | *805.8* |
| Metals and metal products | -6.3 | -24.2 | 10.0 | -0.3 | 7.2 | -0.3 | -0.3 | 0.0 |
| | *2.5* | *1.2* | *13.8* | *22.2* | *9.4* | *32.0* | *654.6* | *599.3* |

**Table 10—Impact of North-South agreements on sectoral production (con't)**

| | Morocco | Tunisa | Turkey | Rest of Middle East | Rest of North Africa | Sub Saharan Africa | European Union | US |
|---|---|---|---|---|---|---|---|---|
| Motor vehicles and equip | -14.6 | -23.4 | 0.1 | -0.2 | -13.5 | 0.3 | 0.1 | 0.0 |
| | *1.3* | *0.7* | *9.2* | *11.1* | *5.1* | *12.8* | *694.3* | *754.4* |
| Equipment goods | 7.8 | -22.1 | 0.5 | 0.5 | 0.0 | 0.3 | -0.4 | 0.0 |
| | 3.2 | 1.7 | 16.1 | 29.2 | 6.3 | 13.0 | 1191.2 | 1266.3 |
| Other manuf products | -3.3 | -12.5 | 1.0 | 0.0 | -0.3 | 0.1 | 0.0 | 0.0 |
| | 2.5 | 1.3 | 13.4 | 75.5 | 13.1 | 34.7 | 491.1 | 408.8 |
| Other services | -1.5 | -2.2 | -0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 |
| | 31.6 | 11.7 | 68.2 | 384.5 | 127.4 | 173.7 | 7159.7 | 10393.2 |
| Transport and trade | -0.1 | -4.4 | 0.1 | 0.0 | 0.5 | 0.0 | -0.1 | 0.0 |
| | 10.8 | 8.4 | 81.9 | 169.8 | 63.6 | 117.7 | 2454.7 | 3587.8 |

Source: author's calculation.

These agreements clearly indicate much larger shifts in production structure than in the case of a South – South agreement, as illustrated on Table 10. A North-South regional agreement pushes large contractions of some sectors' output and expansions of others. This process does not match the general scheme of 'South specialized in agriculture vs North in industry': Turkey's wheat, cereal grains, milk and meat sectors are contracting while textile, leather and metal sectors are expanding. In Morocco, rice, wheat, meat, and milk sectors are contracting, while textile, wearing and equipment goods sectors are expanding.

### *3.4.3 A multilateral full trade liberalization*

The third simulation is a full trade liberalization applied on a multilateral basis and at the WTO level (see Table 11).

**Table 11—Impact of multilateral full trade liberalization on macroeconomic variables (rate of growth - %)**

| | Morocco | Tunisia | Turkey | Rest of Middle East | Rest of North Africa | Sub-Saharan Africa | European Union | United States |
|---|---|---|---|---|---|---|---|---|
| Exports (val _ no intra) | 38.7 | 29.5 | 10.0 | 5.7 | 21.3 | 16.7 | 8.6 | 6.7 |
| | *12.1* | *10.2* | *51.9* | *223.4* | *43.2* | *104.8* | *1210.2* | *987.9* |
| Exports (val) | 38.7 | 29.5 | 10.0 | 5.5 | 21.3 | 19.7 | 2.9 | 6.7 |
| | *12.1* | *10.2* | *51.9* | *240.2* | *43.4* | *121.5* | *2858.7* | *987.9* |
| GDP (vol) | 2.5 | 3.2 | 0.8 | 0.4 | 2.7 | 1.3 | 0.1 | 0.0 |
| | *40.3* | *24.1* | *196.5* | *762.9* | *221.1* | *378.9* | *8847.9* | *11649.9* |
| Real return to capital | 1.7 | 1.4 | 0.4 | 0.1 | 1.9 | -0.6 | 0.2 | 0.1 |
| Real return to land | -9.6 | 3.7 | -1.6 | -2.8 | 2.3 | 1.9 | -0.6 | 3.8 |
| Real return to natural resources | -6.3 | -8.8 | 1.9 | 1.1 | 9.5 | 0.1 | 0.5 | -0.9 |
| Skilled real wages | 4.0 | 2.1 | 1.0 | 0.2 | 2.3 | 0.2 | 0.1 | -0.1 |
| Unskilled real wages | -0.5 | 2.6 | 0.4 | -0.4 | 0.3 | 0.3 | 0.1 | -0.1 |
| Unskilled real wages in agriculture | -3.7 | 2.8 | -0.4 | -1.1 | 0.9 | 0.7 | 0.1 | 0.9 |
| Unskilled real wages in non agricultural sectors | 1.1 | 2.5 | 0.7 | -0.2 | 0.0 | 0.1 | 0.1 | -0.1 |
| Welfare | 1.0 | 2.3 | 0.7 | 0.4 | 2.2 | 0.2 | 0.2 | 0.0 |

Source: author's calculation.

This is obviously the most efficient way to improve national welfare in Mediterranean countries. All SM countries gain from this process and their welfare benefits are greater than under the two previous scenarios (except for Turkey in the South – South case where welfare gain is 0.8%, which is very close to the multilateral gain). The 'rest of North Africa' zone and Tunisia are the main beneficiaries. The significance of this macroeconomic real income gain is due to the extent to which this reform creates trade. Due to full trade liberalization scenario, SM countries' export volumes are globally increased by 11.4%, compared with 8.8% under the free trade agreements with EU and only 1.9% under the implementation of an SM free trade area. Thus, multilateral full trade liberalization is the most efficient outcome for South Mediterranean countries. It allows for a large reduction in domestic distortions and it stimulates GDP growth especially in Tunisia, Morocco, and other North Africa countries. The GDP increase offsets deterioration in terms of trade linked to an augmentation of world agricultural prices, which is detrimental to most of these countries. The zones 'Rest of Middle East' and 'Rest of North Africa' are initially net food importers, while Morocco has external deficits in meat, milk, sugar, wheat and cereal grains— which are substantially distorted sectors.

