View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by Research Papers in Economics

ThE Papers 06/09

Departamento de Teoría e Historia Económica

Universidad de Granada

The Free Trade Agreement Morocco-EU: a simulation of the impact on EU exports

Jose V. Blanes & Juliette Milgram

Universidad Pablo de Olavide Universidad de Granada

The Free Trade Agreement Morocco-EU: a simulation of the impact on EU exports[♣]

José V. Blanes (Universidad Pablo de Olavide)[1]

Juliette Milgram Baleix (Universidad de Granada)[2]

ABSTRACT

We analyse the effect due of the next FTA between Morocco and the EU on bilateral Moroccan imports. As our main contribution to the existing literature, we include in our gravity equation tariff data at the industry level. This allows to better estimate trade determinants and also makes possible to perform simulations of the tariff dismantling taking into account its different path for each industry and year. A complete tariff dismantling will double the average yearly trade growth observed in the years just before the transition period to the FTA begun. The average effect follows the tariff reduction schedule being greater at the beginning and at the end of the transition period. The effect is positive for all EU Member States but exports growth to Morocco is greater for Portugal, Greece, Slovakia, Lithuania and Spain and lower for Germany, Denmark, Finland, France and Sweden. By industries, the faster growth are predicted for Leather and leather products, Wood and wood products, Textiles and textile products, Rubber and plastic products and Pulp, paper an paper products and publishing and printing. Finally, we also find a positive effect of Moroccan immigration in the EU on bilateral trade.

Keywords: liberalisation; EU; Morocco; Free Trade Area; Tariff; Immigration; Liberalisation; gravity equation.

JEL: F13, F14, F17, F22

[♣] This paper has benefited financial support from the Centro de Estudios Andaluces (Junta de Andalucia, Spain) within the context of the Research Project ECO12-2004.

[1] Departamento de Economía, M. Cuantitativos e Hª Económica Universidad Pablo de Olavide Ctra. de Utrera, Km.1 41013 Sevilla Spain e-mail: jvblacri@upo.es Phone: +34 954 34 98 52 Fax: +34 954 34 93 39

[2] Dpto. de Teoría e Historia Económica. Facultad de Ciencias Económicas y Empresariales. Universidad de Granada. Campus de Cartuja, s/n. 18.011. Granada (Spain). E-mail: jmilgram@ugr.es. Telf.: +34 958 24 61 92. Fax: +34 958 24 99 95

I. INTRODUCTION

In 2000, the EU and Morocco have started a Free Trade Area (FTA) to be in place in 2012. Until that date, European goods entering the Moroccan market were charged the same duties as other OMC member. The agreement implies the progressive dismantling of these barriers for industrial goods. Hence, average tariffs will be progressively downward from 25,8% in 2000 to 5,2% in 2012.

Some works measure the impact of this FTA on Moroccan welfare but there is none that analyses how EU exports to Morocco could be affected and this study is an attempt to fill this gap. Though it is highly probable that this effect will be of great relevance for Morocco due to the magnitude of the agreed tariff dismantling.

The aim of this paper is to evaluate the impact of the EU-Morocco FTA on EU Member States' exports to Morocco. We use a gravity equation to estimate the Moroccan demand for imports. Our main contribution to the previous literature is to include in the specification disaggregated tariff data. Moreover, this allows us to simulate the impact of the trade liberalization and to forecast future trade flows. We also evaluate the effect of Moroccan immigration in the EU on bilateral trade flows between both economies. There is a recently and growing literature arguing that immigrants have a positive effect on the bilateral trade between immigrants' host and home countries.

The structure of the paper is as follows. The next section describes the main characteristics of the EU-Morocco trade flows and the Moroccan trade liberalization. Section 3 presents the empirical model and the methodology used to estimate and simulate trade flows. Section 4 presents the econometric and simulations results as well as the sensibility analysis. Finally, section 5 summarises the main conclusions.

II. Trade flows and trade liberalization between Morocco and the EU

The Association Agreement between the EU and Morocco signed in 1995 entered into force in March 2000. It has relevant economic implications. Even not the only aspect, free movement of goods is the more relevant. The agreement signed implies the progressive statement of a FTA for industrial goods that will be completed in 2012[3].

In the framework of the common external trade policy, Morocco has traditionally enjoyed better conditions than many others extra-EU partners thanks to a preferential agreement. Since 1976, Moroccan industrial goods were granted duty free access to the EU market and 20% of its agricultural goods also benefited from a preferential treatment. However, most of Moroccan agricultural exports to the EU are limited by non-tariff barriers as reference prices, seasonal restrictions and quotas. Until the Association Agreement, this preferential treatment was not reciprocal. European goods only enjoyed the Most Favoured Nation Clause (MFNC). From then, Morocco has agreed to progressively dismantling tariffs on industrial goods imported from the EU and to offer a preferential treatment to agricultural products. Hence, the FTA between Morocco and the EU supposes for the former a unilateral and relevant trade liberalization. The average tariff will be downward from a 25,8% to a 5,2% at the end of the transitional period.

[TABLE 1]

According to the agreement signed, in 2012, 50% of total Moroccan imports will be completely free of tariff barriers. In fact, most industrial goods imported from Morocco came from the EU while agricultural goods – that will not be affected – came mostly from the rest of the world. Considering that industrial and geographical import structure, and without considering yet any trade diversion, most Moroccan imports coming from the EU will be affected by this agreement (Milgram, 2001).

Moroccan trade policy has been a mixture of progressive liberalization of imports, export promotion of industrial goods and strong protection of basic agricultural products. During the last years, an effort of transparency has been undertaken. Quotas

[3] Negotiations about agricultural goods were delayed.

on agricultural goods have been reversed on tariffs and all tariffs have been consolidated in the context of GATT. At the same time, simplification of the tariff system has resulted in a relevant reduction of the number of tariffs.

With respect to manufactures, the standard deviation of tariffs was considerably reduced during the eighties. However, many differences subsist depending among goods and sectors. Consumer goods are the most levied in order to protect national producers competing with imports. This kind of goods will be liberalisated slowly, trying to delay until the end of the transitional period the impact on national producers. Table 1 shows that the sectors with the highest tariffs in 2000 are Textiles and their products, Leather and their products, Wood and their products, Pulp, paper and their products, publishing and printing, Rubber and plastic products, Other non-metallic mineral products and Basic metals and fabricated metal products. However, we haven't taken into account discounts granted to imports on intermediate goods for Moroccan firms that export most of its production. Those measures, implemented by the end of the eighties in order to promote manufactured goods exports, specially benefit imported textile goods subject to outward-processing and machinery imports.

This trade policy may explain the relevance of EU textile goods exports to Morocco (24 % of total exports). The main exporters are France (39.9%), Spain (16.6%), Italy (10.4%) and Germany (9.8%); Members States that also are, with the only exception of the last, the main promoters of outward-processing for textile products (Table 2). Exports of Electrical and optical equipment are also relevant (25.6%) and represent more than 50% of total exports to Morocco for countries as Sweden, Finland, Hungary and Denmark. It is also the main export sector to Morocco for Finland and France, very close to Textiles for the last. After Textiles and Electrical and optical equipment, the next manufacture sector in exports to Morocco are Basic metals and fabricated metal products (11.1%), Transport equipment (8.2%), Machinery (7.9%) and Chemical products (6.9%).

