The European Union-Turkey Trade Relations under the Influence of Customs Union

H. D. Mumcu Akan and B. Engin Balin

***Abstract*—Customs Union Agreement between Turkey and European Union (EU) in the area of trade was expected to have a positive impact on Turkish Economy because Turkey is the only candidate country that has an agreement enhancing trade integration. In this paper, overview, assessment and widening of the agreement in terms of trade will be evaluated. In addition to this, problems caused by the asymmetric nature of customs union (CU) agreement will also be emphasized. Our panel gravity model proved the ineffectiveness of CU on trade flows between Turkey and EU-15. Therefore it would have been better for Turkey to have signed a Free Trade Agreement (FTA) with the EU and renegotiating an FTA instead of the CU.**

***Index Terms*—Turkey, European Union, customs union, free trade area, gravity model.**

I. Introduction

The final phase of the relations between Turkey and EC under the Ankara association Agreement of 1963 was to achieve the EC-Turkey customs union. This final phase entered into force on 31 December 1995. This was a unique status of a particular single country with an existing trade block. Turkey as a founding member of UN, a member of council of Europe, OECD and a member of NATO had to expand this cooperative spirit to economic area. Thus Turkey choose to begin close cooperation with EEC in 1959 made its first application but was not admitted due to development level was not considered to meet the requirements for full membership. Turkey after this signed the Association (Ankara) Agreement in 1963 and then the additional protocol between parties which showed how the customs union would be established and signed. Ankara agreement had three stages "preparatory stage," "transitional stage" and final stage. By the end of second stage, customs union would be completed.

The steps of how the CU would be established were set out at the Additional Protocol of 1970. Both of the parties would abolish tariff and quantitative barriers to its imports with an exception Turkey (with some exceptions including fabrics). Furthermore, the Additional Protocol envisaged the free circulation of natural persons between the Parties in the next 12 to 22 years.

The Additional Protocol brought significant advantages for Turkey's agricultural exports to the European Economic Community (EEC). 92% of our agricultural exports in 1971 benefited from this regime. Despite other agricultural producers such as Greece, Portugal and Spain later becoming member states, and the EEC's conclusion of preferential trade agreements with certain Mediterranean countries, Turkey preserves even today its position as one of the EEC's most privileged trading partners. With the full implementation of the Additional Protocol, the free circulation of goods and services and the harmonization of Turkish legislation would have been achieved at the end of the 22 year timetable.

Talks were finalized on March 1995 at the Turkey - EU Association Council. By January 1996 Turkey lifted all customs tariffs on industrial goods imported from the EU with addition started to apply the same tariff rate as the EU on the goods imported from third countries with an exception of agricultural goods. The Agreement has also put forward reforms of technical standards regime and competition policy [1]. As stated by Appleyard [2] the second stage of integration was customs union and completed in the case of Turkey and EU.

In this study, we aim to put forward the trade relationship between Turkey and EU-15 in the context of CU agreement. In the proceeding part of the study an overview and assessment concerning the CU agreement will be made. Later on in the context of deepening the CU the external trade policy the pros and cons of trade integration and technical barriers to trade will be stated and evaluated. Finally we tried to analyze the possible effect of CU on Turkish trade flow by constructing a gravity model with the use of panel data approach.

II. Overview and Assessment

The bilateral trade liberalization of industrial tariffs and alignment of external industrial tariffs was not sufficient for Turkey but it had also to adopt Community legislation with respect to the elimination of technical barriers to trade. One more issue that has to be considered was the adoption of community's commercial policy towards third countries and EU's preferential trade partners. The 1995 agreement requires the elimination of all quantitative restrictions these measures have significance in the area of textiles and apparel where EU quotas against Turkish imports are to be eliminated.