Nevertheless full trade liberalization creates much larger reallocations of production factors. These shifts in production are highlighted in Table 12. They are larger than those coming from regional agreements. In Tunisia and Morocco large expansions of the textile / apparel, and equipment sectors have to be put in parallel with large contraction of activity in wheat and vehicle sectors.

**Table 12—Impact of a full trade liberalization on sectoral production (initial level – USD bln- and rate of growth after 14 years - %)**

| | Morocco | Tunisa | Turkey | Rest of Middle East | Rest of North Africa | Sub Saharan Africa | European Union | US |
|---|---|---|---|---|---|---|---|---|
| Rice | -77.8 | 37.0 | -30.3 | 0.0 | 46.6 | -23.8 | -53.3 | 81.2 |
| | *0.0* | *0.0* | *0.0* | *3.1* | *0.3* | *3.6* | *4.0* | *4.6* |
| Wheat | -22.9 | -64.7 | -8.5 | -1.0 | 3.6 | -10.7 | 4.4 | 7.1 |
| | *1.9* | *0.8* | *2.3* | *4.1* | *10.2* | *1.4* | *12.8* | *8.0* |
| Cereal grains nec | -2.8 | -9.6 | -18.7 | -10.7 | 0.8 | -1.0 | 1.4 | 8.2 |
| | *0.9* | *0.1* | *1.0* | *1.8* | *3.3* | *12.0* | *14.2* | *26.2* |
| Vegetables fruit nuts | 7.7 | -10.2 | 0.2 | -1.1 | 0.4 | 2.4 | -5.1 | 3.2 |
| | *2.3* | *2.5* | *14.0* | *20.1* | *17.9* | *17.4* | *53.8* | *32.7* |
| Other agric products | 26.8 | -39.8 | 3.3 | -3.3 | -11.0 | 6.3 | -2.3 | 7.9 |
| | *1.5* | *0.2* | *2.9* | *4.4* | *3.8* | *22.7* | *64.5* | *57.8* |
| Sugar | -4.5 | 1.9 | 0.6 | 3.3 | 0.9 | 29.1 | -32.1 | -4.2 |
| | *1.3* | *0.3* | *10.5* | *4.8* | *5.4* | *5.4* | *28.5* | *37.9* |
| Plant-based Fibers | 3.6 | 1.4 | 0.5 | 4.7 | 7.2 | -2.2 | 1.9 | 0.7 |
| | *0.4* | *0.0* | *4.1* | *1.7* | *1.4* | *2.3* | *1.7* | *8.9* |
| Meat and meat products | -22.8 | 70.1 | -22.2 | -4.2 | -2.8 | -3.6 | -0.9 | 3.3 |
| | *2.9* | *1.9* | *5.8* | *30.0* | *17.2* | *25.8* | *319.9* | *285.9* |
| Milk | -39.9 | -0.4 | -7.6 | -12.5 | -3.1 | -14.4 | 7.2 | 1.2 |
| | *1.1* | *0.4* | *6.2* | *14.4* | *5.0* | *3.6* | *171.3* | *127.3* |
| Forestry and fishing | -1.5 | -2.9 | -1.3 | -0.8 | 0.4 | 1.1 | -0.1 | 0.2 |
| | *0.6* | *0.3* | *2.5* | *3.9* | *2.8* | *14.0* | *63.0* | *24.9* |
| Other Primary products | -1.9 | -5.3 | 5.3 | 1.3 | 7.0 | 2.3 | 1.5 | -1.0 |
| | *4.2* | *2.5* | *7.3* | *172.3* | *44.1* | *59.2* | *306.0* | *275.5* |
| Other food products | 8.1 | -13.4 | -0.8 | -2.4 | -3.1 | -3.1 | 1.6 | 0.8 |
| | *4.6* | *1.1* | *5.4* | *25.9* | *16.2* | *44.9* | *456.4* | *527.9* |
| Textile | 104.9 | -0.7 | -0.8 | -3.7 | -64.9 | -34.7 | -5.6 | -11.3 |
| | *1.0* | *1.1* | *16.4* | *12.8* | *4.5* | *11.4* | *124.3* | *154.4* |
| Wearing | 48.0 | 18.3 | 0.3 | -11.3 | -78.5 | -30.4 | -6.3 | -16.4 |
| | *2.7* | *2.4* | *6.8* | *10.8* | *6.3* | *5.4* | *98.7* | *115.3* |
| Leather products | -34.9 | -16.2 | 2.8 | -4.4 | -3.3 | -23.0 | -1.5 | -22.3 |
| | *1.5* | *1.0* | *1.6* | *3.7* | *4.7* | *2.4* | *60.1* | *20.2* |
| Wood and paper products | -10.2 | -7.3 | 1.0 | -1.5 | -1.8 | -0.9 | 0.4 | 0.4 |
| | *2.3* | *1.4* | *5.8* | *22.6* | *11.1* | *18.6* | *518.1* | *699.3* |
| Petroleum coal products | 2.5 | 0.1 | -0.6 | 1.3 | 4.7 | -1.7 | 0.1 | -0.4 |
| | *1.5* | *0.4* | *7.1* | *55.0* | *12.3* | *12.6* | *150.3* | *165.3* |
| Chemical products | 6.0 | 10.8 | -2.6 | 5.6 | -1.8 | -5.4 | -0.6 | 0.3 |
| | *4.1* | *2.8* | *12.7* | *35.8* | *15.7* | *21.2* | *812.1* | *805.8* |
| Metals and metal products | 0.5 | -10.9 | 4.2 | 3.8 | 1.5 | 13.8 | -0.4 | -0.4 |
| | *2.5* | *1.2* | *13.8* | *22.2* | *9.4* | *32.0* | *654.6* | *599.3* |