Concluding, the EU exports to Morocco concentrate in few products and 75% of them come from only 4 Member States. Moreover, while countries as Sweden, Finland, Hungary and even a large country as UK concentrate most of its exports on one or two sector, other countries like Portugal, Belgium, Spain and Italy present a more diversified export structure[4].

[4] Nonetheless, all those countries, with the exception of Portugal, concentrates at least 20% of their exports to Morocco in one sector.

[TABLE 2]

III. The empirical model

III.1 The gravity model and tariffs

Our empirical model is an augmented gravity equation for trade. The basic gravity equation for trade relates positively the volume of trade flow to the mass of the two partner countries and negatively to the trade costs between them. The early works of Linnemann (1966) and Leamer y Stern (1970) demonstrate that the gravity equation for trade is a convenient empirical model to explain trade flows. Later, Anderson (1979) and Bergstrand (1985 and 1989) established theoretical foundations for the gravity equation for trade. Baier and Bergstrand (2001) developed a more general gravity model that allows tariff barriers to be non-zero.

More recently, empirical applications directly derived from theory, as Helpman (1987), Hummels and Levinshon (1995), Fontagné, Freudenberg and Péridy (1998) and Evenett and Keller (1998), concluded that and eclectic vision of trade determinants, which include both the Hecksher-Ohlin and the increasing returns trade models, best matches the gravity equation of trade and theoretical models.

In this work, we quantify the effect of trade policy on bilateral imports. This is an innovating application of the gravity equation for methodological issues. A first wave of works addressed the effect of regional trade agreements on trade flows by including dummy variables into the gravity equation – as Frankel and Wei (1993), Bayoumi and Eichengreen (1995), Sapir (1997) and Rose (2004). However, if models are not correctly specificated, parameters on the sensibility of trade flows to trade policy can be overestimated when dummy variables are used. More recently, more accurate proxies for trade barriers have been included into gravity equations, opening a new and promising field of research. Some authors introduced exogenous qualitative discrete variables trying to capture the degree of trade policy protection – as Castilho (1999), Wall (1999) and Fouquin and Gaulier (2000). Finally, other works have included into the specifications tariffs and non-trade barriers, most at country level– as Harrigan (1993), Fontagné and Péridy (1995), Haveman et al. (1999), Hummels (1999), Castilho (1999), Baier and Bergstrand (2001), Milgram (2005) and Péridy (2005).

III.2 Immigration and international trade

Recently, many works have found empirical evidence on a positive link between immigration and bilateral trade between immigrants host and home country. For example, Gould (1994) and Dunlevy and Hutchinson (1999) for the USA, Head and Ries (1998) and Wagner et al. (2002) for Canada, Girma and Yu (2002) for the UK, Rauch and Trindade (2002) for a set of countries with Chinese immigrants and Blanes (2005, 2006) and Blanes and Martin-Montaner (2006) for Spain. This link appears robust to many samples, specification and estimation methods.

Immigration can influence trade flows through two basic channels. First, immigrants bring with them a preference for home-country products. That can contribute to increase imports demand from the host-country. Second, immigration can reduce trading transaction costs. According to Wagner *et al.* (2002), we call the first channel the preference hypothesis and the second one the information hypothesis. This second channel is twofold. In one hand, immigration can create ethnic networks – knowledge of home-country markets and business contacts (Rauch, 1999). Immigrants can have an advantage in dealing with their countrymen who remain at the home country due to issues of trust or of mutually understood culture. Rauch and Trindade (2002) showed that Chinese immigrants help to match buyers and sellers and deter violations of contracts by providing community enforcement of sanctions. In the other hand, cultural ties, as common language, historical colonial ties, common preferences, knowledge of political and social institutions, can reduce trading transaction costs. When those characteristics are not well known, immigrants can contribute to increase mutual knowledge, facilitating trade flows. Moreover, immigrants can reduce trade transaction costs by their knowledge about the products and their characteristics produced in both countries.

The existing literature suggests that the relevance of these two channels would be different for different types of trade flows and immigrant individual and national characteristics. Those differences help in identifying the mechanisms explaining the link between immigration and trade.

Finally, Dunlevy and Hutchinson (1999) pointed out a trade-substitution immigration effect. Immigrants can apply their knowledge about technology or production methods and about immigrants' tastes to host-country production or

transmit them to local producers in a way that previously imported goods could be substituted by local production. However, this is a negative effect on imports that is not to be considered in our work since we analyse only exports flows.

Most of the literature on immigration and trade uses a gravity equation of trade. To the basic specification, they add a variable that measures the number on immigrants living in the analysed country and other control variables. If we take into account that Morocco is a relevant source of immigrants in many EU Member States, we can forecast a positive effect of such immigration on the bilateral trade between Morocco and the EU.

III.3 Estimation methodology

The gravity equation for trade stands as:

$$TV_{ij} = Y_i^{\alpha_1} Y_j^{\alpha_2} TB_{ij}^{\alpha_3} \quad (1)$$

Where *TV* represents the volume of the trade flow, *Y* the size of the country, *TB* the trade barriers and *i* and *j* the partner countries. This equation is usually expressed in logarithms so it can be estimated but Ordinary Least Squares (OLS).

A handful of variables approaching country size and trade barriers are used depending on each case and on data availability. The GDP is the most used proxy to country size although country population is also often used as a measure of country purchasing power. Trade barriers are more difficult to proxy. The reason is that there are many factors that can promote or difficult trade flows and frequently there is also a lack of appropriate data to measure such factors. Many papers proxy transaction costs simply by means of the geographical distance between both countries. However, it is more usual to include simultaneously into the specification to be estimate a set of variables. For example, many papers include a dummy variable for countries sharing a frontier. Recently, some papers include dummy variables that proxy the existence of historical o cultural ties between countries, such as a colonial past o the use of a common language. More recently, even, a few papers include a variable that measures immigrant population or some of its characteristics such as skills, education or length of living in the host-country. Trade and non-trade barriers are difficult to include into the model

because they are not easily available or even they are not available at all. Most papers make use of dummy variables, as the fact of two countries of being members of the same economic integration process, o qualitative discrete variables. A scarce number of papers, including this work, include tariff data at a disaggregated level.

In this work we analyse the Moroccan imports (*M*) demand from 17 EU members[5] (*i*) disaggregated for 15 industries according to the NACEa31 nomenclature and 4 years (t). The period analyses is 1999 to 2002 in order to cover a longer period that includes 1999, one before the beginning of the dismantling. We estimate the following empirical model in logarithms by OLS for several specifications explained in the next sections:

$$\begin{aligned} \ln M_{irt}^{MOR} &= \alpha_0 + \alpha_1 \ln VA_{irt} + \alpha_2 GDP_t^{MOR} + \alpha_3 \ln dist_i + \alpha_4 IMM_{it}^{MOR} \\ &+ \alpha_5 \ln(1 + tariff_{rt}^{MOR}) + \sum_{r=1}^{15} \beta_r D_r + \sum_{i=1}^{19} \beta_i D_i + \sum_{t=1999}^{2002} \beta_t D_t + \varepsilon_{irt} \end{aligned} \tag{2}$$

where *VA* is the Value Added in constant prices of each exporter at the industry level as a proxy of supply, *GDP* is the Moroccan Gross Domestic Product in constant prices is introduced to control for Moroccan demand, *dist* is the geographical distance, *IMM* is the number of Moroccan immigrants in each EU Estate Member and *tariff* is the Moroccan tariff on each industry.