EU had already opened its markets for Turkish exports long ago customs union was completed so we can say this is why the customs union itself did not cause a major shift in relative trade shares. Nevertheless the volume of bilateral trade has increased especially with the completion of customs union. Customs Union forced Turkey to further liberalize its foreign trade. Customs Union in terms of economic theory has two sides, one elimination of tariffs among the partners can lead to additional trade thus welfare can be enhanced if high cost domestic production can be replaced with low cost imports: trade creation. Two, if barriers with respect to the

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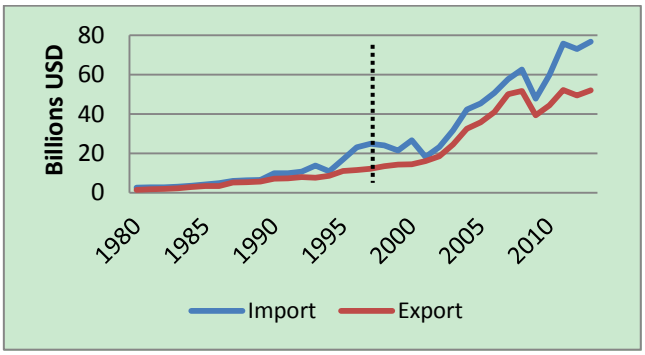
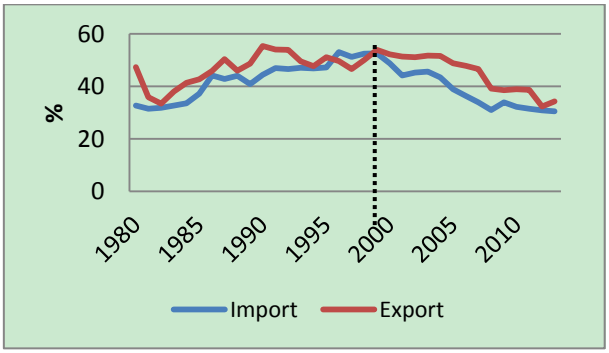
rest of the World remain high, resulting additional trade between partners might be replaced by lower-cost imports from the rest of the World (trade diversion). The relative weight of these two sides determines the overall impact of customs union. Due to harmonization inconsistencies raise questions about the future of the arrangement. When you go deeper in some areas while you restrict the others The EU and Turkey will have to face problems the best way to get out of this situation is deepening integration.



Source: Turkish Statistical Institute, www.turkstat.gov.tr.

Fig. 1. Trade flows between Turkey and EU-15 (1980-2013).

As it can be seen from the Fig. 1 CU's economic impact on Turkish trade flow has been positive. After 1990s the bilateral trade has increased significantly. Due to the main effect of CU that has forced Turkey to reduce its external rate of protection and liberalize its foreign trade. Correspondently Turkey's trade to the world has also increased substantially with the CU agreement's positive effect on trade integration. The relative stationarity of EU's share in trade flows (in Fig. 2) supports this fact.



Source: Turkish Statistical Institute, www.turkstat.gov.tr.

Fig. 2. EU-15's Share in total trade flow of Turkey (1980-2013).

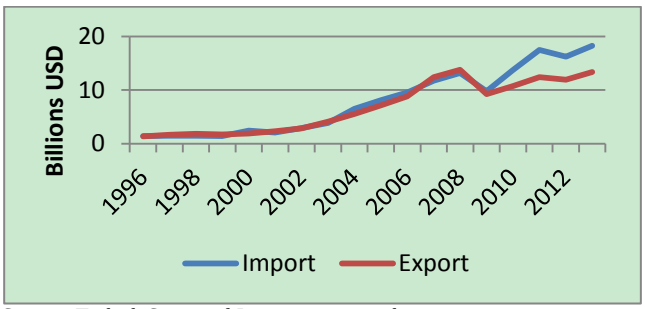
When Fig. 2 observed, EU-15 has always been the most important trade partner of Turkey. However, with China becoming a major player in the global market, the EU's trade partnership with Turkey had a downturn trend. The share of imports from the EU has declined since 1995, from 50 per cent to 30 per cent in 2013. The CU agreement with the EU did not have much impact on Turkish exports. The share of Turkish export to EU fluctuates within a band of 35% and 50% from 1980s till the global economic crisis in 2008. One of the reasons was that the EU had already removed tariffs on Turkish goods before the CU. Furthermore, in the presence of CU, EU still continues to impose anti-dumping duties on Turkish exports to the EU by preserving technical barriers [3].