**Table 12—Impact of a full trade liberalization on sectoral production (con't)**

| | Morocco | Tunisa | Turkey | Rest of Middle East | Rest of North Africa | Sub Saharan Africa | European Union | US |
|---|---|---|---|---|---|---|---|---|
| Motor vehicles and equip | -12.3 | -3.5 | 2.6 | -0.7 | -18.1 | 13.4 | -1.2 | -1.5 |
| | *1.3* | *0.7* | *9.2* | *11.1* | *5.1* | *12.8* | *694.3* | *754.4* |
| Equipment goods | 23.3 | 15.6 | 3.2 | 1.0 | -4.2 | 3.5 | 0.6 | 0.6 |
| | *3.2* | *1.7* | *16.1* | *29.2* | *6.3* | *13.0* | *1191.2* | *1266.3* |
| Other manuf products | -1.7 | -10.1 | 2.0 | 0.2 | 0.7 | 0.2 | 0.5 | 0.6 |
| | *2.5* | *1.3* | *13.4* | *75.5* | *13.1* | *34.7* | *491.1* | *408.8* |
| Other services | 1.0 | -0.3 | 0.0 | 0.0 | 1.9 | 0.2 | -0.1 | 0.0 |
| | *31.6* | *11.7* | *68.2* | *384.5* | *127.4* | *173.7* | *7159.7* | *10393.2* |
| Transport and trade | 2.4 | 1.0 | 0.1 | 0.1 | 1.6 | 0.7 | -0.1 | 0.0 |
| | *10.8* | *8.4* | *81.9* | *169.8* | *63.6* | *117.7* | *2454.7* | *3587.8* |

Source: author's calculation.

These large reallocations of productive factors have to be taken into consideration as they are the source of social costs, which is the basic idea of the structural congruence concept.

## 4. TRADE AGREEMENTS AND STRUCTURAL CONGRUENCE

For the vast majority of SM countries' trading partners, multilateral liberalization creates more trade. Because this type of liberalization implies no discrimination among trade partners, it does not entail diversion effect. Therefore, multilateral liberalization appears to be the most efficient policy. But in the short/medium term trade liberalization is costly because it brings change in the domestic productive structure. The scarce factor of production is harmed; immobile factors in imports-competing sectors are negatively affected. Even abundant mobile factors could pay a short term cost since they have to be reallocated from contracting sectors to the expanding ones. This entire process, therefore, favors a gradual approach to trade liberalization process.

For some advocates of regionalism, including numerous politicians and economists like Rudiger Dornbusch, Paul Krugman, Lawrence Summers[19], a regional agreement is an attractive step towards multilateral liberalization. This approach may be effective in preparing the domestic economy to international competition, and the process would be less "brutal" than multilateral trade liberalization. This is due either to partial openness policy or because regionalism often means integration with geographically close economies, thus resulting in smaller inter– sectoral factor reallocations.

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[19] "I therefore assert and will defend the following presumption: economists should maintain a strong, but rebuttable, presumption in favor of all lateral reductions in trade barriers, whether they are multi, uni, bi, tri, plurilateral. Global liberalization may be best, but regional liberalization is likely to be very good." – Summers, 1991. In the same book edited by the Federal Reserve of Kansas City, Krugman supports, like Summers, that not only regional agreements between natural trading partners are welfare – improving, but that concluding this kind of preferential agreements is better for multilateral free trade than doing nothing. In this paper Krugman quotes Rudiger Dornbusch as a strong supporter of regionalism.

The regionalism approach, therefore, needs to be carefully scrutinized, as it doesn't necessarily pave the way to multilateral trade agreements. If the short-medium term cost of free trade is reallocation of production factors, it means that a free trade agreement or a custom union is a first step towards multilateral free trade only if this regional agreement results in the same change of output structure as the one implied by multilateral free trade. However, if the creation of a free trade agreement with neighboring countries causes a contracting/expanding sector movement that is different from the one implied by multilateralism, the above regional approach is clearly misleading and a regional agreement may be inefficient.

