The Euro-Med Free Trade Area: An Empirical Assessment of the main Trade Agreements' Effects

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ABSTRACT

This paper provides an assessment of the effects of the main trade agreements implemented in the Euro-Mediterranean region. The empirical analysis in this paper is based on a gravity model for a panel of 14 countries (7 South Mediterranean, 4 EU member states in addition to USA and Japan) for the time span 1991 till 2012. The trade agreements of interest are the Pan-Arab Free Trade Agreement (PAFTA), the Agadir Agreement and the Association Agreements (AAs) signed between the EU and the South Mediterranean countries (SMCs) and are considered the main building blocks for the Euro-Med Free Trade Area.

Results show a positive and significant effect of both the PAFTA and the Agadir Agreement on the exports of their signatories. Differently, signing the AAs seems to have no significant impact on the exports of the countries on average as well as the exports of the majority of the SMCs in specific. However, there is a positive and significant impact of the AAs on the exports of the EU member states. When analyzing the behavior of the single countries, emerges a positive impact of PAFTA on the exports of Egypt and Morocco, a negative impact on Tunisia and insignificant impact on Algeria and Jordan. The Agadir Agreement benefited both Egypt and Morocco, leaving no significant effects on both Tunisia and Jordan. Finally, signing the AAs had a positive impact on Egypt, Morocco and Turkey, a negative impact on Algeria and Jordan, and insignificant impact on the exports of both Israel and Tunisia. These results imply the success of the intra-regional integration efforts, unlike the outcome of the inter-regional AAs. The current design of the AAs seems to have asymmetric outcome on its signatories. The persistence of this problem can hinder the path towards a mutually beneficial and fully fledged Euro-Med Free Trade Area.

JEL Keywords: Empirical Studies of Trade, Economic Integration
JEL Codes: F14, F15

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INTRODUCTION

"*Working towards the creation of an area of peace, stability, security and shared economic prosperity, as well as full respect of democratic principles, human rights and fundamental freedoms and promotion of understanding between cultures and civilizations in the Euro-Mediterranean region*" those were the goals set out in the Barcelona Declaration, the mission statement of the Barcelona Process, also known as the Euro-Med Partnership, launched in 1995.

These ambitious words were soon translated into actions. The EU initiated a grid of bilateral Association Agreements (AAs) to be signed with the South Mediterranean countries (SMCs) to facilitate the creation of a Euro-Med Free Trade Area. To guarantee the creation of a fully fledged free trade area, the Barcelona Process recognized two main levels of economic integration in the region: First, an inter-regional or North-South economic integration process and second, an intra-regional or South-South level of economic integration. If trade wasn't liberalized among the SMCs themselves, the AAs would never succeed in creating the esteemed free trade area singlehandedly. Therefore, the EU started to sponsor any initiative that could help in boasting the flow of trade among the SMCs themselves.

In other words, the creation of a Euro-Med Free Trade Area required two categories of bilateral and multilateral regional trade agreements reflecting the two main pillars for the economic integration process: The North-South and the South-South pillars.

The aim of this research is to assess the effects of the AAs on the exports of the signatory countries as well as the effects of signing the agreement creating the Pan-Arab Free Trade Area (PAFTA) and the Agadir Agreement. In this paper, the AAs serve as proxy for the North-South pillar and the PAFTA and Agadir Agreement as proxies for the complementary but necessary South-South pillar. The empirical analysis relies on a gravity model for a panel of 14 countries representing both shores of the Mediterranean from 1991 till 2012.

As for the contribution made by this research to the existing literature about the Euro-Med economic integration process, it is two-fold: i) extending the evaluation span till the year 2012 and ii) using this updated dataset to evaluate the effects of the three trade agreements from

different perspectives (on average, for the SMCs, for the EU states and for the single SMCs). The multi-perspective analysis using an up to date dataset as well as different estimation techniques for robustness is considered the main innovation of this paper allowing a profound and comprehensive analysis for the economic integration process in the region.

The paper is organized as follows: Chapter 1 provides a brief historical overview of the three trade agreements followed by a descriptive analysis for the inter- and intra-regional trade. Chapter 2 reviews previous studies that discussed economic integration in the region focusing on the impact of implementing the three trade agreements of interest. Then, a discussion of the data, methodology and results is provided in chapter 3 followed by, finally, the conclusions and some policy implications of the results reported in this paper

CHAPTER 1

ECONOMIC INTEGRATION IN THE EURO-MEDITERRANEAN REGION

1.1 A Historic Overview

Before evaluating the impact of any trade agreement, one should understand the environment in which it is implemented. Therefore, this section will provide a brief historic overview of the economic integration process in the region. This overview will cover both pillars. First, a brief description of both the PAFTA and Agadir Agreement will be provided. These agreements are considered main milestones for the intra-regional or the South-South level of economic integration. Then, I will move to the second pillar, the inter-regional or the North-South level of economic integration. This pillar is mainly built on the Association Agreements signed by the EU and the SMCs on bilateral bases. The AAs serve as crucial tools of the Euro-Mediterranean Partnership.

The Pan-Arab Free Trade Agreement (PAFTA)[1]

Trade integration among the Arab states is an old story that dates back to the creation of the Arab League in 1945. Promoting political and economic integration has always been on the agenda. Several attempts have been made since the 1950s whether in the form of treaties, conventions or multilateral agreements. All suffered from lack of political will behind them to guarantee their implementation. As a result, trade barriers remained high between the Arab States, forming all sorts of obstacles on the road for economic integration in the Arab world. The 1990s witnessed some changes when some of the Arab states became members in the WTO and started to implement trade liberalization measures on multilateral, bilateral and regional bases. A wide network of bilateral agreements some of the Arab states facilitated the birth of more multilateral

[1] Previously known as the Greater Arab Free Trade Agreement (GAFTA)

and regional agreements in the Arab world. “Among these numerous agreements which very often overlap each other in spaghetti regionalism, GAFTA is certainly the most far-reaching one. This is due not only because it covers all countries in the Arab region, but also because it relies on political institutions, such as the Gulf Cooperation Council and the Arab League. Moreover, the contents of the agreement are also far-reaching, first because it not only includes the removal of tariffs, but also monetary, administrative and quantitative NTBs (i.e. quotas). It also provides for the trade liberalization in agriculture (despite a transition period) as well as a precise set out of rules of origins” (Abedini and Peridy, 2008:851). More than 15 years after signing the Agreement on Facilitation and Development of Trade Among Arab States in 1981 by the members of the Arab League and to enhance its implementation, the member states signed an agreement to help create a Pan-Arab Free Trade Area in 1997 to be completed within 10 years. It came into force in January 1998. Later, the Arab Summit held in Beirut in March 2002 and the Economic and Social Council meeting held in September 2002 decided to reduce the transitional period for the implementation of the PAFTA to be seven years ending in January 2005. It was originally signed by Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates and Yemen. Currently Algeria and the Palestinian Authority of the West Bank and the Gaza Strip are also members of the PAFTA.

The Agadir Agreement

The "Agadir Declaration" was signed by Jordan, Tunisia, Egypt, and Morocco in the Moroccan city of Agadir on 5 August 2001 for the establishment of a free trade area for the Arab Mediterranean countries. The four countries signed in Rabat on 25 February 2004 the agreement on the establishment of the free trade area between the four countries. It entered into force in 1 January 2007. Upon the acceptance of the signatories, other states can join: members of the PAFTA that signed an Association Agreement or a FTA with the EU. In addition to establishing a free trade area among its members, the Agadir Agreement aims at developing economic and commercial cooperation as well as encouraging economic and industrial integration among member countries by applying the cumulative rules of origin for goods produced for export to

the EU as well as to their domestic markets. The harmonization of the implemented rules of origin under the Agadir Agreement with those required by the Association Agreements, namely the Pan-Euro-Med Rules of Origin, signed between the EU and the SMCs is a crucial contribution to a fully fledged Euro-Mediterranean economically integrated region. In other words, the Agadir Agreement not only enhances the flow of trade between its southern Mediterranean members but also boasts the trade with the EU. In that sense, the Agadir Agreement, as part of the South-South economic integration pillar, is also supporting the North-South pillar.

The Euro-Mediterranean Partnership[2]

A turning point in the Euro-Mediterranean partnership is the Barcelona Process launched in November 1995 by the Ministers of Foreign Affairs of the then, 15 EU members and 12 Mediterranean partners, as the framework to manage both bilateral and regional relations. Guided by the agreements of the Barcelona Declaration, it formed the basis of the Euro-Mediterranean Partnership which has expanded and evolved into the Union for the Mediterranean[3]. It was an innovative alliance based on the principles of joint ownership, dialogue and co-operation, seeking to create a Mediterranean region of peace, security and shared prosperity. The partnership was organized into three main dimensions, which remain till today as the broad working areas of the partnership:

1) Political and Security Dialogue, aimed at creating a common area of peace and stability underpinned by sustainable development, rule of law, democracy and human rights.
2) Economic and Financial Partnership, including the gradual establishment of a free-trade area aimed at promoting shared economic opportunity through sustainable and balanced socio-economic development.

[2] This section is based on the information available on the websites of the European commission (http://ec.europa.eu/trade/policy/countries-and-regions/regions/euro-mediterranean-partnership), the European Union External Action (http://eeas.europa.eu/euromed/barcelona_en.htm) and the Union for the Mediterranean (www.ufmsecretariat.org)

[3] The Union for the Mediterranean (UfM) was launched on 13 July 2008 at the Paris Summit as a continuation of the Euro-Mediterranean Partnership (Euro-Med), also known as the Barcelona Process, launched in 1995.

3) Social, Cultural and Human Partnership, aimed at promoting understanding and intercultural dialogue between cultures, religions and people, and facilitating exchanges between civil society and ordinary citizens, particularly women and young people.

In 2005, the Barcelona Summit agreed on a five-year work program and a Euro-Mediterranean Code of Conduct for Countering Terrorism, as well as adding migration as a fourth key pillar of the partnership.

Under the umbrella of each sector, Euro-Mediterranean Ministerial meetings have been held in order to establish the political commitments which drive cooperation and activity across sectors. These meetings are punctuated by periodic meetings of Euro-Mediterranean Ministers of Foreign Affairs which take stock of the partnership, its priorities and the progress made on different initiatives. With the introduction of the European Neighborhood Policy (ENP) in 2004, the Barcelona Process essentially became the multilateral forum of dialogue and cooperation between the EU and its Mediterranean partners while complementary bilateral relations are managed mainly under the ENP and through Association Agreements signed with each partner country.