III. Under the Influences of the Customs Union

A. Preferential Trade Agreements

The bilateral trade liberalization of industrial tariffs and alignment of external industrial tariffs was not sufficient for Turkey but it had also to adopt Community legislation with respect to the elimination of technical barriers to trade. One more issue that has to be considered was the adoption of community's commercial policy towards third countries and EU's preferential trade partners. The 1995 agreement requires the elimination of all quantitative restrictions these measures have significance in the area of textiles and apparel where EU quotas against Turkish imports are to be eliminated.

EU had already opened its markets for Turkish exports long ago customs union was completed so we can say this is why the customs union itself did not cause a major shift in relative trade shares. Nevertheless the volume of bilateral trade has increased especially with the completion of customs union. Customs Union forced Turkey to further liberalize its foreign trade. Customs Union in terms of economic theory has two sides, one elimination of tariffs among the partners can lead to additional trade thus welfare can be enhanced if high cost domestic production can be replaced with low cost imports: trade creation. Two, if barriers with respect to the rest of the World remain high, resulting additional trade between partners might be replaced by lower-cost imports from the rest of the World (trade diversion). The relative weight of these two sides determines the overall impact of customs union. Due to harmonization inconsistencies raise questions about the future of the arrangement. When you go deeper in some areas while you restrict the others The EU and Turkey will have to face problems the best way to get out of this situation is deepening integration.



Source: Turkish Statistical Institute, www.turkstat.gov.tr.

Fig. 3. Impact of Free Trade Agreements* on Turkey's foreign trade (1996 – 2013).

(*) Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Slovenia, Croatia, Bosnia-Herzegovina, Republic of Macedonia, Israel.

Turkey also was in risk of loosing potential tariff revenues because goods originating from third countries shall not be exported directly to Turkey instead re-exported from the Community for excluding the import duties. The solution is not so simple to this problem, Turkey cannot be made a party to the free trade agreements that the community has negotiated. EU has started to introduce a 'Turkish clause' in its new bilateral trade agreement where she asks her new partner to negotiate a similar agreement with Turkey.

To conclude this section, the asymmetric structure of customs union is a difficult arrangement for establishing and

maintaining a common commercial policy between partners. The Ankara agreement is based on customs union. During the customs union negotiations there were no discussions about whether to put forward a free trade agreement. Turkey saw customs union as a step of integration that was going to take her to full integration at the end.

B. Trade Defense Measures under Customs Union

The 1995 agreement in terms of contingent protection made the parties to impose anti-dumping and countervailing measures in their bilateral trade. Anti-dumping measures are applied if a company exports a product at a price lower than the price it normally charges on its own home market, it is said to be "dumping" the product (WTO). Most governments take action in order to defend their domestic industries. Countervailing measures can be undertaken whenever an investigation, by the investigation authority of the imposing country has led to the determination that the imported goods are benefiting from subsidies and that they result in an injury (OECD).

In terms of anti-dumping investigations of 137 totally Turkey ranked tenth among (1996-2008). Turkey has to demonstrate to the Community that all the areas of acquis communautaire plus the areas of competition and subsidy disciplines have been adopted and enforced in the Turkish economy. Due to lack of a calendar for their elimination in the context of customs union there is no guarantee in the future showing the rules will be applied. The EU has applied many trade defense measures to Turkey especially in the issue of anti-dumping. One more question can be raised in this context has trade defense measures increased after the elimination of border controls with the application of customs union agreement. The answer is no, the trade measures applied are spread in time. There is no break from 1996 onwards. With the above conclusions can we state that the trade defense measures can be eliminated between the two parties in the near future? No, if Turkey can demonstrate to the Community that all competition and anti-subsidy disciplines have been implemented but governments use anti-dumping measures to protect domestic monopolists or cartels from fringe competition [4]. Harmonization with the EU's competition policy could deal with some aspects of contingent protection but never lead to full abolition unless the two parties are willing to push for further market integration.

The second major problem is the role of safeguards. "If serious disturbances occur in a sector of any of the parties than that party may take the necessary protective measures" (Additional Protocol, 1970) Safeguards can have serious consequences on the depth of integration between the parties. Producers in the EU or Turkey could adapt their behavior so as to increase the probability of satisfying the conditions necessary to obtain protection [5].