## 4.1 THE CONCEPT OF STRUCTURAL CONGRUENCE

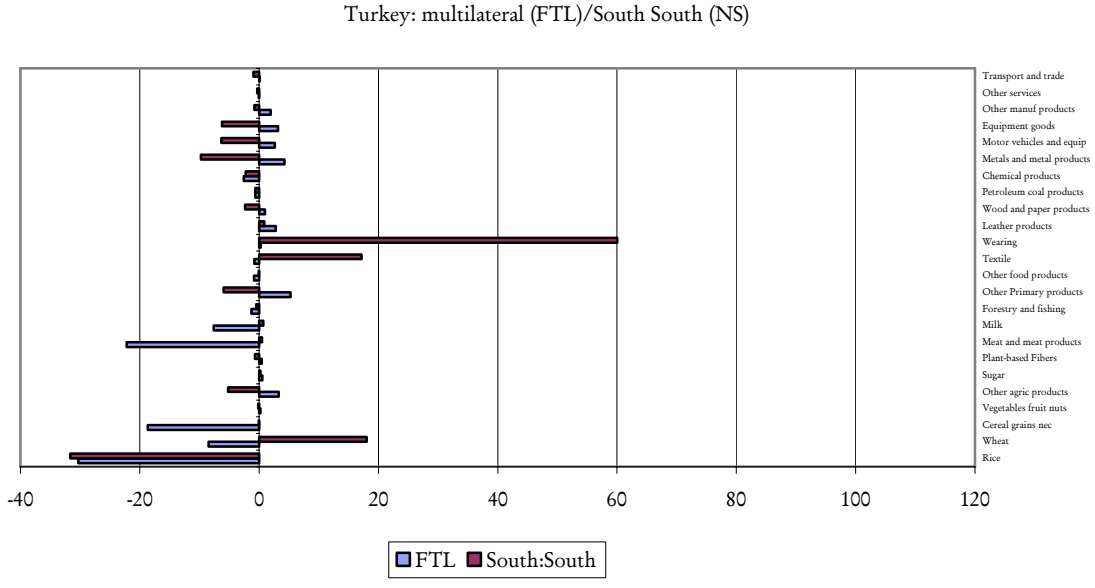
In order to analyze the concepts of regionalism and multilateralism, the notion of ***structural congruence*** is used. It has been defined by David Roland-Holst and Dominique van der Mensbrugghe (2003) as "*a similarity in the composition of real sectoral output within a country under two different regimes*" (Roland-Holst and van der Mensbrugghe, 2003).

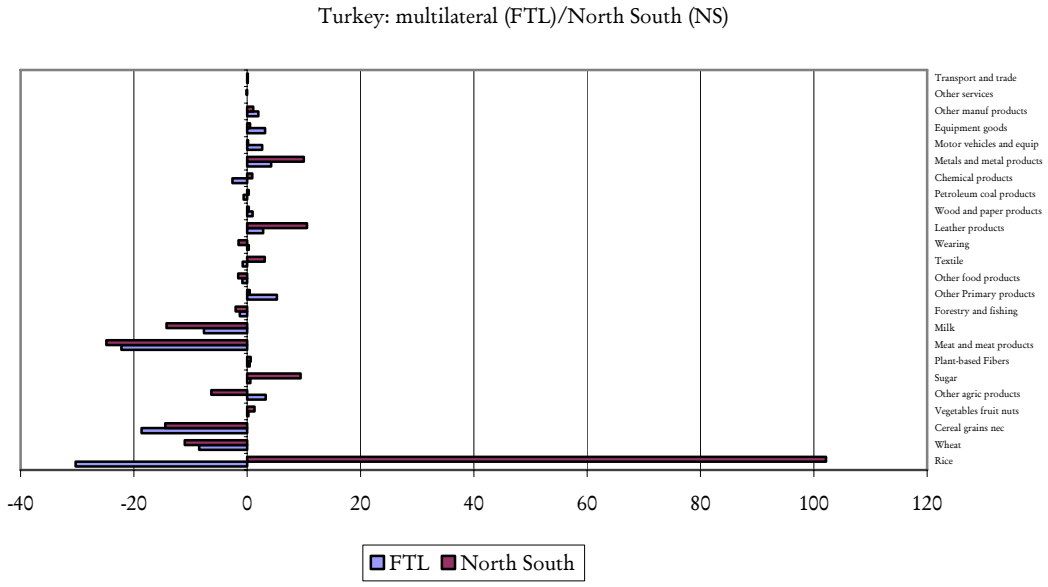
Figure 4 illustrates structural congruence of the three trade regimes previously studied in the Turkish case. It compares successively the South/South agreement and the South/North partnership, with multilateral free trade, pointing out in each case the rate of growth in sector output (in % and in volume).

Under a free trade agreement between South Mediterranean countries, the Turkish economy may clearly diverge from the path of multilateral free trade: in this case the structural congruence is negative as the shifts of output incurred by the two trade regimes

are in the opposite direction in 14 out of 24 cases. On the contrary, when a free trade association with the European Union is compared with multilateral full trade liberalization, shifts in sector productions are quite parallel, except in 6 out of 24 cases. It is noteworthy that expansions/contractions are often larger in the regional trade liberalization (see the case of milk, meat and sugar in the bottom Figure 4). The South-South integration process creates a large reallocation of productive factors in wearing and textile due to the preferential access that it creates towards markets previously very protected (Syria, Egypt, and so forth). On the contrary, multilateral trade liberalization does not greatly modify the level of production of textile and wearing in Turkey (it slightly decreases the textile production), as the openness in this sector particularly profits to China (+25% and +21% of increased exports in volume, from an initially already high level).