This paper is focusing on the second pillar of the Barcelona Process, which is centered around the creation of a deep Euro-Mediterranean Free Trade Area, removing barriers to trade and investment between both the EU and Southern Mediterranean countries (Inter-regional or North-South economic integration) and between the Southern Mediterranean countries themselves (Intra-regional or South-South economic integration). The North-South level is based on a network of bilateral Association Agreements[4] signed between the EU and the Mediterranean countries individually. The scope of these AAs is essentially limited to trade in goods and a number of bilateral negotiations still on-going or being prepared in order to deepen these agreements. These ongoing or future negotiations are related to further liberalization of trade in agriculture, liberalization of trade in services, accreditation and acceptance of industrial products and regulatory convergence. As for deepening the South-South economic integration, a key goal of the Euro-Mediterranean trade partnership, the EU supports the strengthening of trade relations amongst Southern Mediterranean countries such as the Agadir Agreement and various bilateral

[4] With the exception of Turkey which signed a custom union and not an association agreement.

agreements between the Mediterranean countries themselves (i.e. Israel and Jordan, Turkey and Egypt, Jordan, Israel and Morocco individually).

Bensassi et al. (2010) provides a detailed description of the innovations introduced by those AAs. A distinction between direct and indirect effects of those agreements is useful at this point. According to Bensassi et al. (2010) direct effects are those resulting from an increase in the openness of the EU markets to Mediterranean products, where as the indirect effects are those resulting from the growth of the Mediterranean openness to EU products. Starting with the direct effects, Mediterranean industrial products were allowed to enter the EU markets free of custom duties since 1978. So theoretically products from the Mediterranean countries have been able to enter the EU markets for decades now, but in practice the question of determining the origin of the product can constitute a major obstacle in front of those theoretical open borders. The main innovation in that matter is the changes made by the Barcelona Process regarding the implemented Rules of Origin (RoO) compared to those used since 1978. The Pan-Euro-Med Rules of Origin now allow for diagonal cumulation in addition to the already implemented bilateral cumulation methodology. Bilateral cumulation means that two countries linked by an agreement can use without any limits materials coming from each other. Diagonal cumulation means that materials originated from a third country also linked by an agreement to one of the signing country could be used without any limits by the other signing country. For example if Germany and Morocco have signed a FTA and at the same time Morocco and Tunisia have signed a FTA that allows diagonal cumulation, any intermediate products used by Morocco originated from Tunisia are considered Moroccan when the final product enters Germany. This new rule doesn't only mean an expansion of the use of intermediate goods from a wider range of EU-Med members, but also with the Agadir Agreement implementing the same methodology, an even wider range of more efficient intermediate goods is now available for use. Consequently, the Mediterranean exports to the EU markets should increase. Moving to the indirect effects of the Barcelona Process which result in the increase of openness of the Mediterranean markets to EU products, for the first time the Mediterranean markets are now open to the EU products at the same level of the EU openness to Mediterranean goods. This reciprocal principle is the main change brought by the Barcelona Process. This innovation has two main consequences: First, an increase of Mediterranean imports originated it the EU. Second, the implementation of the diagonal cumulation methodology can increase the use of less expensive intermediate goods

from the EU in the production of Mediterranean final products. This might lead to cheaper Mediterranean exports flowing back to the EU. In that sense, this might also lead to an increase of the Mediterranean exports to the EU markets.

Figure 1.1: Barcelona Process and the Mediterranean Trade Balance

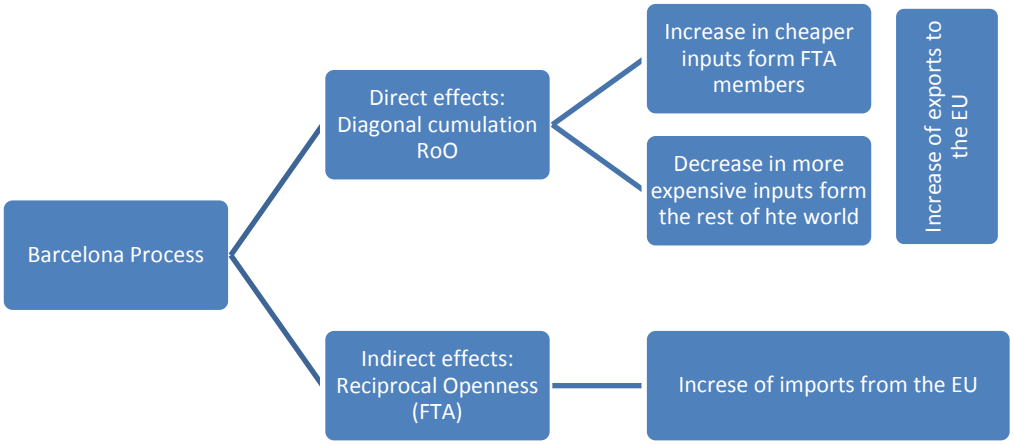


Figure 1.1 shows how the final impact on the trade balance of the Mediterranean countries depends on the relative strength of both streams. If the less developed Mediterranean countries didn't succeed in exploiting the benefits of the Pan-Euro-Med rules of origin, the benefits from the Barcelona Process would only be harvested by the already more developed EU countries. And the Barcelona Process would fail in creating the ambitious region of shared prosperity it was set out to achieve. This is a matter that will be further discussed and empirically investigated in chapter 3 with more details.

1.2 A Descriptive Analysis

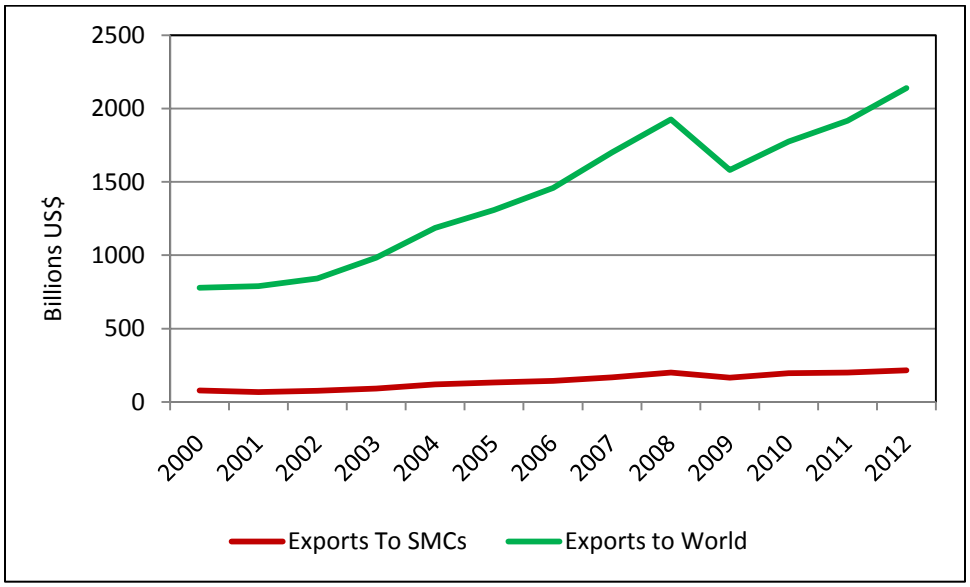
This section will try to paint a picture of the trade profile of the Euro-Mediterranean region. The descriptive analysis provided in this section aims at clarifying the relative importance of the South Mediterranean countries and the European Union as trade partners for each others. To do that a series of figures are generated based on export and import data from the United Nations

COMTRADE database for the EU27 as well as the aggregates of 10 South Mediterranean Countries[5] for the period from 2000 till 2012. This time period witnessed the effective implementation of the trade agreements of interest, namely the PAFTA, the Agadir Agreement and the EU Association Agreements.

The EU perspective

Despite the proximity of the SMCs to the European Union and the shared colonial history of the North African countries as French and British colonies, it can be argued that the current level of trade between the northern and southern Mediterranean is insignificant. Of course, that argument is only true when regarded from the European perspective. Figure 1.2 and Figure 1.3 show the level of exports to and imports from the SMCs in comparison to the EU total trade.

Figure 1.2: EU27 exports to SMCs vs. World



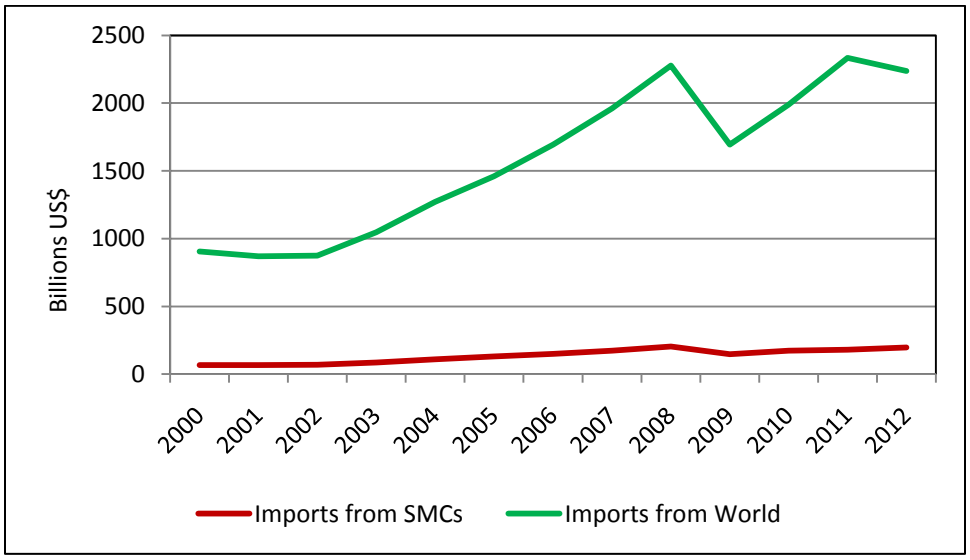
Source: COMTRADE Database

As shown in Figure 1.2, the total EU27 exports have been steadily increasing throughout the past decade except for a sharp drop in 2009, in the aftermath of the Global Financial Crisis, and going

[5] The countries that represent the SMC group in this section are: Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Syria, Morocco, Tunisia and Turkey.

back to the steadily increasing trend. When comparing to the trend and size of the exports to the SMCs, two observations are relevant: First, the relative size of exports to the SMCs in comparison to the total EU exports is significantly small. Second, the changes in exports to the SMCs follow the same overall behavior of exports to the world, namely the steady increase. Which might be an indicator that the increasing exporting power of the EU to the SMC is not a special phenomenon, driven by the special effects of implementing the Association Agreements for example or by any Euro-Med specific trade policy, but rather just the reflection of the overall success of the EU in boasting its exports to the world. When comparing the percentage changes in both exports to the SMCs and exports to the world, two key issues must be mentioned: Till the aftermath of the Global Financial Crisis, the YoY percentage changes in the exports to the SMCs are higher than the overall YoY percentage changes in the amount of exports to the world (i.e. in 2003: 22% and 16%, in 2004: 30% and 20% for exports to the SMCs and to the world respectively). But this trend was interrupted by the common fall in exports in 2009 to both the SMCs and to the world by 17%. The recovery in the exports to the SMCs after the crisis is significantly slower than the recovery in the overall exports to the world. For example, in 2011 and after the beginning of the sovereign debt crisis, exports to the world increased by 8% where as exports to the SMCs increased only by 2%.