Industry trade data for each EU member are from the CHELEM-CEPII database. Figures are expressed in real terms using Moroccan import price indexes from the World Development Indicators (World Bank). The Value Added is taken from Eurostat. The distance between each Member Estate of the EU and Morocco, measured as the distance between capital cities comes from the CEPII database. Immigration data are from de Population Census 2001 (Eurostat) and correspond to the EU 15[6]. Moroccan tariffs applied to EU imports are taken from TRAINS (UNCTAD) for the year 2001 at the HS6[7] level of disaggregation and we have aggregated them for each industry considered. Tariffs for the rest of the transitional period to the FTA, have been

[5] Due to data availability we really consider EU Estate Members exports to Morocco. The EU countries considered are Austria, Belgium-Luxemburg, Check Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Lithuania, Netherlands, Portugal, Slovakia, Spain, Sweden and United Kingdom.
[6] We extrapolate 2001 data to the whole sample period.
[7] Harmonised System at 6 digits level of aggregation.

computed according to the dismantling schedule agreed between Morocco and the EU, being the year 2001 the second year of the transition period.

Usually, dummy variables for industry effects are included into exports equations as an – imperfect- proxy to the industry exports supply when data on industry output is not available. Since our specification includes industry output for each industry in each EU country,, we expect these dummy variables to capture other additional specific effects either of the Moroccan demand or of the EU supply. Given that EU exports to Morocco are concentrated at the industry level, in some specifications we have only included dummy variables for industries with a clear differentiated behaviour, as Textiles and Electric equipment. We have also included dummy variables for each EU Estate Member, dropping the distance variable to avoid collinearity. More over, we have included a dummy variable that is equal to one for those countries whose official or co official language is French and zero otherwise (*comlang-off*). Sharing a common language usually appears to promote bilateral trade relations. It also allows us to check the robustness of the positive effect of immigration on trade flows. We can thus identify if immigrants brings with them additional knowledge about their host and home countries institutions that reduces trade transaction costs or if this positive effect is due only to the fact of sharing the same language or having a common colonial past resulting in similar institutions in both countries, facts that are independent of the presence of immigrants[8]. Last, as we have a pool of data, we include a yearly dummy variable to control for any other time specific effect.

IV. Econometric results

IV.1. Determinants of EU exports to Morocco

We have estimated 12 specifications of equation (2) numbered as 1 to 12 for the 1999-2002 period including immigration data (Table 3A) and without them (Table 3B) because this variable is available only for the former 15 members of the EU. Models are

[8] Another variable we have considered to include in the model is a dummy capturing historical o colonial ties between Morocco and EU Estate Members. However, this variable and the language variable have a high correlation coefficient and hence both may be capturing the same effects.

estimated by OLS[9]. According to the coefficient of determination, which ranges between 0.73 and 0.84, the model adjusts quite well on all specifications.

Regarding to the variables usually included in the basic gravity equation, we first observe that the EU Member States industry output have in all specifications the expected positive effect on exports. The Moroccan demand size, proxy by its GDP, appears to be not significant. However, when we include instead the value added by industry, supposed to be substitute a imports, results show a positive and significant effect. This surprising result probably reflects the fact that there must be a structural imports flow in Morocco complementary of the domestic production in a way that this flow is not negatively affected by the domestic output growth (as in Machinery and Textiles) but on the opposite is stimulated by the mean of inputs and equipment goods imports for instance.

Transport costs, measured by distance between countries, appear to be significant barriers for trade between the EU and Morocco. In all the specifications, distance presents a significant and negative coefficient greater than one, the figure usually obtained for bilateral trade flows. Hence, countries like Spain have a clear advantage of localization with respect to other EU members since it is geographically closer to Morocco than the later.

Turning now to the main concern of this paper, , Moroccan tariffs (at the industry level) have a relevant negative effect on EU imports. This result is robust since it stands for 19 out of 24 different specifications[10]. According to our results, the average coefficient for the 10 estimated specifications without the immigration variable for the 1992-2002 period is -3.39899. The average tariff on manufactures was in 2000 a 30.84%. A complete dismantling of tariffs will increase Moroccan imports from the EU by a $2.4934 - (1+0.3084)^{3.39899}$, that is to say, an increase of 149%. So, we can expect that the next progressive dismantling of Moroccan tariffs on EU imports down to zero in many industries is going to cause a relevant increase of EU exports to Morocco.

[TABLE 3A and 3B]

[9] We have also use panel data estimators. Results are similar to the ones from OLS estimator regarding to the sensibility of exports to tariffs. However, the coefficients of determination from panel data estimators are lower than from OLS but don't differ substantially. Panel data estimations are not presented to save space but are available from the authors upon request.

[10] The only exceptions are specifications 8, 11 and 12 and 7b and 8b when the immigration variable is included or not, respectively. These results can be explained by the presence of industry dummies that capture all differences among industries, as different figures for tariffs. Thus, when we also include country fixed effects the coefficient for the tariff variable is again significant and negative.

Regarding the impact of Moroccan immigration, we find in all specifications a positive effect on EU exports to Morocco except when country dummies are included– specification 9 to 12. The variable *comlang_off*, which has a positive effect on EU exports, slightly reduces the coefficient of the immigration variables but does not eliminate its positive effect. That is to say, the variable that measures the presence of Moroccan immigration in the EU Members States enhances trade even when variables as common language or a colonial past with some EU countries are controlled for. Hence, immigrant population promotes EU exports to Morocco and thus can help EU firms in entering the Moroccan market. This result is even more relevant if we consider recent research, as Péridy (2006), that estimates that there is still a significant migration potential from Maghreb countries towards Southern European Countries. As explained in the previous section, apart from the preference effect – that only affects imports from the immigrants' home country – immigration reduces trade transaction costs by means of immigrants' knowledge about products and economic and social institutions as well as by their capability to settle ethnic networks between the EU Estate Members and Morocco. However, to identify the mechanisms behind the link between immigration and trade is beyond the scope and the data availability of this paper.

IV.2. Simulations of the tariff dismantling

Departing from the estimated coefficients, it is possible to perform a simulation of the impact of the tariff dismantling on Moroccan imports from the EU either for each country or industry. This allows us to complete the analysis of the previous section by a deeper study of the tariff dismantling as agreed by the EU and Morocco. We have estimated the model for a period of four years to guarantee more robust results than those obtained from a cross section analysis. The resulting coefficients reflect the average sensibility of exports to each explanatory variable. However, we have to take into account that this dismantling begun in 2000 and this must be the reference year. Also, the tariff dismantling is going to last until 2012, it does not affect equally all industries and it is not equally distributed along the transitional period.

Equation (2) can be expressed as

$$\ln(M_{irt}^{MOR}) = b * OTHERS_{irt} + \alpha_5 \ln(1 + tariff_{rt}^{MOR}) + \varepsilon_{irt} \qquad (3)$$

were OTHERS refers to the explanatory variables matrix, with the exception of the tariff variable. This matrix includes different sets of variables depending on the specification considered (1b to 12b) [11].