C. Technical Barriers to Trade

The technical barriers to trade are main actors in the customs union because they represent Turkey's integration to the EU single market. We can sum up the problems under three headlines: (1) institutional setting in Turkey. (2) Standardization problems. (3) Conformity. The centerpiece of the institutional setting in Turkey is the Turkish Standards Institute a non-governmental public institution under the influence of the state. The General Assembly primarily composed of various ministry representatives. All imported goods have to hold a TSE mark and a quality conformance certificate. In the area of accreditation Turkey has established an accreditation authority "TURKAK" in the recent past. The basic problems arise from the low level of transparency and openness of the system. Unmarked products face marketing difficulties. With the standardization issue, legislations for Turkey's harmonization with the EU system should be made to achieve the removal of trade barriers goal at the end. In the conformity issue also the two parties' relationship is still underdeveloped. The main task should be strengthening the technical capacity of the Turkish system of certification and increase confidence between the parties. This process is a lengthy and costly one. In the fields of regional and international cooperation can be helpful. Turkey in recent years has made progress especially in the issue of standardization; the most important of these include ISO. Turkey is also actively pursuing memberships in European standardization initiatives like CEN (European Committee for Standardization) and CENELEC (European Committee for Electrotechnical Standardization).

IV. The Gravity Model of Bilateral Trade

The gravity model (by analogy with Newton's law of gravity) explains bilateral trade flows by two countries' masses (GDP and/or population), distance, and preferential trade agreements between them and by other factors, such as common language, common border or colonial ties. As it is clearly stated by Deardorff "all that gravity equations says, after all, aside from its particular functional form, is that, bilateral trade should be positively related to the two countries' incomes and negatively related to the distance between them [6]."

The model was first developed by Tinbergen [7] and Pöyhonen [8]. The best known theoretical rationale for the idea that bilateral trade depends on the GDPs comes from the work by Helpman [9] and Helpman and Krugman [10]. They analyzed the effects of preferential trading arrangements on the volume of trade and on economic welfare in theoretical basis. According to their theory, since consumers request variety in the products they consume, products are differentiated not only by countries but also by firms that works in monopolistically competitive market. The authors argued the superiority of the gravity model over the classical Hekscher-Ohlin theory since the second does not have the property that bilateral trade depends on the product of incomes.

The basic gravity model specification used by Tinbergen and Pöyhonen is shown in Equation (1). The equation captures the bilateral gross aggregate trade flows between the two trading partners as a function of their GDPs and the distance between them.

$$PX_{i,j} = \beta_0 (Y_i)^{\beta_1} \left(Y_j\right)^{\beta_2} \left(D_{ij}\right)^{\beta_3} (A_{ij})^{\beta_4} u_{ij} \quad (1)$$

In Equation (1), the explanatory variable PX_{ij} represents the value of the flow from country i to country j; Y_i denotes the GDP of country i, Y_j is the GDP of country j, and D_{ij} is the

geographic distance between the economical centers of country *i* and country *j*. The letter A_{ij} denotes any other factor(s) that affect trade between country *i* and *j*, and u_{ij} is a log-normally distributed error term, with $E(\ln u_{ij})=0$

The impacts of Turkey's membership to the CU have been analyzed within the gravity model setups in a few studies. Lejour *et al.* [11] used the statistically significant estimated coefficients of the dummy to evaluate the potential increase in EU–Turkey bilateral trade. They estimated that the sectoral weighted average of EU–Turkey bilateral trade could increase by 34% if Turkey was a member of the EU. Flam [12] points to an even larger impact of Turkey's accession on its aggregate trade volume with the EU (plus 46%). Antonucci and Manzocchi [13] used the gravity model for Turkey's merchandise trade over a long time span (1967–2001) and did not find robust evidence of additional trade between Turkey and the EU. Neyaptı *et al.* [14] set the gravity model for Turkey's export and import more than 150 countries over the years 1980–2001. They concluded that the CU agreement has contributed to the increasing volume of trade of Turkey, coupled with a decline in income elasticities of trade over the CU period. Lehmann *et al.* [15] investigated Turkey's sectoral trade flows to the EU in the framework of an extended gravity model using panel data from the period 1988 to 2002. According to their simulations, strengthening and expanding the CU between Turkey and the EU to products excluded so far (such as vegetables and fruits) would lead to a noticeable increase in export levels in agricultural sectors still suffering from EU tariffs or tariff-like protection.