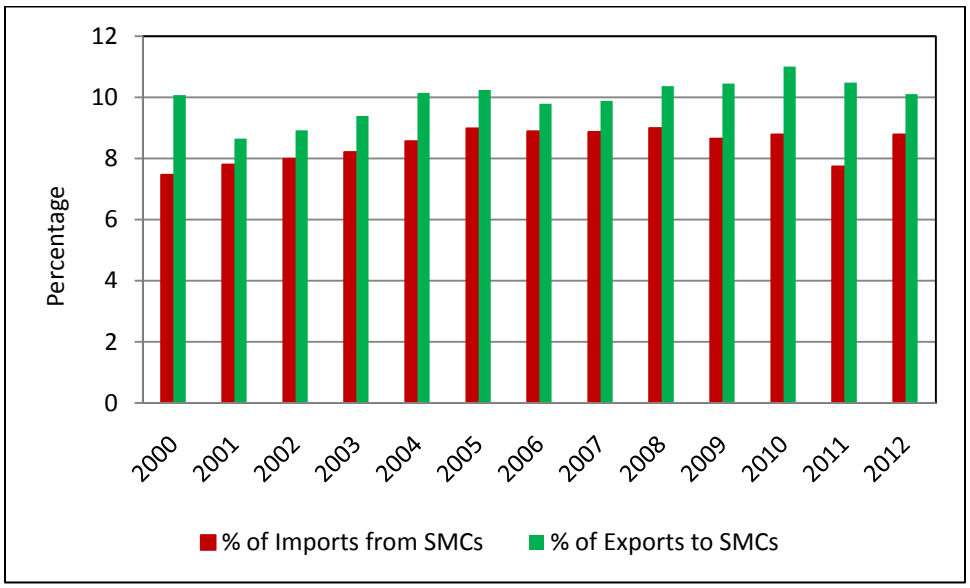
Figure 1.3: EU27 imports from SMCs vs. World



Source: COMTRADE Database

As for the behavior of imports from the SMCs in comparison to the overall imports of the EU27 from the world, the same observations stated about Figure 1.1 and the behavior of exports are also valid here. The relative size of imports from the SMCs is again extremely insignificant in comparison to the overall size of imports from the world as well as the echoing pattern of change in both of them. The only novelty here would be that in 2009 imports from the SMCs suffered from a stronger fall (28%) than the fall in overall imports from the world (25%). Moreover, soon after a barely noticeable recovery from the impact of the Global Financial Crisis, the sovereign debt crisis took a stronger toll on the imports from the SMCs compared to the level of imports maintained with the rest of the world, a YoY increase of 3% compared to 17% respectively in 2011.

Figure 1.4: The relative weight of the SMCs among EU27 trade partners

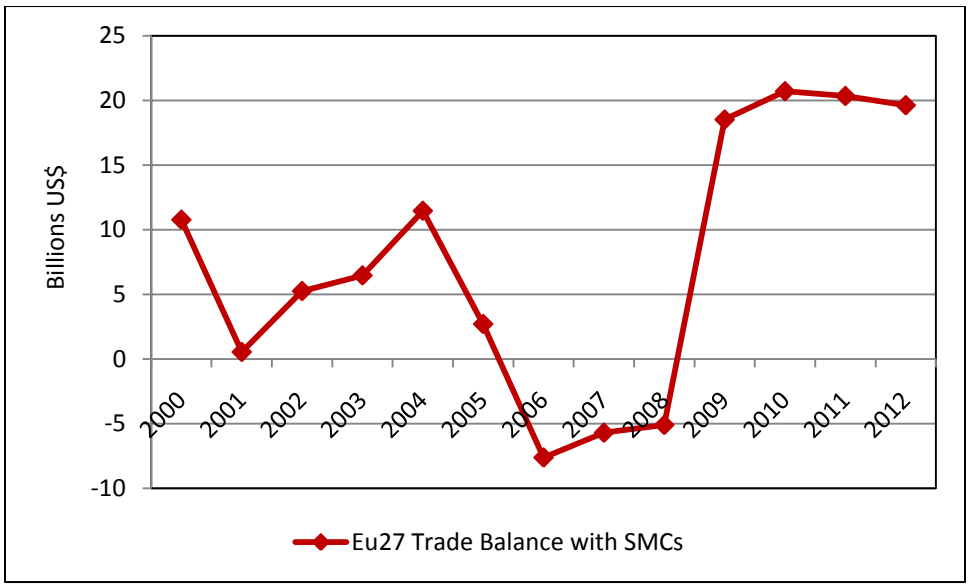


Source: COMTRADE Database

Figure 1.4 shows the EU27 exports to and imports from the SMCs as a percentage from the total level of exports to and imports from the world. In general, trade with the SMCs constitutes no more than roughly 10% or less of the EU27 total trade. Worth mentioning though is that the relative importance of the SMCs as export destination is greater than its importance as a source of imports to the EU. This explains the behavior of the EU27 trade balance with the SMCs shown in Figure 1.5. In general, the EU enjoys a trade surplus with the SMCs, except for a brief

phase right before the Global Financial Crisis, with a temporary and exceptional boom in both exports to and imports from the SMCs.

Figure 1.5: EU27 trade balance with SMCs



Source: COMTRADE Database

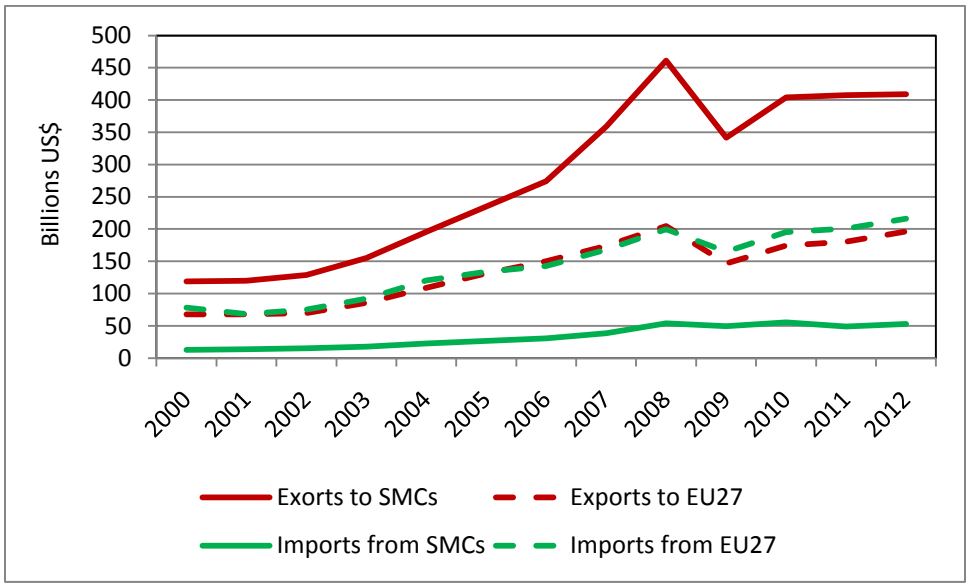
To summarize, the SMCs cannot be considered a key trading partner for the European Union. But it seems like, despite their relative weight in the EU trade profile, the net impact of these weak trade ties seem to be in favor of the European side of the Mediterranean.

The South Mediterranean perspective

The South and East Mediterranean Arab states share many characteristics that should grease the wheel of intra-regional trade. In addition to proximity, common language and culture are great advantages that should lead to a high level of economic integration among them. This is in theory, but in practice, many studies show that the actual level of trade among the Arab states is way below its potential. Many studies work on exploring the reasons behind the missing trade between the Arab states, among which are the SMCs of interest in this paper. For example, Al Atrash and Youssef (2000) suggest that the intra-Arab trade and the Arab trade with the rest of the world are below what is predicted by the gravity equation. Having that said, the scope of this

section is to compare this already "too little" level of intra-regional trade with the SMCs trade with the EU, or what is referred to in this paper as the inter-regional trade.