First, we estimate the potential volume of Morocco's imports from the EU, that is the one predicted by the estimated model (without the error term):

$$M\_predict_{irt}^{MOR} = \exp(b * OTHERS_{irt} + \alpha_5 \ln(1 + tariff_{rt}^{MOR})) \qquad (4)$$

With no tariff, the volume of imports would be the one predicted by the other variables into the model (tariff takes a value equal to zero). Using the coefficients from the estimation of the equation (3), we can predict the volume of imports in case of a total liberalization (tariff equal to zero). For each EU country *i* and industry *r*:

$$M\_libtotal_{ir}^{MOR} = \exp(b * OTHERS_{ir2000} + \alpha_5 \ln(1+0)) = \exp(b * OTHERS_{ir2000}) =$$
$$= \frac{M\_predict_{ir2000}^{MOR}}{\exp(\alpha_5 \ln(1 + tariff_{r2000}^{MOR}))} = M\_predict_{ir2000}^{MOR} * (1 + tariff_{r2000}^{MOR})^{-\alpha_5} \qquad (5)$$

Though, the liberalization agreed will not be total what means that the final tariff – t_{2012} –will not be settle at zero in all production sectors. We have computed the tariff for each industry *r* and year *t'* along the period 2002-2012, as described by the Association Agreement. This allows us to simulate the real dismantling. The volume of Moroccan imports from the EU will be the one predicted by the rest of explanatory variables in the model at the started year of the transitional period ($OTHERS_{ir2000}$) and the computed tariff for the year *t'* ($tariff_{rt'}$). So, the simulate imports for the year *t'* can be obtained as follows:

$$M\_lib_{irt'}^{MOR} = \exp(b * OTHERS_{ir2000} + \alpha_5 \ln(1 + tariff_{rt'}^{MOR})) =$$
$$= \frac{M\_predict_{ir2000}^{MOR} * \exp(\alpha_5 \ln(1 + tariff_{rt'}^{MOR}))}{\exp(\alpha_5 \ln(1 + tariff_{r2000}^{MOR}))} = \qquad (6)$$
$$= M\_predict_{ir2000}^{MOR} * \left(\frac{(1 + tariff_{r2000}^{MOR})}{(1 + tariff_{rt'}^{MOR})} \right)^{-\alpha_5}$$

IV.3. Sensibility analysis

[11] In order to the simulations to include information about the maximum number of EU Members, we have use results from the specifications that do not include the immigration variable:
$b * OTHERS_{irt} = \alpha_0 + \alpha_1 \ln VA_{irt} + \alpha_2 GDP_t^{MOR} + \alpha_3 \ln dist_i + \alpha_5 \ln(1 + tariff_{rt}^{MOR}) + \sum_{r=1}^{15} \beta_r D_r + \sum_{i=1}^{19} \beta_i D_i + \sum_{t=1999}^{2002} \beta_t D_t$

The simulations have to be performed on the basis of one of the specifications presented above. In order to obtain robust simulations, we have to test for the sensibility of estimated results to the different specifications we have estimated. Results for this sensibility analysis are presented in Tables 4, 5 and 6 for the whole EU, by countries and by industries, respectively. Tables show the average and the standard deviations of two indicators: percentage of the actual imports in year 2000 explained by the model omitting the error term ($M\_predict_{EU,total,2000}/M\_{}_{EU,total,2000}$), and the predicted increase – in percentage- of imports in the case of a total trade liberalization (($M\_libtotal_{EU,total}$ - 1)/$M\_predict_{EU,total,2000}$). The number of observations – 10 - corresponds to the number of specifications considered as we have excluded from this sensibility analysis specifications 7b and 8b for the reasons explained before.

For the whole of EU exports to Morocco, the model explains a 95% of them, as average of all specifications. This percentage varies between 73 and 118% among specifications. A total liberalization of Moroccan imports from the EU will increase them in a 117%, *ceteris paribus*. Considering that the transitional dismantling period will last for 12 years, the average yearly effect will be of 9.77%. Just before the liberalization process beginning (1996 to 2000), EU exports to Morocco were quite dynamic with an annual average growth rate of 8.2%[12]. Our estimations conclude that if this tendency – not due to trade liberalization – will continue, the annual average increase of EU exports to Morocco during the transitional period will rise from 8.2% to 18%.

[TABLE 4]

However, some considerations should be add to this result. First, as said before, the tariff dismantling is not going to be total for all sectors. Second, it is not equally distributed along the transitional period and the big impact should be delayed until the end of the period. This is why we have o perform the simulation exercise in the next section.

The results by EU Member States for the sensibility analysis are presented in Table 5. In 14 out of 17 countries, the average of the real volume of imports in year 2000 explained by the model is superior to 50% and the standard deviation is below 50. By country, the model overestimates the exports to Morocco of Austria, Germany and Portugal and underestimates exports from Sweden, Greece and Finland. The effect of

[12] We have to notice that this increase of Moroccan imports has been conditioned by the strong appreciation of the Dirham along this period.

Morocco setting tariffs to zero will affect positively exports from each EU Member State. However, this effect will be of a different magnitude. Hence, Lithuania, Greece and Portugal and Finland and Germany are the countries that will increase their exports the greater and the lesser, respectively. Spain is the forth country in a decreasing ranking, and its exports to Morocco will increase a 131% for the whole transitional period.

[TABLE 5]

Finally, results by industry are presented in Table 6. In this case, the variance of the results obtained by the different specifications is greater than by country or by the whole EU and industries. However, the estimated trade flows are closer to the real ones than in the by country case. Comparing the different industries, the average of the share of real imports explained by the model varies between 30.8% (Textiles) and 237.9% (Other non-metallic minerals products) and the average for all industries is of 123.3%. The standard deviation remains bellow 30. These results indicate that additional variables should be included to better forecast Morocan imports by industries. For example, the poor results obtained for the Textiles industry may be explained by the fact that Morocco applies relevant tariff reduction for those products when they enter the country for outward-processing.

[TABLE 6]

IV.4. Analysis of the tariff dismantling

As explained before, results obtained in our estimation analysis correspond to hypothetical total trade liberalization. It is most closer to the real liberalization process recently started by Morocco and the EU to take into account that the tariff dismantling is not going to be total for all sector and will be gradual during the established transitional period.

To perform this simulation, we first have chosen one of the estimated specifications, considering the previous sensibility analysis. We discard specifications 7b and 8b because the resulting coefficient for the tariff variable was not significant. In specifications 11b and 12b, even the parameter for tariff is significant, the level of significance is sensibly lower than obtained in other specifications. Among the rest of specifications, we chose the 4b because it presents the closest parameter (-3.395) to the

average (-3.39899). The results for the simulation exercise are presented in Tables 7, 8 and 9.

[TABLE 7]

The annual average impact for all industries and countries exports to Morocco due to the FTA follows the path of the tariff dismantling. So, it is bigger at the beginning and at the last year of the transitional period. We predict an 8.2% average annual increase in EU exports to Morocco for the 2000-2012 period. It is similar to the exports growth observed during the period 1996-2000. Hence, our results show that the FTA wills double the rate growth of the Moroccan imports from the EU.

[TABLE 8]

Regarding the impact of tariff dismantling by industry (Table 8), Leather and leather products, Wood and wood products, Textiles and textiles products, Rubber and plastic products and Pulp, paper and paper products and publishing and printing are the ones that will achieve a higher exports' increase. However, it should not be forget that even if imports duties on Textiles industry are high, most intermediate goods as textile fabrics can be imported into Morocco free of tariffs. Unfortunately, data needed to evaluate this different tariff treatment are not available. Hence, only finished textiles products imports are charged by high tariffs what may explain why our model overestimate the trade creation of the FTA in this industry.