**Figure 4—Structural congruence in the Turkish case - rate of growth in sector output (in % and in volume)**

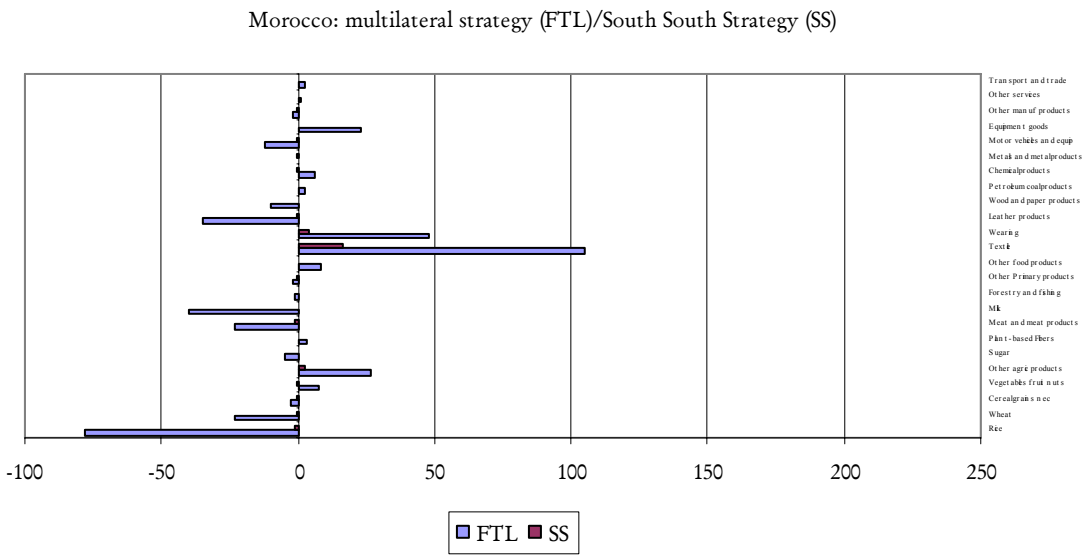




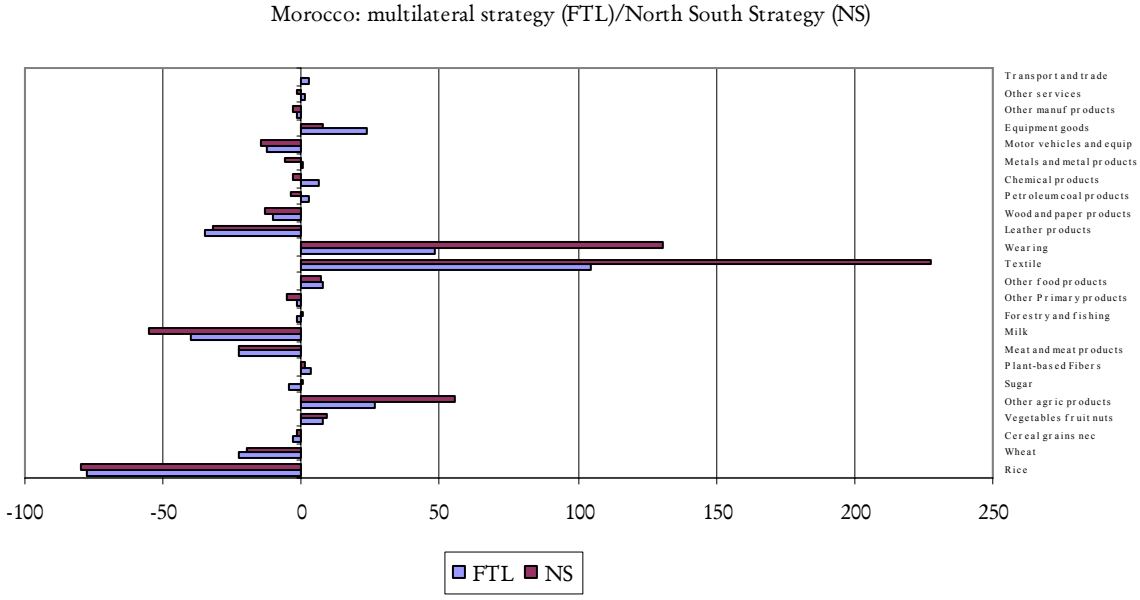

Source: author's calculation.

To a lesser extent, this is also true for Morocco and Tunisia: a South-South agreement only implies very smooth readjustment of production. On Figure 5 and Figure 6, these shifts are remarkably smaller than the ones incurred by full trade liberalization under the aegis of WTO. On this matter, free trade with Europe is a much better transition path towards multilateralism as variations in sector outputs are well correlated, except for chemical and petroleum products (plus equipment goods in the case of Tunisia). For other SM countries, Figures are provided in the Annex as they gather several countries making their interpretation more difficult.

**Figure 5—Structural congruence in the Moroccan case - rate of growth in sector output (in % and in volume)**

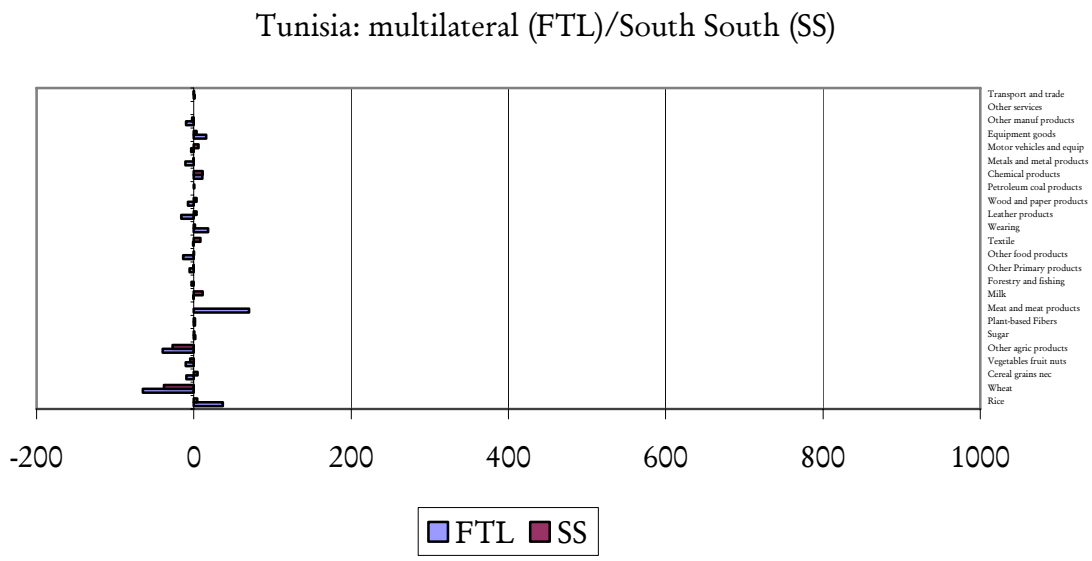



Source: author's calculation.