Figure 1.6: Intra- vs. inter-regional trade



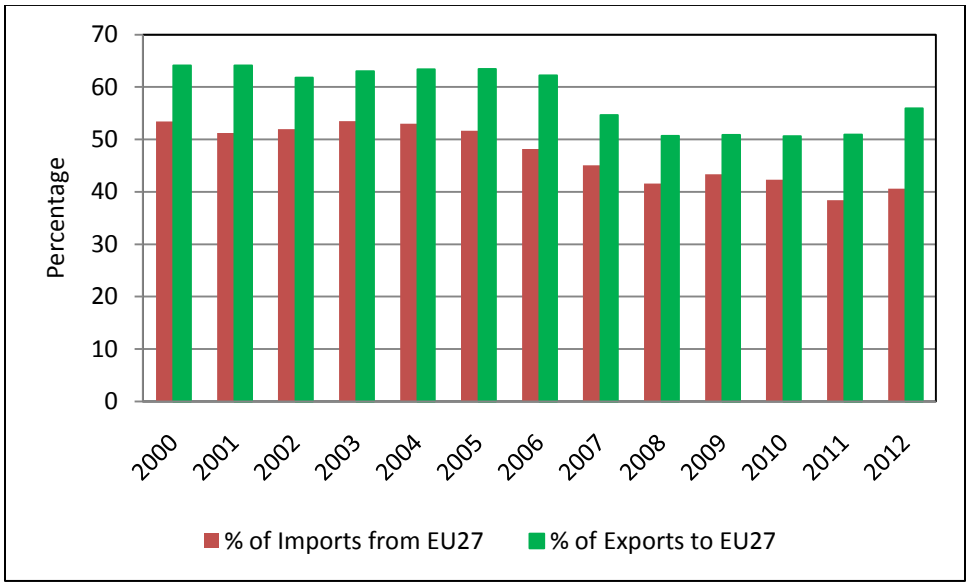
Source: COMTRADE Database

Figure 1.6 shows a comparison between the level of exports and imports taking place among the SMCs themselves and the level of exports to and imports from the EU27. The first observation is the intra-regional trade plays a greater role for exports, where as the EU serves as a more important source of imports for the SMCs. Figure 1.6 shows the level and trend of the SMCs exports among themselves as well as to the European Union. The trends of both export destinations are more or less consistent but exhibiting a greater percentage fall in inter-regional exports in the aftermath of the crisis in 2009 in comparison to the fall in intra-regional exports, 28% and 25% respectively. The years 2007 and 2008 witnessed a boom in intra-regional exports (30% and 28%) in comparison to the YoY percentage changes in the inter-regional exports for the same years (15% and 17%). This could be the reflection of the implementation of the Agadir Agreement and a decent post-implementation time span for the PAFTA. True that the same period also covers the implementation of most of the AAs signed with the EU, but the percentage changes in the exports to the EU27 are strictly consistent with the overall percentages for the SMCs exports to the world. In other words, the trend of the exports to the EU is consistent with

the average trend of the SMCs exports to the world, where as the trend of the intra-regional exports shows an above average performance.

Moving to the SMCs' imports, Figure 1.6 shows that imports from the EU exceed greatly the level of imports from the SMCs themselves. In general, the trends for both sources of imports are consistent The YoY percentage changes in imports from the EU27 always outperformed those from the other SMCs, except for a brief period around the Global Financial Crisis, when inter-regional imports dropped at a sharper rate than the intra-regional levels and recovered at a slower rate. By 2010 and despite the presence of the sovereign debt crisis, imports from the EU have regained their lead.

Figure 1.7: The relative weight of the EU27 among the SMCs trade partners

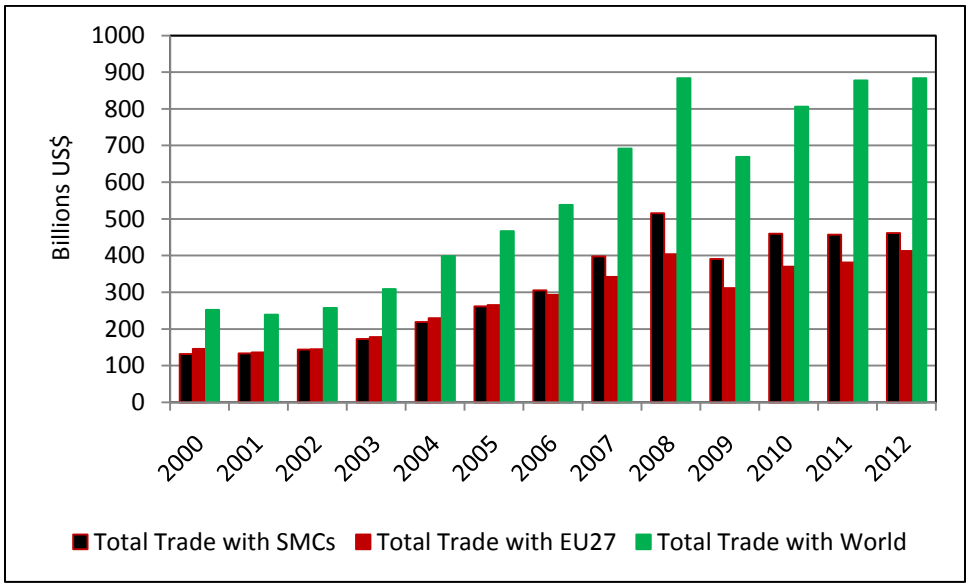


Source: COMTRADE Database

An important issue that must be covered now is the importance of the European Union as a trade partner to the SMCs. Unlike what was mentioned earlier about the extremely small weight of the SMCs as trading partners to the EU, the story is totally different from the Mediterranean perspective. In the early 2000s, almost 60% of SMCs exports were shipped to the EU and around 50% of their imports are European goods. Later on, despite the fluctuations of the shares of exports and imports, a general decline in the role played by the EU both as export destination as well as source of imports is evident. By the end of the first decade of the 21st century, the share

of the European goods flowing to the SMCs dropped to 40% of total SMCs' imports and to 50% of total SMCs' exports.

Figure 1.8: SMCs total trade



Source: COMTRADE Database

Still form the Mediterranean perspective, Figure 1.8 shows a comparison between the levels of SMCs total trade (exports plus imports) among themselves, with the EU and with the world. Inter-regional trade played a greater role till the mid 2000s, when it was overtaken by the increasing levels of intra-regional trade. This could be due to many factors, one of which could be the implementation of some intra-regional trade agreements such the Agadir Agreement and other bilateral agreements between the SMCs. This could imply a successful South-South economic integration process. Another explanation could be the failure of the North-South economic integration process. What could be seen as a success story for the intra-regional efforts could also be interpreted as the results of the failure of the North-South efforts. In other words, this phenomenon could tell either a story about an exceptional performance by SMCs trading with each other or a story about the failure of the Euro-Med process in catching up with steady and normal growth of the trade trends in the region.

To summarize, from the perspective of the Mediterranean countries, the EU is a major trade partner. It plays a greater role as a source of imports than it serves as a market for the SMCs

exports. Over the years, its role has been diminishing, although it is still considered the major trading partner for the SMCs. Whether this decline in importance is due to a failure of the North-South economic integration process or simply the result of the exceptional performance of other trading partners, such as other SMCs, USA or China, this is the question that will be further investigated in chapter 3 using empirical tools.

CHAPTER 2

LITERATURE REVIEW

This chapter will survey previous literature evaluating the impact of regional trade agreements in the Euro-Mediterranean context. All the work reviewed in the following sections is based on gravity models. Gravity models have been extensively used in international trade for the last 40 years because of their considerable robustness and explanatory power. Since their introduction in the 1960's, gravity models have been used for assessing trade policy implications and, particularly recently, for analyzing the effects of Free Trade Agreements on international trade (Kepaptsoglou et al, 2010:1). The concept of the gravity model is based on the Newtonian physics since it explains bilateral trade flows based on size and proximity of both origin and destination countries as well as other characteristics of specific importance. The following equation shows Newton's law of the gravitational force which is directly proportional to the masses of both objects (M_i and M_j) and indirectly proportional to the distance between them (D_{ij})

$$GF_{ij} = \frac{M_i M_j}{D_{ij}} \text{ , where } j \neq j$$

The above equation has to be transformed to its natural logarithmic form for estimation. When applied in international trade, the gravitational force becomes the bilateral trade flow (i.e. exports, imports, exports as percentage of GDP, imports as percentage of GDP, etc.) and the mass is usually proxied by the GDPs of reporter and partner countries, their GDPs and their populations, their GDPs and their per capita GDPs or just their per capita GDPs.

$$LnGF_{ij} = LnM_i + LnM_i - LnD_{ij} \text{ , where } j \neq j$$

In addition to mass and distance, which are considered the standard gravity variables, dummies for trade policy tools (i.e. trade agreements) or other institutional variables (i.e. currency union) can be added.

Despite the lack of a specific theoretical background behind the gravity model in international trade, its robust empirical results make the use of it an excellent tool in practical applications. To bridge the gap between theory and practice in order for the gravity model not to be characterized as "facts without theory", various works have provided microfoundation to the gravity equation such as Anderson and van Wincoop (2001). To solve the "border puzzle" they derived the gravity equation taking the theory behind it more seriously. The building blocks of their gravity model are: First, all goods are differentiated by origin where each region is specialized in one product and that its supply is fixed. Second, identical and homothetic preferences approximated by a CES utility function. The resulting microfounded gravity equation tells that bilateral trade, after controlling for size, depends on the bilateral trade barrier between regions *i* and *j* divided by the product of their multilateral trade resistance.

As mentioned before, the economic integration process in the region is built on two pillars: North-South (Inter-regional) and South-South (Intra-regional). The following sections will discuss the recent previous literature evaluating the effect of the various trade agreements in the region serving both pillars.

2.1 Evidence of the Inter-regional Integration

The Inter-regional integration effort is proxied in this paper by the Association Agreements signed by the South Mediterranean Countries, individually, and the EU as partner. The AAs form a grid of bilateral agreements with the aim of establishing a free trade area among all parties at the end. The AAs were signed and implemented at different times depending on the negotiating SMC. But in general they came in force starting from the late 90s till the early years of the 21st century. Given the relatively recent implementation of the AAs, the empirical work that focuses on estimating their impact on trade flow in the region is very few. Table 2.1 shows a summary of the main empirical work reviewed in this section.

Table 2.1: Inter-regional integration (North-South pillar)

Author(s)	Sample	Methodology	Findings
Ruiz and Villarubia (2007)	102 countries over the 1976-2005 period	Gravity model using country-year fixed effects in order to control for multilateral resistance terms	Only country fixed-effects: negative impact of the EU-Med AAs on the trade flow: some evidence of trade creation between members and non-members Country-year fixed-effects: non-significant impact of these agreements on members
Hagemejer and Ciselik (2009)	7 MENA countries plus 196 partner countries over the period 1980-2004	Gravity model includes individual and country-pair fixed-effects as well as GDP per capita as proxy for capital/labor ratios in partner countries (account for factor proportions)	The EU-Med AAs increased the trade flow from the EU to the Mediterranean partners, but had no significant or even negative impact on the flows in the opposite direction.
Bensassi et al. (2010)	7 MENA and 4 EU countries over the 1995-2007 period	Sector-level gravity equations for exports from MENA to EU countries distinguishing between the effects on the intensive (values) and extensive (numbers) margins of trade	A positive impact of the EU-Med FTAs on the exports of the Mediterranean countries through the increase in the intensive margin.