Comparing with the observed trade rate growth during the first two years of the beginning of the FTA, the industries that present the higher increases are the same than predicted by our model. This confirms the strong exports growth potential as emphasized in the previous section, since the actual level of EU exports to Morocco is low, compared with the predicted by the explanatory variables included in our econometrical analysis.

[TABLE 9]

By countries, our simulation predicts a faster export growth than the EU average for Portugal, Greece, Slovakia, Lithuania, Spain, Italy, Belgium and Austria and slower for Hungary, Germany, Denmark, Finland, France and Sweden, UK and Netherlands. The Czech Republic is at the EU average. Compared with the observed trade growth during the period 1996-2001, some differences arise. The most remarkable one is that during the years before the FTA transitional period beginning and in the first two years, three out of the four new EU Estate Members – Lithuania, Slovakia and Hungary - in our sample as well as some Scandinavian countries as Denmark and Sweden were the ones

that presented higher trade growth figures. Those countries were the ones with started from lower shares on total EU exports to Morocco. Moreover, as seen in Table 2, those countries do not concentrate their exports on the sector that will be more dynamics during the transition period. So, its seems that, after a period of convergence of the countries with the small trade relations with Morocco, trade growth rate will set at a structural level. Nonetheless, this predicted exports growth rate, although clearly lower than in the years before, will continue to stay among the EU Estate Members highest ones in the case of Slovakia and Lithuania but not for Hungary, Sweden and Denmark.

V. Concluding remarks

In this paper, we have analysed the determinants of EU countries' exports to Morocco at and industry level using data for the period 1999-2002. We focus on the impact of Moroccan tariffs on its exports in order to evaluate how the FTA between Morocco and the EU can affect Moroccan imports from the EU. We also focus on the effect of Moroccan immigration into the EU on European exports to Morocco.

Concerning tariffs, they have, as expected, a negative effect on trade. This result is robust to different specifications. The estimated impact is also relevant. A total tariff dismantling will increase Moroccan imports from the EU at an annual average rate of 8.25%. This will double, *ceteris paribus,* the growth rate reached by EU exports in last years, before the agreement entered into force.

Regarding to Moroccan immigration in the EU, our results show that it contributes to increase EU exports to Morocco. This result is robust to different specification not including country fixed effects. Moreover, this positive effect on exports prevails when a variable capturing cultural and historical links – common language – is included into the model. So, immigrants help in reducing trade transaction costs well by the creation of ethnic networks or by the bigger amount of information they pose about Moroccan and EU institutions and products than, respectively, EU and Moroccan natives residents in their home countries.

Departing from the estimation of EU member States exports to Morocco, and after performing a sensibility analysis to different specifications, we perform a simulation exercise for the effect of the Moroccan tariff dismantling on its imports from the EU both by industries and by Member States.

The effect will be positive for the whole EU. It will be greater for Portugal, Greece, Slovakia, Lithuania and Spain. By industries, trade will grow faster for Leather and their products, Wood and their products, Textiles and textile products, Rubber and plastic products and Pulp, paper and paper products and publishing and printing.

Including tariff data at the industry level in a gravity model remarkably improves the fit of estimations and forecasts of trade flows. This is due to the fact that dummy variables usually included in other papers capture simultaneously other characteristics different from prices that affect trade flows. The model usually fit well with the data except for some countries and sectors. FDI or better measures for transport costs, competition with other emergent countries are variables that could be also taken into account in order to improve the results. With respect to immigration, the availability of a database that identifies some individual immigrants characteristics, as educational level, skills or length of stay, will allow to analyse the mechanisms behind the positive link between immigration and trade.

Table 1: Moroccan tariffs on EU imports during the transition period (%)

Moroccan Tariff	**2000**	**2001**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**
Leather and leather products	42.74	42.61	42.48	33.88	25.41	16.94	8.47	0
Wood and wood products	41.65	41.32	41	32.54	24.41	16.27	8.14	0
Chemicals, chemical products and man-made fibres	22.23	18.34	14.45	8.45	6.34	4.23	2.11	0
Rubber and plastic products	39.52	39.14	38.76	30.76	23.14	15.52	7.9	0.28
Other non-metallic mineral products	34.53	31.23	27.94	19.72	14.79	9.86	4.93	0
Machinery and equipment n,e,c,	8.06	7.43	6.8	4.93	3.7	2.46	1.23	0
Manufacturing n,e,c,	32.84	22.54	12.25	1.57	1.17	0.78	0.39	0
Food products; beverages and tobacco	44.24	43.66	43.08	41.09	39.68	38.27	36.86	35.45
Textiles and textile products	39.16	38.55	37.94	29.87	22.4	14.93	7.47	0
Pulp, paper and paper products; publishing and printing	35.26	34.02	32.78	25.23	18.93	12.62	6.31	0
Basic metals and fabricated metal products	26.81	22.94	19.07	12.16	9.12	6.08	3.04	0
Transport equipment	17.92	14.5	11.07	6.12	4.59	3.06	1.53	0
Electrical and optical equipment	10.24	8.25	6.25	3.4	2.55	1.7	0.85	0

Source: Trains and Milgram (2001).

Table 2: EU exports to Morocco (2000) by Member Estate and Industry (% in total)

Country	Weight in total	Manufacturing n,e,c,	Leather and leather products	Wood and wood products	Chemicals, chemical products and man-made fibres	Rubber and plastic products	Other non-metallic mineral products	Machinery and equipment n,e,c,	Food products; beverages and tobacco	Textiles and textile products	Pulp, paper and paper products; publishing and printing	Basic metals and fabricated metal products	Transport equipment	Electrical and optical equipment	Total general
Austria	0.3%	0.6%	0.6%	0.2%	10.5%	4.8%	0.1%	9.8%	0.1%	38.6%	6.7%	10.8%	1.9%	15.3%	100 %
Belgium and Luxembourg	3.6%	2.3%	0.1%	0.3%	11.5%	10.1%	1.8%	6.0%	8.2%	25.2%	2.8%	17.3%	6.9%	7.4%	100 %
Czech Republic	0.2%	0.5%	1.4%	0.2%	0.4%	1.8%	4.9%	7.9%	2.4%	12.7%	16.1%	34.6%	12.8%	4.3%	100 %
Denmark	0.4%	0.1%	0.0%	2.1%	15.1%	0.6%	0.3%	5.4%	4.1%	4.1%	0.4%	8.4%	5.6%	53.8%	100 %
Finland	0.9%	0.0%	0.0%	0.1%	0.2%	0.1%	0.0%	7.6%	5.1%	0.2%	13.6%	1.8%	0.1%	71.3%	100 %
France	39.9%	1.8%	2.2%	0.7%	7.4%	2.8%	0.7%	6.3%	2.0%	19.1%	2.8%	12.2%	6.5%	35.5%	100 %
Germany	9.8%	2.2%	0.9%	0.2%	6.6%	6.3%	0.8%	10.1%	2.5%	17.9%	2.0%	8.2%	19.7%	22.6%	100 %
Greece	0.7%	0.1%	0.1%	0.0%	3.7%	1.6%	3.0%	9.9%	2.3%	16.2%	0.6%	7.3%	50.3%	4.7%	100 %
Hungary	0.1%	1.1%	2.1%	0.0%	11.3%	1.6%	0.4%	2.8%	0.7%	10.8%	0.0%	5.7%	1.1%	62.4%	100 %
Italy	10.4%	0.9%	4.2%	1.9%	4.2%	4.7%	2.1%	20.1%	1.7%	23.4%	1.8%	14.1%	6.2%	14.6%	100 %
Lithuania	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	36.2%	2.9%	14.5%	44.9%	0.0%	1.4%	100 %
Netherlands	3.4%	1.0%	0.4%	0.2%	11.3%	4.9%	0.1%	4.8%	24.4%	19.3%	1.5%	6.0%	10.6%	15.6%	100 %
Portugal	1.6%	4.0%	1.7%	0.9%	8.6%	14.6%	1.3%	6.6%	9.9%	14.9%	3.8%	16.3%	12.7%	4.5%	100 %
Slovakia	0.0%	1.0%	0.0%	0.0%	12.5%	1.3%	0.3%	20.9%	0.0%	8.7%	2.3%	49.5%	1.3%	2.3%	100 %
Spain	16.6%	1.7%	1.6%	2.6%	8.4%	6.7%	2.5%	6.4%	4.3%	28.2%	3.7%	14.2%	7.1%	12.6%	100 %
Sweden	3.3%	0.2%	0.0%	0.1%	0.2%	0.4%	0.1%	1.9%	0.3%	0.1%	10.1%	2.0%	8.0%	76.8%	100 %
United Kingdom	8.9%	1.1%	0.2%	0.2%	3.7%	2.1%	0.2%	6.1%	2.9%	61.5%	1.1%	2.8%	3.9%	14.3%	100 %
Total	100.0%	1.6%	1.7%	1.0%	6.9%	4.3%	1.1%	7.9%	3.6%	24.0%	2.9%	11.1%	8.2%	25.6%	100 %