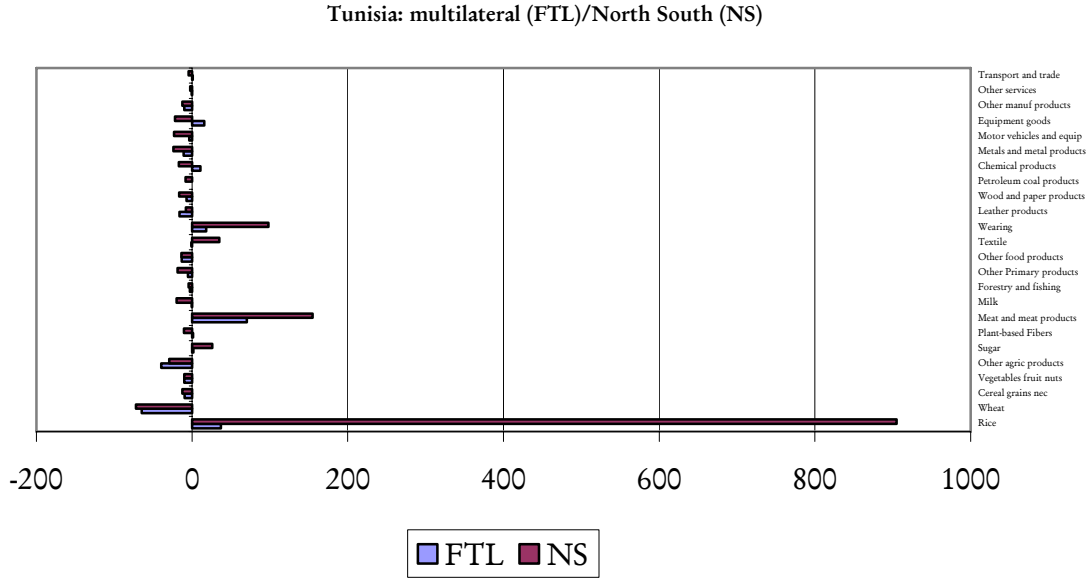



Source: author's calculation.

**Figure 6—Structural congruence in the Tunisian case - rate of growth in sector output (in % and in volume)**




Source: author's calculation




Source: author's calculation.

Comments of previous Figures are not sufficient to formulate a policy recommendation. They are only based on a visual comparison of evolutions in sector productions and do not account for the importance of each sector. This is why in this subsection, an original **indicator of structural congruence** is proposed. This indicator summarizes the evolution in all sectors and normalizes the degree of structural congruence from 0 to 1 as well as it allows for a direct comparison of two trade reforms within the same country, and the same trade reform between two countries.

## 4.2 A NEW MEASURE OF STRUCTURAL CONGRUENCE

This study constructs an index of similarities between two trade regimes, one of them being multilateral free trade and serves as a reference as it has been proven to be the most efficient trade regime.

Let $X_{i,k}^{r}$ be the production of commodity k done by country i under trade regime r and $X_{i,.}^{r}$ be its total production under the same trade regime. The similarity[20] between trade regimes r and r' for country i is measured by:

$$IS_{i}^{r,r'} = \sum_{k} \min\left( \frac{X_{i,k}^{r}}{X_{i,.}^{r}}; \frac{X_{i,k}^{r'}}{X_{i,.}^{r'}} \right)$$

The more similar two trade regimes are, the higher this index is; the maximum being 1, and the minimum 0. Suppose two sectors, 1 and 2, and two trade regimes, a and b. If both regimes, a and b, imply that 50% of total production is in each sector, the index

[20] The construction of this index has been inspired by the Finger – Kreinin index on similarities of export structure (see Finger and Kreinin, 1979).

of similarity is 1. On the contrary, if trade regime a implies that 100% of total production is in 1, and b implies that 100% of total production is in 2, the index is 0.

This, it is possible to assess if a regional agreement reduces the distance towards multilateral free trade in terms of productive sectors. This indicator also allows for comparison between current production structure and the one implied by full multilateral liberalization[21].

Table 13 calculates these indicators for the four zones studied with the MIRAGE model. For each country or zone the first row gives the value of the similarity index between the initial trade regime and multilateral full trade liberalization. The next two rows carry out the same calculation for a free trade agreement associating SM countries with the European Union, then for a free trade area among South Mediterranean countries[22].

**Table 13—Indicators of structural congruence**

| | Morocco | Tunisa | Turkey | Rest of Middle East | Rest of North Africa |
|---|---|---|---|---|---|
| Initial situation | 95.771% | 82.432% | 71.810% | 78.408% | 83.721% |
| North South | 95.778% | 91.491% | 99.044% | 99.448% | 98.839% |
| South South | 96.079% | 81.747% | 72.583% | 78.399% | 82.764% |

Source: author's calculation.

[21] It is noteworthy that Turkey has one of the lowest degrees of protection and the lowest indicator of structural congruence for initial situation. Several explanations may be advanced: In Turkey the inter – sectoral dispersion of protection is very high (see Table 1)) with a very restricted access to agriculture. In fact multilateral trade liberalization creates a strong decrease in agriculture production. Secondly the indicator of structural congruence should also depend on access to foreign markets which is particularly differentiated by destinations in the case of Turkey (see Table 3).