Ruiz and Villarubia (2007) estimate a gravity equation with country-year fixed effects to control for the multilateral trade resistance term for a sample of 102 countries (including the Euro-Med countries) from 1976 to 2005. Since the main focus of their paper is the proper use of dummies in estimating gravity equations, they run the model once with time-constant fixed effects and then with time-varying fixed effects. The interesting finding is that the coefficients of interest – the membership in a Euro-Med association agreement – are negative in the time-constant specification and insignificant in the more robust time-varying fixed effects specification. Yet the insignificant role of the AAs reported in their study should be handled with caution due to the relatively short post-implementation time span of their sample.

Hagemejer and Ciselik (2009) used the augmented gravity equation for seven MENA countries and 196 of their partner countries from 1980 to 2004. In their paper they used a generalized

gravity equation that can be derived from a variety of neoclassical and new trade theory models that included in addition to the AAs dummies for other muultilateral and bilateral free trade agreements concluded by the MENA countries among themselves as well as with countries from outside the region. They studied the impact of signing the AAs on both imports and exports of particular MENA countries as well as of the whole group. Their results show that the AAs contributed to a significant increase of the imports of the MENA countries from the EU but didn't lead to any expansion of the MENA exports to EU markets. The impact on the particular MENA countries differs greatly across the different countries of the region.

As for Bensassi et al. (2010), they follow a less common analysis. They estimate a structural gravity equation using highly disaggregated data for exports from seven MENA countries to the four biggest continental European economies (Germany, France, Italy and Spain) from 1995 till 2007. The objective is to estimate the impact of signing the AAs on both the intensive and extensive margins of trade. Intensive margin of trade refers to the mean value of individual shipments whereas the extensive margin of trade refers to the number of exporting firms. Results show a positive and significant effect of the AAs on the MENA exports in total. This increase in the trade flow is driven by a 43% the extensive margin of trade, which reflects a variety of traded products. The remaining 57% is driven by the intensive margin of trade or in other terms the average value of the traded shipments. The positive impact on MENA exports is considered a rare finding in the literature. Therefore, these results should be regarded with caution due to the high risk of omitted variables both from the sampled countries as well as the selected sectors. It is also worth mentioning that this paper, unlike the previous and later reviewed ones, is not using aggregates for the trade flows, but is focusing on highly disaggregated data. In other words, the results should be strictly interpreted for the sectors included and not to be generalized.

2.2 Evidence of the Intra-regional Integration

This section will be reviewing some of the literature evaluating the regional trade agreements that help build the second pillar of economic integration in the region, namely the South-South level. The main agreements implemented among the SMCs and MENA in general are the PAFTA and the Agadir Agreement. It is worth mentioning that some of the following papers also

report evidence relevant to the first pillar discussed in the previous section. Table 2.2 summarizes the papers discussed in this section.

Table 2.2: Intra-regional integration (South-South pillar)

Author(s)	Sample	Methodology	Findings
Abedini and Peridy (2008)	15 members of the PAFTA, 6 potential Arab members plus 35 reference countries over the 1988-2005 period	Gravity model based on the theoretical foundation of Anderson and Van Wincoop (2001) estimated using fixed-effects, Hausman-Taylor, and GMM estimators allowing for: - persistence of trade flows (lagged values regressors) - multilateral trade resistance (exporters & importers fixed-effects) - time-varying component of multilateral resistance (proxied by a composite index of trade openness) - proxies for the development of information infrastructure at the bilateral level and the quality of law and contract enforcement at the country level	An increase of intra-Arab trade flows of 16% to 24% can be attributed to the PAFTA, depending on the estimation methods
CASE report (2009)	Trade data for 100 countries over the 1970-2008 period	A gravity-based joint estimation of the trade effects of the intra-regional TAs in the Mediterranean region (PAFTA & Agadir agreements) and of the EU-Med agreements including country-pair fixed-effects to reduce omitted variables risk due to unobserved pair-wise characteristics.	PAFTA: a coefficient of 0.76, indicating that trade between members of this agreement more than doubled in average (an increase of 113%) Agadir Agreement: no significant trade creation effect among its members and increase of members' exports to non-member countries

Abedini and Peridy (2008) provide one of the earliest ex-post evaluations of the PAFTA using a sample of 56 countries from 1988 to 2005. They use various estimation techniques for robustness such as transformed fixed-effects, Hausman-Taylor estimator as well as dynamic GMM. They

also include dummies for other RTAs implemented among the sampled countries one of which is of particular interest, namely the Euro-Med AAs. All of their trials report consistent results regarding the impact of the both PAFTA and the AAs. Implementing the PAFTA increased the exports of the member countries (positive and statistically significant coefficients in all trials). As for the impact of the Euro-Med agreements, the estimated coefficients are all statistically insignificant with a value close to zero (positive and negative), which reflects the insignificant impact the AAs have on the exports for the signatories.

The CASE report (2009) follows the methodology used by Ruiz and Villarubia (2007) comparing 100 countries of largest exports in 2004 over the period from 1970 to 2008. Apart from studying the impact of the Euro-Med agreements on the partners, it also studies the effects on the individual Mediterranean countries individually as the depth and length of the integration process differs across countries. It also investigates the impact of the PAFTA and Agadir Agreement on the trade flow. It also employs a more robust estimation technique by including pair dummies to reduce the omitted variables bias from unobserved pair-wise characteristics. It also includes three dummies for each FTA to capture the effects of these FTAs on both trade creation outside the FTAs and trade diversion from outside the FTAs in addition to the standard investigation of the FTAs impact on trade creation inside the FTAs. As for the results, the study finds no support for the hypothesis that signing the AAs had contributed in increasing the trade flow between the parties involved since the coefficient of the variable was statistically insignificant and close to zero (-0.005). As for the PAFTA, it had a significant effect on the trade flow between its members (coefficient 0.759). Similar to the AAs, signing the Agadir Agreement had no significant effect on trade among its signatories (coefficient -0.035 and statistically insignificant). Yet these last results should be treated with caution, since the sample includes only two post-implementation years. It could have been simply too early to judge. This is the same reason that could explain the results related with the impact of signing the AAs on the individual Mediterranean countries. Only Egypt and Tunisia report positive and statistically significant results for signing the AAs (0.74 and 0.28 respectively). As for Algeria, signing the AA seems to have a negative impact on its exports (-0.3). As for Morocco, Jordan and Israel, the coefficients of the AAs were statistically insignificant.

After discussing the literature evaluating the impact of the regional trade agreements of interest, a general remark should be made: A general limitation of the use of gravity models as described above means that the results reflect the gross impact of the RTAs on trade flows between the signatories due to the neglect of the actual level of protection prior to and during the implementation of the agreement and its coverage in terms of products, and the exceptions at the product and sector level and also the time schedule of tariff reductions. Also these results should be strictly interpreted over the covered time periods and cannot be generalized.

CHAPTER 3

EMPIRICAL ANALYSIS

3.1 Data Sources and Equation

This section is devoted to describing the data and equation used in the empirical analysis. The empirical strategy in this paper follows the approach started by Anderson and Wincoop (2001) augmenting the gravity equation with a multilateral trade resistance term in order to obtain a specification for the gravity equation that can be considered as a reduced form of a model for trade with microfoundation. This study is based on a panel composed of 14 countries (5 EU-members, 7 Non-EU Mediterranean countries in addition to USA and Japan)[6] for the period from 1991 till 2012. As for the sources, data for the bilateral trade flow (exports) are from the United Nations COMTRADE database, GDP of both reporter and partner countries are from the World Bank database, dates of the enforcement of the different RTAs and other bilateral agreements between the sampled countries are from the World Trade Organization trade agreements database and finally variables controlling for pair-specific characteristics i.e. distance are from the CEPII database.

As will be described later in details, the empirical analysis investigates the impact of the various regional trade agreements in the Euro-Med region from four perspectives: First, it estimates the impact of the trade agreements (PAFTA, AGADIR and AAs) on the trade flow (i.e. exports) between the sampled countries. Second, it estimates the impact of these trade agreements on the exports of SMCs to the rest of the sampled countries. Third, it estimates the impact of the AAs on the exports of the EU countries to the SMCs. Finally, it identifies the impact of the trade agreements on the exports of the different SMCs individually. The estimated gravity equations in these trials are all derived from the following equation depending on the best specification for each trial:

[6] The countries included in the sample are: Germany, France, Italy, Netherlands and the United Kingdom (EU-countries), Algeria, Egypt, Israel, Jordan, Morocco, Tunisia and Turkey (non-EU Mediterranean countries conveniently called SMCs i.e. South Mediterranean Countries) in addition to USA and Japan as controls for trade with the rest of the world.

$$lexp_{ijt} = \alpha + \beta_1 lmass_{ijt} + \beta_2 ldist_{ijt} + \beta_3 contig_{ijt} + \beta_4 comlang_{off\ ijt} + \beta_5 colony_{ijt} + \beta_6 wto_{ijt} + \beta_7 pafta_{ijt} + \beta_8 agadir_{ijt} + \beta_9 aa_{ijt} + \beta_{10} bil\_agr_{ijt} + e_{ijt} \quad (1)$$

where:

i) *lexp* is the natural logarithm of the exports in USD from country *i* = reporter to country *j* = partner,

ii) *lmass* is the natural logarithm of the product of the GDPs in USD of both reporter and partner,

iii) *ldist* is the natural logarithm of the simple distance between the most populated cities in both reporter and partner countries,

iv) *contig* is a dummy taking 1 for contiguity 0 otherwise,

v) *comlang_off* a dummy taking 1 for reporter and partner countries sharing an official or primary language 0 otherwise,

vi) *colony* a dummy taking 1 if reporter and partner countries were ever in a colonial relationship 0 otherwise,

vii) *wto* a dummy taking 1 if both reporter and partner countries are members of the World Trade Organization 0 otherwise,

viii) *pafta* a dummy taking 1 if both reporter and partner countries are members of the Pan Arab Free Trade Area 0 otherwise,

ix) *agadir* a dummy taking 1 if both reporter and partner countries signed the Agadir Agreement 0 otherwise,

x) *aa* a dummy taking 1 if both reporter and partner countries signed an Association Agreement 0 otherwise,

xi) *bil_agr* a dummy taking 1 if reporter and partner countries signed a bilateral agreement 0 otherwise.