Table 3A: Determinants of EU exports to Morocco (Pool 1999-2002)

	1	2	3	4	5	6	7	8	9	10	11	12
$\ln(VAB^{EU,Industry})$	0.843***	0.898***	0.892***	0.799***	0.996***	0.998***	0.778***	0.859***	0.963***	0.791***	0.964***	0.963***
	[0.043]	[0.045]	[0.045]	[0.048]	[0.046]	[0.053]	[0.044]	[0.049]	[0.058]	[0.073]	[0.097]	[0.097]
$\ln(VAB^{MOR,Industry})$				0.254***		0.153***		0.472		0.264***		0.467
				[0.049]		[0.046]		[0.567]		[0.057]		[0.555]
$\ln(PIB^{MOR})$			-1.500									
			[1.233]									
$\ln(distance^{EU})$	-1.549***	-1.576***	-1.574***	-1.587***	-1.522***	-1.560***	-1.560***	-1.582***	-1.679***	-1.588***	-1.703***	-1.699***
	[0.086]	[0.086]	[0.086]	[0.086]	[0.089]	[0.089]	[0.073]	[0.073]	[0.170]	[0.167]	[0.136]	[0.136]
$\ln(1+tariff^{EU,Industry})$	-4.355***	-4.147***	-4.328***	-4.979***	-4.613***	-4.917***	-1.879*	-1.576	-3.986***	-5.113***	-1.659	-1.562
	[0.476]	[0.477]	[0.498]	[0.471]	[0.523]	[0.518]	[0.980]	[0.971]	[0.487]	[0.516]	[1.091]	[1.094]
ln(nb of immigrants from $Morocco^{EU}$)	0.280***	0.216***	0.215***	0.250***	0.235***	0.184***	0.298***	0.229***	-0.227	-0.345	-0.008	-0.038
	[0.020]	[0.024]	[0.025]	[0.026]	[0.019]	[0.025]	[0.018]	[0.022]	[0.259]	[0.260]	[0.199]	[0.205]
comlang_off		0.869***	0.870***	0.790***		0.941***		0.838***		5.570***		2.981*
		[0.135]	[0.135]	[0.136]		[0.119]		[0.101]		[1.949]		[1.519]
Transport					0.239	0.272						
					[0.197]	[0.202]						
Textiles, leather and clothes					1.447***	1.433***						
					[0.161]	[0.156]						
Elec					0.690***	0.623***						
					[0.169]	[0.167]						
Constant	5.978***	5.768***	31.780	1.061	3.675***	0.630	5.146***	-6.341	8.110***	4.529**	5.276***	-5.360
	[0.872]	[0.873]	[21.350]	[1.331]	[0.930]	[1.302]	[0.760]	[13.156]	[2.025]	[2.202]	[1.775]	[12.727]
Country effect									X	X	X	X
Sector effect							X	X			X	X
Observations	741	741	741	741	741	741	741	741	741	741	741	741
R^2	0.73	0.74	0.74	0.75	0.77	0.78	0.82	0.83	0.75	0.76	0.84	0.84

OLS. Robust standard errors in brackets. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Table 3B: Determinants of EU exports to Morocco (Pool 1999-2002) Without immigrants.

	1b	2b	3b	4b	5b	6b	7b	8b	9b	10b	11b	12b
$\ln(VAB^{EU,Industry})$	1.272***	1.203***	1.202***	1.182***	1.374***	1.297***	1.352***	1.269***	0.970***	0.790***	0.909***	0.908***
	[0.034]	[0.032]	[0.032]	[0.032]	[0.034]	[0.033]	[0.033]	[0.031]	[0.056]	[0.071]	[0.097]	[0.097]
$\ln(VAB^{MOR,Industry})$				0.107**		0.035		0.502		0.269***		0.529
				[0.049]		[0.044]		[0.583]		[0.055]		[0.523]
$\ln(PIB^{MOR})$			-0.626									
			[1.230]									
$\ln(distance^{EU})$	-1.742***	-1.723***	-1.723***	-1.740***	-1.668***	-1.659***	-1.703***	-1.697***	-1.707***	-1.626***	-1.679***	-1.679***
	[0.093]	[0.090]	[0.090]	[0.091]	[0.094]	[0.092]	[0.081]	[0.078]	[0.167]	[0.164]	[0.133]	[0.132]
$\ln(1+tariff^{EU,Industry})$	-2.873***	-3.115***	-3.189***	-3.395***	-4.136***	-4.366***	-1.626	-1.526	-3.920***	-5.057***	-2.055**	-1.883*
	[0.507]	[0.480]	[0.503]	[0.483]	[0.563]	[0.532]	[1.142]	[1.049]	[0.460]	[0.493]	[0.946]	[0.960]
ln(nb of immigrants from $Morocco^{EU}$)												
comlang_off		1.659***	1.660***	1.679***		1.578***		1.614***		3.026***		2.805***
		[0.112]	[0.112]	[0.113]		[0.085]		[0.077]		[0.256]		[0.232]
transport					0.098	0.107						
					[0.225]	[0.221]						
Textiles, leather and clothes					1.824***	1.732***						
					[0.161]	[0.148]						
Elec					0.448**	0.441***						
	3.168***	3.890***	14.731	1.784	1.097	1.191	0.476	-10.189	6.775***	2.526	5.947***	-6.290
Constant	[0.952]	[0.910]	[21.296]	[1.403]	[0.960]	[1.322]	[0.853]	[13.520]	[1.356]	[1.641]	[1.346]	[12.206]
									X	X	X	X
Country effect							X	X			X	X
Sector effect	832	832	832	832	832	832	832	832	832	832	832	832
Observations	0.70	0.74	0.74	0.74	0.75	0.78	0.78	0.81	0.77	0.78	0.85	0.85
R^2	0.73	0.74	0.74	0.75	0.77	0.78	0.82	0.83	0.75	0.76	0.84	0.84

OLS. Robust standard errors in brackets. * Significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Impact of average dismantling for the different specifications (Total EU and industries).