[22] It could be stated that the complementary to unity defines the economic distance between the trade regime considered and multilateral free trade.

This indicator clearly shows that for four countries/zones Tunisia, Turkey, the rest of North Africa, and the rest of Middle East, concluding a free trade agreement with Europe is a first step towards multilateral full trade liberalization. For the last three countries/zones the economic distance with this trade regime is greatly narrowed. On the contrary, in the case of Morocco, regional agreements do not significantly reduce the distance to multilateral free trade.

The construction of a similarity index allowed for more clear-cut conclusion. For Tunisia and Turkey, the Euromed partnership is a first step towards multilateral free trade, while from a South-South agreement does not prepare them for multilateral free trade.

# 5. CONCLUDING REMARKS

Southern Mediterranean countries could be at a turning point in their economic history. Although import-substitution policies have failed, they still isolate these economies from the world market to a great extent. For SM countries, trade openness is appealing, but it can be attained through different options: unilateralism, multilateralism, or regional agreements either with developed countries or among middle income countries.

Nevertheless, these options are not equally beneficial. According to this study, the most efficient trade strategy is multilateralism. On the other hand, a regional agreement among Arab countries is not worthwhile as it does not yield substantial real income gains and it does not imply significant reallocations of productive factors, similar to those incurred by a multilateral option. Such an agreement can even create a "stumbling block" as it could move the Tunisian economy away **from multilateral free trade.** The Euromed partnership is much more beneficial in creating trade, but this reform increases only the real incomes of Tunisia and Turkey. For Morocco, such a reform will divert significantly imports from competitive agricultural producers to European farmers. Nevertheless, a positive feature of this partnership is that it implies a reallocation of productive factors in the direction of multilateral free trade, particularly for Tunisia and Turkey.

If multilateralism is the best policy option, SM countries do not control the outcome of these negotiations. This study suggests that it is in their best interests to support such a process.

Regionalism is an alternative option of trade liberalization. But it has to be carried out under a consistent strategy which avoids replication of adjustment costs. To that extent, this study emphasizes that for some countries, integrating in the European Union is a more consistent economic option than a South-South association. This conclusion is particularly important at a time when negotiations led under the aegis of WTO are not very promising. In case of an unsuccessful conclusion of these negotiations, the developing countries could be tempted by regionalism, but they have to know that all openness strategies are not good substitutes of multilateralism.

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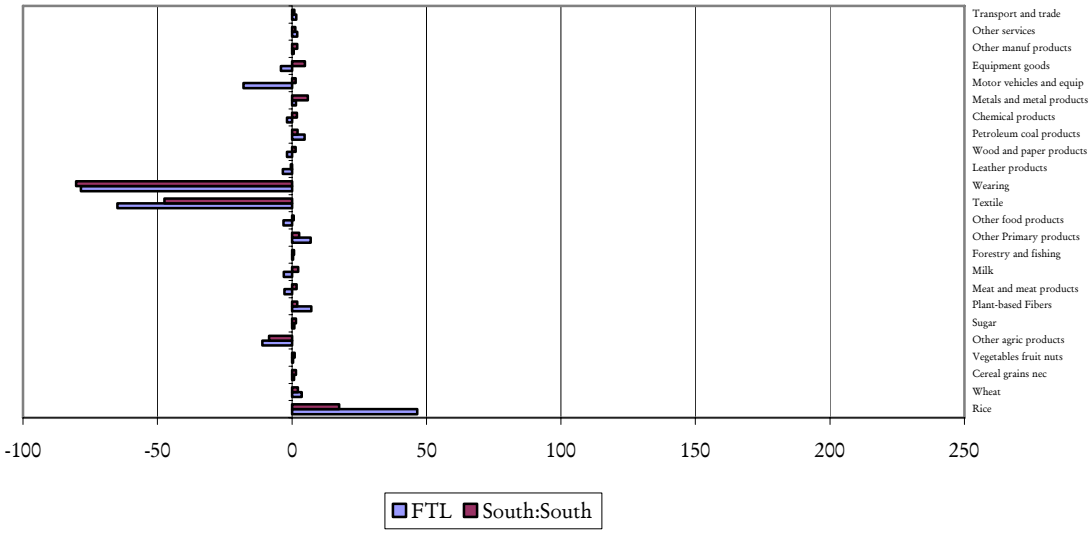
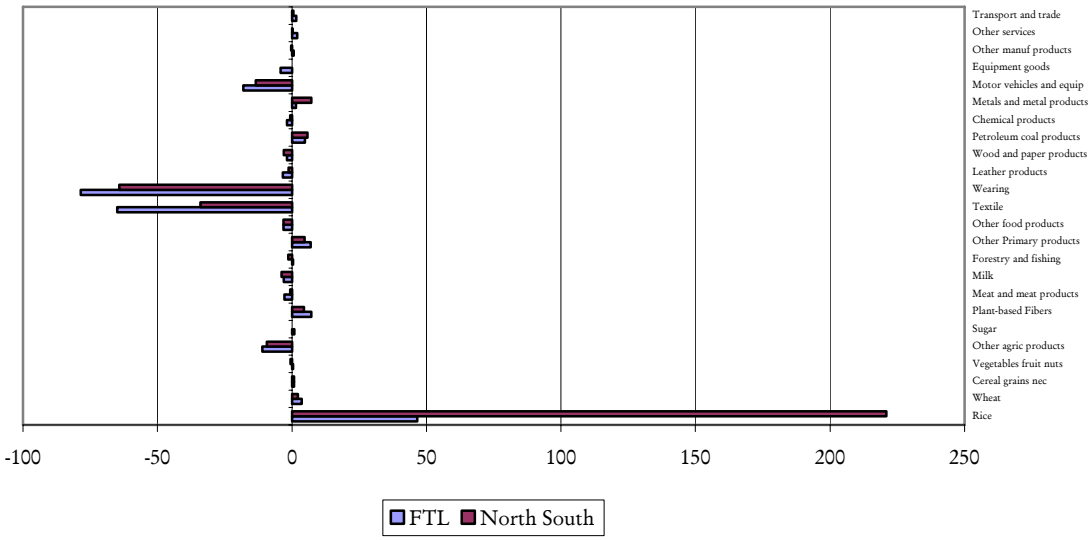
## ANNEX: STRUCTURAL CONGRUENCE IN OTHER SM COUNTRIES - RATE OF GROWTH IN SECTOR OUTPUT (IN % AND IN VOLUME)