The *va*riables *contig, comlang_off* and *colony* serve as proxies for the multilateral trade resistance term and are taken from the CEPII database as well as the distance variable. The dummies for the various trade agreements (*pafta, agadir, aa* and *bil_agr*) are constructed based

on th*e* dates of enforcement registered in the WTO agreements database as well as the WTO membership dummy *wto*.[7]

In general, the variables can be categorized into three main categories: *(1) Standard Gravity Variables:* Distance and Mass, *(2) Other controls:* Contiguity, common language and colonial relationship as proxies for the multilateral trade resistance term as well as the WTO membership for controls and finally *(3) Trade Agreements:* PAFTA, AGADIR, AA and other bilateral agreements. It is expected that bilateral exports are negatively influenced by the distance but positively influenced by the mass, contiguity, common language, colonial history and the WTO membership. As for the priori on the impact of the RTAs, the literature reports contradicting results for the PAFTA, Agadir Agreement as well as the AAs (positive, negative as well as non-significance). The other bilateral agreements are expected to have a positive influence on the exports.

3.2 Empirical Strategy

Moving to the estimation technique and reporting of the results, the study peruses the same methodology for all trials despite the differences in the specifications of the gravity equations used for the different purposes. Since the empirical analysis is based on a panel data technique, estimating the gravity equation using the Ordinary Least Squares (OLS) yields results that suffer from heterogeneity bias. The most widely used techniques controlling for heterogeneity are the Random Effects Model (REM) and Fixed Effects Model (FEM). The REM yields more efficient estimates if the orthogonality conditions hold: unobserved bilateral effects are ~n.i.i.d and orthogonal to the remaining part of the error term. In other words, regressors have to be uncorrelated with individual effects and error term for all cross sections and time periods. If the orthogonality conditions are violated, FEM yield consistent estimates. A Hausman Specification Test is then conducted to test the presence of correlation between explanatory variables and individual effects with the null hypothesis of zero correlation. For all trials tables of results report both FEM and REM estimates in addition to the Hausman Specification Test statistics. In some of the trials the orthogonality conditions are violated, hence, a FEM is preferred. But a major

[7] Tables with the exact dates for those variables are provided in the Appendix.

drawback of FEMs is the inability to provide estimates for time-invariant variables, such as distance, common language, contiguity and colonial history. To overcome this problem, the results of the Hausman Taylor Estimator (HT) are also reported. The HT is a 2SLS random effects model that allows the parameter estimation of time-invariant variables despite the presence of correlation between explanatory variables and individual effects. Finally, to deal with the non-stationarity problem of the macroeconomic variables used in the gravity equations (Exports and GDPs), more robust results to I(1) variables using an Autoregressive Distributed Lag (ARDL) specification following Pesaran et al. (2001) are reported in the Appendix. In general the results of the ARDL approach don't contradict the findings of the baseline models reported in the body of the research in terms of the significance of the different trade agreements.[8]

3.3 Empirical Results

The section is devoted to the elaboration of the empirical analysis conducted and the interpretation of the results. As mentioned earlier, the study investigates the impact of the various trade agreements relevant to the region in terms of their impact on the exports of the sampled countries in general, then focusing on the exports of the SMCs, the exports of the EU countries and finally the impact on the exports of each individual SMC.

3.3.1 The Impact of the Trade Agreements on the Full Sample

The first trial of the empirical analysis aims at identifying the impact of the various trade agreements enforced in the region. As mentioned before, the economic integration process in the region is built on two main pillars: Intra- and Interregional integration. A Euro-Mediterranean Free Trade Area can only be effective if economic integration is achieved both among the SMCs themselves, i.e. South-South economic integration as well as between the EU from one side and the SMCs from the other, i.e. North-South economic integration. As far as the South-South level

[8] Robustness tests using sub-samples for all estimation techniques (FE, RE, HT and ARDL) are provided in the Appendix.

or the intra-regional level is concerned, there are two main agreements of interest: The Pan-Arab Free Trade Agreement (PAFTA) in force since 1998 between Egypt, Jordan, Morocco and Tunisia and since 2008 by Algeria. It aimed at creating a free trade area between the Arab states among which are the South Mediterranean countries of interest. The other important agreement is the Agadir Agreement enforced in Egypt, Jordan, Morocco and Tunisia since 2007. As for the North-South or inter-regional level, the main agreement is the Association Agreements (AAs) signed between the EU and the SMCs individually but in a manner that allows the construction of a grid of bilateral agreements that lead to an overall integrated region. The AAs cover Algeria (2005), Egypt (2004), Israel (2000), Jordan (2002), Morocco (2000) and Tunisia (1998). The Custom Union with Turkey (1996) is included here among the North-South agreements since Turkey is historically considered the portal between Europe and the Middle East in general. And achieving a high level of economic integration between Turkey and Europe form one side and between Turkey and the rest of the Mediterranean countries form the other, can play a major role in achieving overall regional economic integration. Therefore, other bilateral agreements between the countries of the sample are included to capture further efforts of economic integration. Those agreements are between Turkey and Egypt (2007), Turkey and Israel (1997), Turkey and Jordan (2011), Turkey and Morocco (2006), Turkey and Tunisia (2005) as well as extra-regional bilateral agreements between USA and Israel (1985), USA and Jordan (2001) and finally between USA and Morocco (2006).

Moving to the estimated gravity equation, as mentioned before, equation (1) represents the full model specification from which the actual estimated equations in all trial are derived based on the best specification results. In the current trial with the full sample the variables *contig, colony* and *wto* were dropped for insignificance. The estimation results are shown in Table 3.1 (Panel A) for fixed effects (Column 1), random effects (Column 2) and finally for the Hausman-Taylor Estimator (Column 3).

Table 3.1: Estimation results (1991 – 2012)

Dependent Variable *lexp*	**Full Sample (A)**			**SMCs Sample (B)**			**EU Sample (C)**		
	FE (1)	**RE (2)**	**HT (3)**	**FE (1)**	**RE (2)**	**HT (3)**	**FE (1)**	**RE (2)**	**HT (3)**
lmass	.625 ***	.668***	.624 ***	.696***	.721***	.701***	.601***	.604***	.601***
ldist	(omitted)	-.700***	-.456***	(omitted)	-1.067***	-2.593**	(omitted)	-.374**	-.335
contig				(omitted)	-1.222**	-1.858***			
comlang_off	(omitted)	-.006	-.834*	(omitted)	.788***	.3707	(omitted)	.741*	-2.527
pafta	.297***	.226***	.298***	.201 **	.154**	.187***			
agadir	.451***	.396***	.452***	.363***	.328***	.353***			
aa	.014	-.035	.017	-.065	-.084	-.067	.035*	.033	.035*
bil_agr	.569***	.510***	.572***	.540***	.517***	.545***			
constant	-12.874***	-9.673***	-9.123***	-17.111***	-10.343***	-2.952***	-11.150***	-8.384***	-8.333***
Overall R^2	0.70	0.80		0.49	0.67		0.79	0.83	
Hausman Chi^2 Test	81.38***(FE)			6.49 (RE)			N/A		
Sargan-Hansen Test	P-value(Chi-sq) =		0.698	P-value(Chi-sq) =		0.014	P-value(Chi-sq) =		0.000
No. of observations	3845			1863			976		
No. of groups	179			88			45		

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

As shown in Table 3.1, columns (1) and (2) show the estimation results with fixed effects and random effects respectively. The Hausman Specification Test is conducted to choose the best model for that specification. As reported in Table 3.1 the null hypothesis is rejected, which recommend the use of fixed effects. Accordingly, results show that that both PAFTA and AGADIR are significant at 1% with coefficients 0.29 and 0.45 respectively. This indicates the relative effectiveness of the Agadir Agreement compared to the PAFTA. As for the Association Agreements, the estimated coefficient is positive but statistically insignificant indicating that signing the AAs didn't play a significant role in affecting the exports of the sampled countries. This result is already reported in previous literature as stated before.

Finally, other bilateral agreements variable has a positive coefficient of 0.56 significant at 1%. Moreover, the mass variable is positive and significant as expected. One drawback of the FEM is that time-invariant variables, in this case distance and common language, can't be estimated. Therefore, a HT estimator is used to estimate those variables. As expected the distance has a negative and significant coefficient, but the common language has a negative coefficient but weakly significant only at 10%. This result is unexpected. To verify the validity of the instruments used in the HT estimation the Sargan-Hansen test, a test for overidentifying restriction, is conducted. The joint null hypothesis is that the instruments are valid instruments, i.e., uncorrelated with the error term, and that the excluded instruments are correctly excluded from the estimated equation. According to the p-value of the test statistic in Table 3.1, the null hypothesis cannot be rejected, which validates the instruments used.

3.3.2 The Impact of the Trade Agreements on the South Mediterranean Countries

I will move now to the trial that investigates the impact of the different trade agreements on the exports of the SMCs in specific. Equation (1) shows the estimated gravity model after dropping the variables *colony* and *wto* for insignificance in all specifications trials. Worth mentioning is that the SMCS sample represents the bilateral trade between SMCs as reporters to EU, other SMCs, Japan and USA. It captures the SMCs exports among each other (South-South integration) as well as to EU countries (North-South integration).

Table 3.1 (Panel B) shows the estimation results for both the fixed effects and random effects models in columns (1) and (2). The null hypothesis of the Hausman Specification Test is not rejected, which recommends the use of a REM. The coefficient estimates for mass and distance are significant at 1% and have the expected signs. As for the control variables contiguity and common language, both are significant at 5% and 1% respectively. Contiguity has a negative impact on exports which is contradicting to the priori but in line with some results reported in the literature (Abedini and Peridy, 2008**).** Whereas sharing a common official or primary language has a positive impact on the reporters' exports. As for the trade agreements, both PAFTA and Agadir Agreement have positive and significant coefficients 0.15 (at 5%) and 0.32 (at 1%) respectively. These results coincide with the ones reported for the full sample. As for the AAs, the estimated coefficient has a negative sign but is statistically insignificant. This is also supported in some of the previous studies. Finally, other bilateral agreements are significant at 1% and have a positive impact on exports. Column (3) shows the coefficients estimates from the HT, which are relatively identical to the results of the REM discussed except for the insignificant coefficient of the common language variable.

3.3.3 The Impact of the Association Agreements on the EU countries

The following trial investigates the impact of the AAs on the EU countries in specific. Together with the results reported in section (3.2.2), a better judgment about the extent of the North-South integration can be reached. Equation (1) represents the estimated gravity model for that purpose after dropping the variables *comlang_off, colony* and *wto* for insignificance in all specifications trials. Worth mentioning is that the EU sample represents the bilateral trade between EU countries as reporters and SMCs, Japan and USA as partner countries. In that context, only the AAs as regional trade agreements are relevant.