Variable	Obs. (nº of models where tariffs variable is significant)	Mean	Std.Dev.	Min	Max
$M\_predict_{EU,total,2000}/M\_{EU,total,2000}$	10	95.56472	13.58766	73.50735 4	117.889
$(M\_libtotal_{EU,total} -1)/M\_predict_{EU,total,2000}$	10	117.2352	52.04721	50.26742	223.015
α_5	10	-3.39899	1.0002	-5.056646	-1.883055

Table 5: Impact of average dismantling for the different specifications by EU Member Estate (all industries).

	$M\_predict_{ME,total,2000}/M\__{ME,total,2000}$		$(M\_libtotal_{ME,total} -1)/ M\_predict_{ME,total,2000}$		
UE	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Freq.**
Austria	151.86	49.27	111.81	49.7	10
Belgium	104.42	40.73	122.25	53.6	10
Czech	89.79	12.73	119.34	53.25	10
Denmark	61.88	6.56	111.38	50.24	10
Finland	23.85	6.74	91.94	40.03	10
France	90.69	33.17	114.56	50.41	10
Germany	149.23	44.52	92.86	41.61	10
Greece	19.46	6.07	174.62	80.55	10
Hungary	100.9	34.21	106.94	47.61	10
Italy	97.27	29.55	126.48	58.44	10
Lithuania	53.57	13.36	190.46	87.61	10
Netherlands	57.38	33.35	125.27	55.34	10
Portugal	156.44	47.79	170.33	78.48	10
Slovakia	68.73	7.35	110.49	46.82	10
Spain	104.38	27.52	131.47	58.66	10
Sweden	16.77	2.06	100.61	44.06	10
UK	81.98	29.07	114.53	50.27	10
Total	84.03	50.68	124.43	61	170

Table 6: Impact of average dismantling for the different specifications by industry (Whole EU).

	Tariff	$M\_predict_{EU,Industry,2000}/M\_{EU,Industry,2000}$		$(M\_libtotal_{EU,Industry} - 1)/ M\_predict_{EU,Industry,2000}$		
NACE A31	***2000***	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Freq.**
Leather and leather products	42.74	42.72	23.61	254.7	126.15	10
Wood and wood products	41.65	81.09	26.95	244.69	119.93	10
Chemicals, chemical products and man-made fibres	22.23	149.21	26.44	101.45	40.42	10
Rubber and plastic products	39.52	63.86	30.14	225.96	108.5	10
Other non-metallic mineral products	34.53	237.94	95.29	185.03	84.48	10
Machinery and equipment n,e,c,	8.06	155.21	18.82	30.51	10.12	10
Manufactures N.E.C	32.84	130.28	39.31	172.15	77.22	10
Food products; beverages and tobacco	44.24	192.60	41.59	268.77	135.01	10
Textiles and textile products	39.16	30.86	23.59	222.82	106.6	10
Pulp, paper and paper products; publishing and printing	35.26	181.34	24.96	190.76	87.76	10
Basic metals and fabricated metal products	26.81	122.22	43.06	129.92	54.58	10
Transport equipment	17.92	140.72	12.81	77.25	29.2	10
Electrical and optical equipment	10.24	75.06	18.49	39.89	13.64	10
Total	30.14	123.32	70.03	164.92	114.27	130

Table 7: Average impact on the EU from the Moroccan dismantling (% Exports growth).

Model 4 (α_5 = -3.395292)	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**Annual growth rate (2000-2012)**
Change in exports (% with respect to 2000)		15.81	34.99	45.59	58.01	72.78	90.7	8.25
Tariff	30.14	25.39	18.96	14.9	10.85	6.8	2.75	
Annual growth rate (1996-2000)	8.2							

Table 8: Impact by industry from the Moroccan tariff dismantling (% exports growth).

NACE A31	Predict/Actual	2002	2004	2006	2008	2010	2012	Growth 2000-2012	Growth 1996-2001
Leather and leather products	20.9	0.63	24.33	55.21	96.8	154.03	234.78	21.34	5.48
Wood and wood products	85.27	1.57	25.3	55.37	95.47	150.06	226.12	20.56	14.84
Chemicals, chemical products and man-made fibres	167.68	25	50.08	60.45	71.77	84.14	97.69	8.88	6.64
Rubber and plastic products	52.07	1.87	24.63	52.82	89.84	139.34	206.91	18.81	5.21
Other non-metallic mineral products	289.84	18.58	48.58	71.38	98.92	132.48	173.73	15.79	8.01
Machinery and equipment n,e,c,	129.38	4.09	10.51	15.03	19.8	24.82	30.12	2.74	3.95
Manufacturing n,e,c,	136.34	77.13	148.76	152.04	155.38	158.78	162.23	14.75	9.76
Food products; beverages and tobacco	255.53	2.78	7.79	11.53	15.44	19.53	23.81	2.16	8.89
Textiles and textile products	13.19	3.03	26.44	54.6	91.43	140.47	207.07	18.82	8.55
Pulp, paper and paper products; publishing and printing	202.3	6.48	29.88	54.79	86.26	126.53	178.83	16.26	4.87
Basic metals and fabricated metal products	111.3	23.85	51.73	66.56	83.32	102.34	123.99	11.27	8.17
Transport equipment	139.98	22.51	43.02	50.25	57.97	66.2	74.99	6.82	10.14
Electrical and optical equipment	62.35	13.35	24.3	27.83	31.5	35.3	39.25	3.57	14.81

Table 9: Impact by EU Member Estate from the Moroccan tariff dismantling (% exports growth).

Country	c_vxest	2002	2004	2006	2008	2010	2012	crecimiento 2000-2012	crecimiento 96-01
Austria	169.74	15.58	35.04	45.87	58.66	74.02	92.84	8.44	12.59
Belgium and Luxembourg	128.66	17.12	37.64	48.9	62.01	77.46	96.02	8.73	5.07
Czech Republic	96.52	15.49	34.51	45.16	57.64	72.49	90.49	8.23	16.7
Denmark	61.43	14.37	32.17	41.92	53.32	66.85	83.23	7.57	37.45
Finland	24.33	12.4	28.58	38.87	51.14	66.02	84.45	7.68	20.83
France	101.62	16.12	35.11	45.25	57.03	70.93	87.65	7.97	5.92
Germany	121.86	15.06	32.38	41.49	51.96	64.17	78.66	7.15	3.02
Greece	14.36	14.4	35.69	49.51	66.38	87.38	114.1	10.37	29.16
Hungary	123.65	14.84	31.76	40.74	51.14	63.36	78	7.09	48.06
Italy	61.95	14.63	34.14	46.06	60.31	77.67	99.28	9.03	7.49
Lithuania	56.84	6.16	20.72	34.4	51.55	73.47	102.16	9.29	91.35
Netherlands	29.72	16.62	36.51	46.73	58.61	72.63	89.48	8.13	10.07
Portugal	165.78	12.72	33.2	48.07	66.45	89.64	119.55	10.87	7.08
Slovakia	74.98	16.78	37.92	50.34	65.02	82.67	104.27	9.48	65.4
Spain	76.84	16.72	37.68	49.53	63.51	80.27	100.74	9.16	18.29
Sweden	14.36	15.17	33.62	44.11	56.35	70.88	88.43	8.04	21.69
United Kingdom	78.18	15.12	33.69	44.14	56.44	71.15	89.09	8.1	6.95

References:

Anderson J. (1979) "A Theorical Foundation for the Gravity Equation", *American Economic Review*, (69), pp.106-116.