Rest of North Africa: multilateral (FTL)/South South (NS)



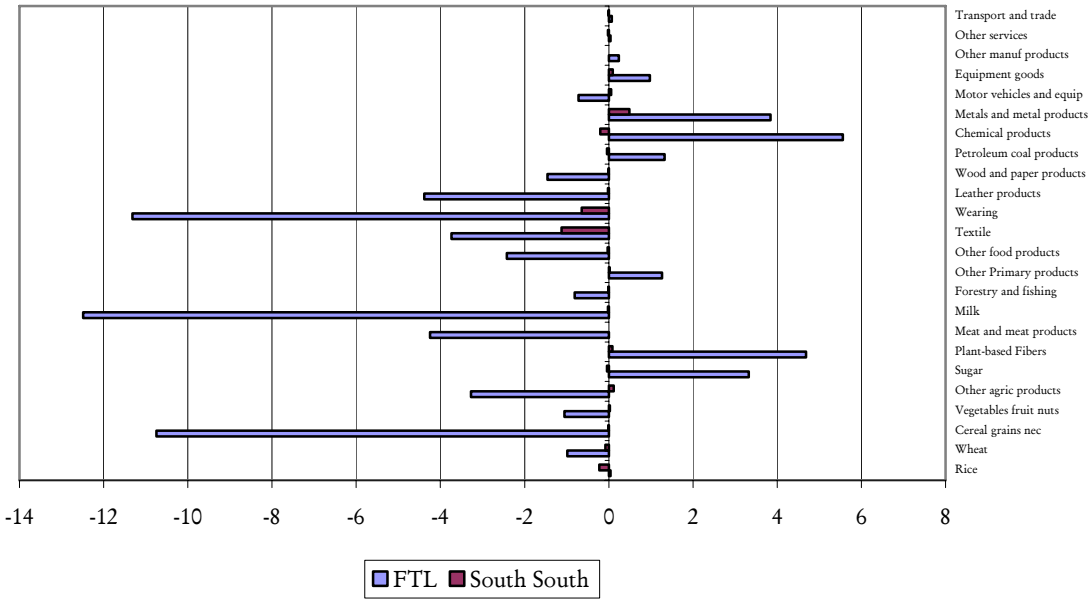

Source: author's calculation.

Rest of North Africa: multilateral (FTL)/North South (NS)



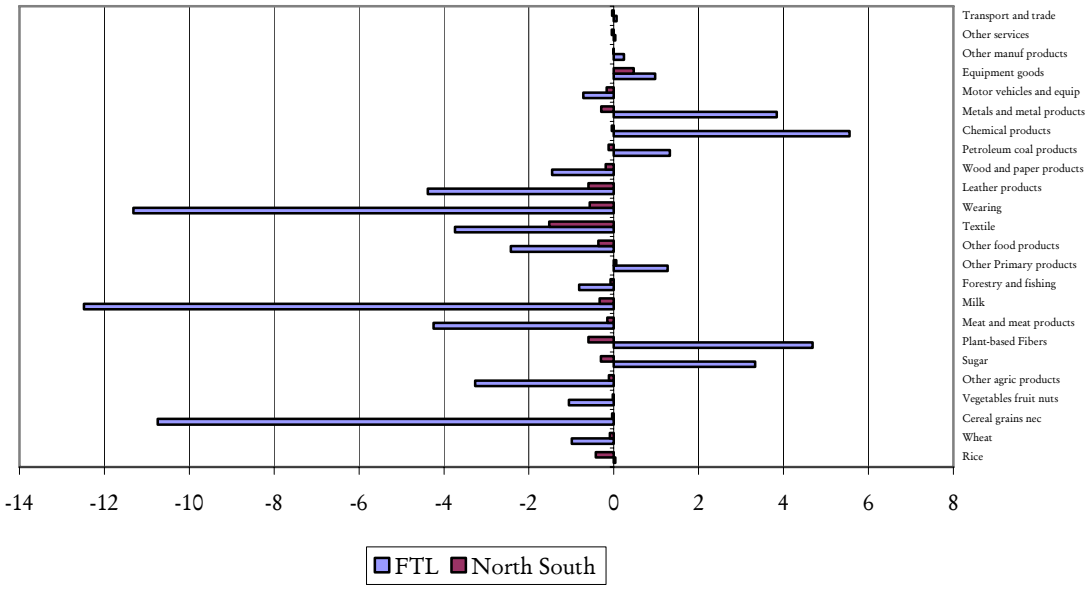

Source: author's calculation.

Rest of Middle East: multilateral (FTL)/South South (NS)




Source: author's calculation.

Rest of Middle East: multilateral (FTL)/North South (NS)

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