Table 3.1 (Panel C) reports the estimation results using fixed effects, random effects and HT models. According to all models the coefficient of the AAs are always positive (0.03) and significant at 10% in both the FE and HT models. That result implies that signing the AAs had an asymmetric effect on the signing states. That positive impact on the EU exports combined with the insignificance of the AAs in the SMCs sample, indicate a deficiency in the economic

integration process. Explanations for the biasness in benefits gained from the AAs can range from asymmetric design of the AAs to more complex problems such as the absence of any further gains possible to the SMCs from trading with the EU.

3.3.4 The Impact of the Trade Agreements on the Exports of the different SMCs individually

This section takes a closer look at the country-specific impact of the different agreements. The focus is only on SMCs to further explain the results of AAs insignificance reported in section (3.2.2). The analysis is based on the same specification used for the SMCs sample in section (3.2.2). Table 3.2 reports the estimation results for PAFTA, Agadir Agreement, AA and the other bilateral agreements. Furthermore, for each agreement, the results from FE, RE and HT are always reported.

Table 3.2: Estimation results for the SM country-specific sample (1991 - 2012)

Reporter	PAFTA			AGADIR		
	FE (1)	**RE (2)**	**HT (3)**	**FE (1)**	**RE (2)**	**HT (3)**
Algeria[9]	-.004	-.001	.030			
Egypt[10]	.524***	.526 ***	.511***	1.378 ***	1.380***	1.365***
Israel[11]						
Jordan[12]	.068	.052	-.007	.133	.134	.072
Morocco	.520***	.298**	.513***	.453***	.273*	.447***
Tunisia	-.228*	-.246 *	-.231*	-.028	-.037	-.027
Turkey						

[9] The test of overidentifying restrictions couldn't be computed for the full model (1991 – 2012) but was successfully conducted verifying the choice of the instruments for the sub-sample (1996 – 2010). Therefore, the reported results are relatively robust.
[10] Same as the footnote above
[11] Same as the footnote above
[12] Same as the footnote above

Table 3.2: Estimation results for the SM country-specific sample (1991 - 2012) (Continue)

Reporter	AA			BIL_AGR		
	FE (1)	**RE (2)**	**HT (3)**	**FE (1)**	**RE (2)**	**HT (3)**
Algeria	-.463**	-.465*	-.448*			
Egypt	.501***	.508***	.496***	1.242***	1.228***	1.184***
Israel	-.172	-.177	-.164	.167	.184	.132
Jordan	-.778***	-.783***	-.847***	1.762	1.836***	1.771***
Morocco	.339***	.223**	.336***	.550***	.311*	.532***
Tunisia	-.021	-.016	-.004	-.273	-.287	-.278
Turkey	.272***	.276***	.275***	.471***	.470***	.466***

Note: *** significant at 1% , ** significant at 5%, * significant at 10%.

In the case of Algeria, the only relevant agreements are the PAFTA and AA. Whereas, the PAFTA had no significant impact on the Algerian exports, the AAs had a negative impact. As for Egypt all agreements are relevant, have statistically significant and positive coefficients. Since Israel, for historical and political reasons, is the least integrated state with the rest of the SMCs, only the AAs and the other bilateral agreements are relevant, but both are statistically insignificant. Moving to Jordan, where all agreements are relevant, only the AA and the other bilateral agreements are significant. But, where as the other bilateral agreements had a positive impact on the Jordanian exports, signing the AA had a negative impact. Same as Egypt, Morocco reports significant and positive coefficients for all agreements of interest. In contrast, Tunisia reports insignificant results for all agreements except PAFTA that has a significant but negative coefficient. Finally, Turkey reports positive and significant coefficients for the AA as well as the other bilateral agreements, which basically reflects its ties with the rest of the SMCs. This emphasizes the importance of Turkey as an integration hub between the EU and the Middle Eastern South Mediterranean countries.

To summarize, the empirical analysis in this paper shows that on the South-South pillar of the economic integration process in the region, implementing the PAFTA has a positive effect on the exports of the sampled countries in general. This result is consistent with previous findings such as Abedini and Peridy (2008) and the CASE report (2009). When focusing on the exports of SMCs, signing the PAFTA also has a positive impact on the exports of the signatories from the

South Mediterranean MENA countries in general. As for the impact on the exports of particular SMCs, it seems like only Egypt and Morocco are the countries reporting positive and statistically significant coefficients. Moving to the second RTA of interest on the South-South integration level, the Agadir Agreement, results show a positive impact of singing the agreement on the whole sample. Also the results from the SMCs sample support that positive impact. But that positive effect seems to be affecting only Egypt and Morocco, whereas Jordan and Tunisia report insignificant coefficients. These results are not in line with the findings of earlier works, which report an insignificant impact of the Agadir Agreement on the trade flow of its signatories. But, as mentioned earlier while discussing those previous works, this insignificant impact has to be treated with caution due to the short ex-implementation time covered in those works. This is not the case here. Therefore, one can safely support the hypothesis of the positive impact also of the Agadir Agreement.

Moving to the results from the second pillar for economic integration in the region, the North-South level, implementing the AAs doesn't have any significant impact on the exports of the whole sample. These results are in line with previous findings such as Ruiz and Villarubia (2007) and Hagemejer and Ciselik (2009). This insignificant impact is also reported when focusing on the exports of SMCs in general, whereas a positive and significant impact of signing the AAs is reported for the exports of the EU countries. As for the impact of signing the AAs on the particular SMCs, results show an increase in exports of Egypt, Morocco and Turkey, a decrease in exports for Algeria and Jordan and finally an insignificant impact on the exports of Morocco and Israel. The results for Egypt, Algeria and Israel are consistent with those of the CASE report (2009). But it contradicts with what it reports about Morocco and Tunisia. According to its sample that covers till 2008, there was no significant impact on the exports of both Morocco and Jordan, whereas the sample used in this paper covers till 2012 and reports significant and positive impact for Morocco and a negative impact on the Jordanian exports. As for Tunisia, the CASE report (2009) shows a positive and significant impact on the exports of Tunisia, whereas here the coefficient for the AA in the case of Tunisia is negative and statistically insignificant.

In other words, the empirical findings of this paper can be considered as warning signs regarding the effectiveness of the Euro-Med integration process. The main goal of the Euro-Med process, on the economic integration level is to liberalize the flow of trade and create a region of shared

economic prosperity. This should be achieved by boasting the level of trade between both shores of the Mediterranean by implementing a grid of bilateral Association Agreements between the EU and the SMCs. This should be complemented by EU-sponsored South-South bilateral and multilateral trade agreements among the SMCs. The assessment of the effectiveness of those efforts reported in this paper; show a major failure on the inter-regional level and more promising results on the intra-regional level. The failure on the inter-regional level is not only a failure of boasting the flow of exports from the less developed SMCs to the European markets, but also a failure in creating balanced benefits for the signatories. The positive impact of the AAs on the exports of the EU countries, although relatively small, reflects asymmetries in the design of the AAs. This inefficient design of the AAs led to a one-directional flow of benefits across the Mediterranean. And unfortunately, the benefits are extracted from the less developed and more in need side of the Mediterranean.

CONCLUSION AND SOME POLICY IMPLICATIONS

This paper provides an ex-post assessment of the Euro-Med Association Agreements signed between the EU and some SMCs. The AAs serve as a key building block in the Euro-Mediterranean integration process, launched in the mid 90s by the Barcelona Process. These agreements should boast the flow of trade between both shores of the Mediterranean complemented by the presence of other regional trade agreements that liberalize the trade between the southern Mediterranean states themselves. The empirical analysis in this paper is based on a gravity model setting estimated using various techniques for robustness. Fixed effects, random effects and Hausman-Taylor estimators are reported for the gravity equations estimated for the panel of 14 countries (7 Non-EU Mediterranean countries, 5 EU members in addition to control countries USA and Japan) for the period from 1991 to 2012. To investigate thoroughly the impact of the agreements of interest from the perspective of all signatories, four different specifications of the gravity equation are estimated:

I. Estimating the impact of the trade agreements (PAFTA, AGADIR and AAs) on the trade flow (i.e. exports) between the sampled countries.
II. Estimating the impact of these trade agreements on the exports of SMCs to the rest of the sampled countries.
III. Estimating the impact of the AAs on the exports of the EU countries to the SMCs.
IV. Estimating the impact of the trade agreements on the exports of the different SMCs individually.

Results show positive impact for signing both the PAFTA and the Agadir Agreement on the sample as a whole and also on the exports of the SMCs in specific. This implies a success for the intra-regional economic integration process, which is actually the complementary pillar of the Barcelona Process. The main pillar is the inter-regional economic integration, which is evaluated here by assessing the impact of the AAs on the trade flow. Here, the results are less promising. Signing the AAs has no significant impact on the exports of the sampled countries in general as well as on the exports of the SMCs on average. However, signing the AAs seems to benefit the EU countries. A positive and significant coefficient is reported for the AAs in the sample

focusing on the exports of the EU to the SMCs. This implies a bias in the outcome of the first pillar. The AAs did succeed in boasting the level of trade between the two shores of the Mediterranean, but only in one direction. Hence, the objective of creating a region of "shared economic prosperity" seems to be not achieved. An asymmetric distribution of benefits among the signatories of the AAs is evident. The general outcome so far recommends a deeper investigation into the design of the AAs that led to the one-sided benefits. This is especially important since the beneficiaries in this case are the more developed countries. The Barcelona Process intended to create a free trade area that can contribute in creating a region of shared prosperity and wealth. In that sense, the Barcelona Process didn't succeed in lifting up the less developed states of the Mediterranean, but on the contrary it only opened up their markets for the European goods. On a lighter note, tracing the impact of these agreements on the exports of the individual SMCs seems to be providing some promising leads. The results reported in this paper for the impact of signing the PAFTA, the Agadir Agreement as well as the AAs, show that both Egypt and Morocco have always benefited from those RTAs. In other words, despite the general insignificant impact of the AAs on the exports of the SMCs, in the country-specific results both Egypt and Morocco report positive a significant coefficients. Same is reported for the coefficients of the PAFTA and Agadir Agreement. These positive results for Egypt and Morocco could be due to external factors such as their macroeconomic environment, a relatively better industrial infrastructure compared to the rest o the SMCs or to any other non-trade-policy factors. But it could also be due to more efficient trade-related institutional factors that enabled both Egypt and Morocco to benefit from trade once joining a RTA. Future studies focusing on trade policies and institutions of Egypt and Morocco and comparing them with their counterparties in the rest of the SMCs can lead to beneficial policy recommendations that can help the rest of the region benefit from free trade.