Baier, S.L. and Bergstrand, J.H. (2001): "The Growth of World Trade: tariffs, transport costs, and income similarity", *Journal of International Economics*, 53 (1), pp. 1-27.

Bayoumi T.and Eichengreen B. (1996) *Operationalizing the Theory of OCA* CEPR Discussion paper 1484.

Bensidoun I. and Chevallier A. (1996a) *Europe - Méditerranée : Le pari de l'ouverture*, Collection CEPII, Economica, Paris.

Bensidoun I., and Chevallier, A. (1996b): "Libre-échange euro-méditerranéen: marché de dupes ou pari sur l'avenir?", *La Lettre du CEPII*, nº 147, junio.

Blanes, J. V. (2005): "Does Immigration Help to Explain Intra-Industry Trade. Evidence for Spain", *Review of World Economics*, 141 (2), pp. 244-270.

Blanes, J.V. (2006): "Immigrant's Characteristics and their different effects on bilateral trade. Evidence from Spain", Working Paper 06.08, Department of Economics (Universidad Pablo de Olavide). Downlable at: http://ideas.repec.org/p/pab/wpaper/06.08.html

Blanes, J. V. and Martín-Montaner, J.A. (2006): "Migration Flows and Intra-Industry Trade Adjustment", *Review of World Economics*, 142 (3) pp. 567-584.

Castilho M. (1999) *Protection et Accès au Marché Européen :le cas du MERCOSUR*, Thèse de Doctorat, Université Paris I.

Castilho M., Zignago S. (2000) "Commerce et IDE dans un cadre de régionalisation : Le cas du Mercosur" *Revue-Economique*, 51(3), mai, 761-74.

Cox D. et Harris R. (1985) "Trade Liberalization and Industrial Organization: Some Estimates for Canada", *Journal of Political Economy*, 93(1).

Deardorff Alan V. (1996*) Some Economic Effects of the Free Trade Agreement between Tunisia and the EU* Discussion paper nº 385, University of Michigan.

Dunlevy, J. and Hutchinson, W. (1999): "The impact of immigration on American import trade in the late nineteenth and twentieth centuries", *Journal of Economic History*, 59, pp. 1043-62.

Eaton J. and Tamura A. (1994) « Bilateralism and regionalism in Japanese and US trade and direct foreign investment partterns » *NBER working paper 4758*.

Eichengreen B. and Irwin D.A. (1998) "The Role of History in Bilateral Trade Flows" chap. 2 in Frankel J. ed. *The Regionalisation of the World Economy*, 7-33, University of Chicago Press, Chicago.

Evenett S.J. and Keller W. (1998) On Theories Explaining the Success of the Gravity Equation, NBER WP n°6529, Avril.

Fontagné, L., and Freudenberg, M. (1997): *Intra-industry trade: methodological issues reconsidered*, *CEPII Working Paper*, nº 97-01, enero, Paris: CEPII.

Fontagné L., Freudenberg M. and Péridy N. (1998) "Commerce international et structures de marché : une vérification empirique", *Economie et Prévision* 135 1998-4, 147-167.

Fontagné, L. and Péridy, N. (1995) "Uruguay Round et PVD : le cas de l'Afrique du Nord", *Revue Economique*, 46 (3), mai, 703-715.

Fouquin M. and Gaulier G. (1999) "Ouverture, concurrence et multilatéralisme", *La Lettre du CEPII* n°184, novembre.

Frankel J.A. and Wei S.J. (1993) *Trade Blocks and Currency Blocs*, NBER WP n° 4335.

Frankel J.A., Stein S.J. and Wei S.-J. (1996) « Regional Trading Agreements: Natural or Super-Natural*? », American Economic Review*, 86(2).

Girma, S. and Yu, Z (2002): "The link between immigration and trade: Evidence from the UK", *Weltwirtschaftliches Archiv*, 138, pp. 115-130.
Gould, D. (1994): "Immigrant links to the home-country: empirical implications for U.S. bilateral trade flows", *The Review of Economics and Statistics*, 76, pp. 302-316.
Harrigan, J. (1993) "OECD Imports and Trade Barriers in 1983", *Journal of International Economic*s, 35, 91-111.
Haveman, J. and Hummels, D. (1998) "Trade creation and trade diversion: new empirical results", *Journal of Transnational Management development*, 3(2), 47-72.
Head K. and Mayer T. (1999) "Non-Europe : The Magnitude and Causes of Maket Fragmentation in the EU", *Weltwirtschaftliches Archiv*, 2.
Head, K. and Ries, J. (1998): "Immigration and trade creation: Econometric evidence from Canada", Canadian Journal of Economics, 31, pp.47-62.
Helpman E. and Krugman P. (1985) *Market Stucture and Foreign Trad*e, MIT Press, Cambridge.
Hummels, D. (1999) "Towards a Geography of Trade Costs", *Mimeo*, University of Chicago.
Hummels, D. and Levinsohn, J. (1995) "Monopolistic Competition and International Trade : Reconsidering the Evidence", *Quartely Journal of Economic*s, 110 (3), 799-836.
International Monetary Fund (1995) *Morroc Staff Report for the 1995* Article IV Consultation, septembe.
Milgram, J. (2001):*Régionalisme versus multilatéralisme: le cas du Maghreb*, Thèse de doctorat présentée et soutenue publiquement à l'Université Paris 1, novembre.
Milgram J. (2005) "Quotas on Clothing Imports: Impact and Determinants of EU Trade Policy", *Review of International Economics*, 13(3), 445–460
Péridy, N. (2005): "Towards a New Trade Policy Between the USA and Middle-East Countries:Estimating Trade Resistance and Export Potential", *The World Economy*, 28 (4), pp. 491-518.
Péridy, N. (2006): "The European Union and its neighbors: an estimation of migration potential", *Economic Bulletin*, Vol. 6, Nº 2, pp.1-11.
Rauch, J. and Trindade, V. (2002): "Ethnic Chinese Networks in International Trade", *Review of Economics and Statistics*, 84 (1), pp. 116-130.
Rose, A.K. (2004): "Do We Really Know That the WTO Increases Trade?", *The American Economic Review*, 94 (1), pp. 98-124.
Rutherford T., Tarr D. (1994) "L'accord de libre-échange entre le Maroc et la CEE: une évaluation quantitative", *Revue d'économie du développement*, 2, juin.
Wagner, D. Head, K. and Ries, J. (2002): "Immigration and the Trade of Provinces", Scottish *Journal of Political Economy*, 49 (5), pp. 507-525.
Wall H.J. (1999) "Using the Gravity Model to Estimate the Costs of Protection", *Review of the Federal Reserve Banj of St. Louis*, janvier-février.
Wei S (1996) "Intra-National versus International Trade : How Stubborn Are Nations in Global Integration ?", *NBER Working Paper*, 5531.