The positive results for Egypt and Morocco can also help in enhancing the design of the AAs. As mentioned before not all the signatories of the AAs report positive or significant impact on their exports. The country-specific results show that only Egypt, Morocco and Turkey report positive and significant impact for signing the AAs on their exports. The design of the AAs is in general identical among the signatories with minor modifications to meet the country-specific needs. A comparison between the AAs signed with Egypt, Morocco and Turkey and those signed with countries that either didn't' report any significant impact such as Israel and Tunisia or reported

negative impact on their exports such as Algeria and Jordan, can be beneficial. Matching the terms of the AA with the country-specific characteristics and comparing those for the different countries relevant to their successfulness can lead to ideas of how to improve the overall design of the agreements.

The Euro-Mediterranean process is an ambitious project which makes it more difficult to reach satisfactory outcomes easily. The geopolitical nature of the East and South Mediterranean countries, especially in the past few years, puts it in the center of events that have major global impacts. The political instability and on-going wars create new obstacle on the road for stability and prosperity, not only for the affected countries but also for their neighbors. This fact has been well-known to their European neighbors. The multidimensional nature of the Barcelona Process and its offspring, the Union for the Mediterranean, makes it the perfect institution capable of dealing with this matter. Achieving deeper integration in the region is the answer to all the problems. Moving form trade agreements to a fully-fledged economically integrated region supported by cooperation on political, cultural, social and humanitarian levels is the ambitious but not impossible goal to be achieved here.

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APPENDIX

Table A1: Descriptive Statistics

Variable	No. of Observation	Mean	Standard Deviation	Min	Max
lexp	3868	20.57657	2.56837	8.294049	25.71502
lmass	3845	53.40233	2.826829	45.48612	59.83483
ldist	3868	7.855311	0.948918	4.710371	9.353102
contig	3868	0.059979	0.237479	0	1
comlang_off	3868	0.167011	0.373034	0	1
colony	3868	0.094881	0.293089	0	1
wto	3868	0.679679	0.46666	0	1
pafta	3868	0.055843	0.229648	0	1
agadir	3868	0.017839	0.132382	0	1
aa	3868	0.219752	0.414132	0	1
bil_agr	3868	0.038004	0.191231	0	1

Table A2: Other Bilateral Agreements implemented in the region

In Force since	Egypt	Israel	Jordon	Morocco	Tunisia	Turkey	USA
Egypt						2007	
Israel						1997	1985
Jordon						2011	2001
Morocco						2006	2006
Tunisia						2005	
Turkey	2007	1997	2011	2006	2005		
USA		1985	2001	2006			

Source: Based on the WTO database

Table A3: The Agadir Agreement

In Force since	Egypt	Jordon	Morocco	Tunisia
Egypt		2007	2007	2007
Jordon	2007		2007	2007
Morocco	2007	2007		2007
Tunisia	2007	2007	2007	

Source: Based on the WTO database

Table A4: The Pan-Arab Free Trade Agreement

In Force since	Date
Algeria	2008
Egypt	1998
Jordon	1998
Morocco	1998
Tunisia	1998

Source: Based on the WTO database

Table A5: WTO membership

Member	Date	Member	Date
Algeria	observer government	Jordon	11 April 2000
Egypt	30 June 1995	Morocco	1 January 1995
France	1 January 1995	Netherlands	1 January 1995
Germany	1 January 1995	Tunisia	29 March 1995
Israel	21 April 1995	Turkey	26 March 1995
Italy	1 January 1995	United Kingdom	1 January 1995
Japan	1 January 1995	USA	1 January 1995

Source: Based on the WTO database

Table A6: The EU Association Agreements

In Force since	Algeria	Egypt	France	Germany	Israel	Italy	Jordon	Morocco	Netherlands	Tunisia	Turkey	United Kingdom
Algeria			2005	2005		2005			2005			2005
Egypt			2004	2004		2004			2004			2004
France	2005	2004			2000		2002	2000		1998	1996	
Germany	2005	2004			2000		2002	2000		1998	1996	
Israel			2000	2000		2000			2000			2000
Italy	2005	2004			2000		2002	2000		1998	1996	
Jordon			2002	2002		2002			2002			2002
Morocco			2000	2000		2000			2000			2000
Netherlands	2005	2004			2000		2002	2000		1998	1996	
Tunisia			1998	1998		1998			1998			1998
Turkey (CU not AA)			1996	1996		1996			1996			1996
United Kingdom	2005	2004			2000		2002	2000		1998	1996	

Source: Based on the WTO database

Robustness Tests: I. Sub-sample (1996 – 2010)

Table A7: Full Sample

Dependent Variable lexp	Fixed Effects	Random Effects	Hausman-Taylor Estimation
lmass	.632***	.691***	.630***
ldist	(omitted)	-.732***	-.555***
comlang_off	(omitted)	-.022	-.978***
pafta	.437***	.342***	.433 ***
agadir	.532***	.457***	.532***
aa	.005	-.042	.009
bil_agr	.452***	.403***	.457***
constant	-13.246***	-10.659***	-8.666***
Overall R-square	0.69	0.80	Sargan-Hansen Test
Hausman Chi-sq Test	64.14*** (FE)		P-value(Chi-sq) =0.5891

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

Table A8: SMCs Sample:

Dependent Variable lexp	Fixed Effects	Random Effects	Hausman-Taylor Estimation
lmass	.703***	.742***	.711***
ldist	(omitted)	-1.134***	-2.372**
contig	(omitted)	-1.326*	-1.714***
comlang_off	(omitted)	.727**	.270
pafta	.361***	.288***	.335***
agadir	.447***	.394***	.433***
aa	-.054	-.070	-.053
bil_agr	.428 ***	.414***	.436***
constant	-17.548***	-10.933***	-4.610
Overall R-square	0.47	0.67	Sargan-Hansen Test
Hausman Chi-sp Test	70.62*** (FE)		P-value(Chi-sq) = 0.0159

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

Table A9: EU Sample:

Dependent Variable lexp	Fixed Effects	Random Effects	Hausman-Taylor Estimation
lmass	.577 ***	.583***	.577***
ldist	(omitted)	-.315*	-.239
comlang_off	(omitted)	.765*	-2.677
aa	.050*	.046 *	.050*
constant	-9.858***	-7.751***	-7.795***
Overall R-square	0.79	0.83	Sargan-Hansen Test
Hausman Chi-sq Test	0.51 (RE)		P-value (Chi-sq)= 0.000

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

Table A10: SM country-specific sample:

Reporter	PAFTA			AGADIR		
	FE	RE	HT	FE	RE	HT
Algeria	.279	.258	.321	N/A	N/A	N/A
Egypt	.533 **	.575**	.523*	1.046***	1.097781***	1.041994***
Israel	N/A	N/A	N/A	N/A	N/A	N/A
Jordan	.099	.012	-.014	.369*	.3506357*	.3236679
Morocco	.443***	.154	.433***	.297*	.1198855	.2891344*
Tunisia	.037	.016	.032	-.077	-.0755819	-.0660408
Turkey	N/A	N/A	N/A	N/A	N/A	N/A

Reporter	AA			BIL_AGR		
	FE	RE	HT	FE	RE	HT
Algeria	-.218	-.243	-.204	N/A	N/A	N/A
Egypt	.259	.297 *	.260	.259	.397	.321
Israel	-.052	-.057	-.040	-.085	-.085	-.201
Jordan	-.451 ***	-.474***	-.496***	2.719 ***	2.726***	2.706***
Morocco	.109	.071	.111	.280	.070	.257
Tunisia	-.122	-.086	-.077	-.314	-.304	-.297
Turkey	(omitted)	.231	.226	.315***	.315***	.312***

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

Robustness Tests: II. ARDL Fixed Effects Specification

Table A11: Full Sample

Dependent Variable lexp	Model 1991 – 2012	Sub-sample 1996 – 2010
lmass	.753***	.758***
ldist	(omitted)	(omitted)
comlang_off	(omitted)	(omitted)
pafta	.279***	.287***
agadir	.225***	.285***
aa	.028	.033
bil_agr	.208***	.183***
constant	-4.869***	-4.994***
Overall R-square	0.95	0.94

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

Table A12: SMCs Sample:

Dependent Variable lexp	Model 1991 – 2012	Sub-sample 1996 – 2010
lmass	.835***	.821***
ldist	(omitted)	(omitted)
contig	(omitted)	(omitted)
comlang_off	(omitted)	(omitted)
pafta	.239***	.239***
agadir	.190***	.246***
aa	.010	.005
bil_agr	.170**	.1465*
constant	-7.351***	-8.611***
Overall R-square	0.89	0.86

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

Table A13: EU Sample

Dependent Variable lexp	Model 1991 – 2012	Sub-sample 1996 – 2010
lmass	.666***	.678***
ldist	(omitted)	(omitted)
comlang_off	(omitted)	(omitted)
aa	.038*	.053***
constant	-2.925***	-1.913**
Overall R-square	0.97	0.97

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

Table A14: SM Country-specific Samples

Reporter	Model 1991 – 2012			
	PAFTA	AGADIR	AA	BIL_AGR
Algeria	.1952255	N/A	-.163547	N/A
Egypt	.4493641***	.3028624*	.1124373	.2337547
Israel	N/A	N/A	-.0650882	-.1188911
Jordan	-.0889571	.3608161***	(omitted)	.7040752***
Morocco	.1911707	-.0147062	-.1203349	.1006295
Tunisia	-.0831038	-.1167351	-.1366495	-.2696758
Turkey	N/A	N/A	(omitted)	(omitted)

Reporter	Sub-sample 1996 – 2010			
	PAFTA	AGADIR	AA	BIL_AGR
Algeria	.1869475	N/A	-.1304037	N/A
Egypt	.4665237**	.3704879*	.1307143	.2007136
Israel	N/A	N/A	-.0303421	-.1417163
Jordan	-.061748	.4116757***	(omitted)	(omitted)
Morocco	.1395266	.0518165	-.1028013	.0751228
Tunisia	-.1426527	-.0795114	-.2006777*	-.2387613
Turkey	N/A	N/A	(omitted)	.1592061***

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.