A. Model

Our empirical analysis exploits a balanced panel of annual observations and covers EU-15 countries, chosen on the basis of their trading importance with respect to Turkey, over a 34-year period (1980–2013). The dataset consists of 476 observations for each variable of the each panel. Data sources and explanations are presented in the Appendix.

Within the related literature it is observed that cross-sectional data is used to estimate trade patterns in a given year or on averaged data for gravity models. However, cross-sectional data does not provide the relevant relationships over time and the risk of choosing an unrepresentative year can hardly be avoided. Hsiao [16] listed the benefits of using panel data sets as (1) Panel data set is much larger with more variability and less collinearity among the variables (2) The data is more informative, it can be found more reliable estimates and test more sophisticated behavioral models with less restrictive assumptions. (3) Panel data sets are able to control for individual heterogeneity. (4) Panel data sets are better able to identify and estimate effects that are simply not detectable in pure cross-sections or pure time-series data. (5) Panel data sets are better able to study complex issues of dynamic behavior.

Panel-data allows monitoring unobservable individual effects between trading partners and it is quite eligible econometric specification for the gravity equation to control heterogeneous trading relationship. Hence we preferred to run panel regressions. The estimation process started with the pooled ordinary least squares (OLS). However the simple OLS estimation disregards unobserved heterogeneity effects. Thus the likelihood ratio (LR) test is used in order to decide whether there are individual (country-specific) and/or time effects. The results indicate the existence of unobservable country-specific heterogeneity. The next step is to determine whether this country-specific heterogeneity is fixed or random.

Baltagi [17] states that the fixed effects model (FEM) is an appropriate specification if the observations focus on a specific set of N firms, countries or states which are under similar conditions while the random effects model (REM) is an appropriate specification if the observations are drawn randomly from a large population. From this point of view FEM would be a better choice than the REM since we are interested in estimating trade flows between predetermined selections of countries. However the problem with the FEM is that the estimation of the coefficients of the variables that do not change over time, such as distance, and to some extent also the dummy variables, is difficult; because the FEM tends to omit such variables. We have checked these two alternative specifications using the Hausman test, and the choice of the REM is supported by the data.

Even though the standard gravity model has been originally formulated in multiplicative form, a specification in logarithmic form allows interpreting the coefficients as elasticity. Exports from country *j* (Turkey) to *i* (EU-15) and imports of country *j* (Turkey) from country *i* in period t are modeled as:

$$lx_{ijt} = \beta_0 + \beta_1 ly_{jt} + \beta_2 ly_{it} + \beta_3 lpop_{jt} + \beta_4 lpop_{it} + \beta_5 ldist_{ij} + \beta_6 CU + \mu_i + u_{it} \quad (2)$$

$$lm_{ijt} = \beta_0 + \beta_1 ly_{jt} + \beta_2 ly_{it} + \beta_3 lpop_{jt} + \beta_4 lpop_{it} + \beta_5 ldist_{ij} + \beta_6 CU + \mu_i + u_{it} \quad (3)$$

where lx_{ijt} denotes the natural logarithm of exports from Turkey to EU-15 countries, lm_{ijt} denotes the natural logarithm of imports to Turkey from EU-15 countries, ly_{jt} denotes the natural logarithm of the real gdp of Turkey (constant 2005, USD), ly_{it} is the natural logarithm of the real gdp of the EU-15 countries (constant 2005, USD), $lpop_{jt}$is the natural logarithm of the total population of Turkey, $lpop_{it}$ is the natural logarithm of the total population of EU-15 countries, $ldist_{ij}$ is the natural logarithm of the distance (km) between the capitals of Turkey and EU-15 countries, CU is the customs union dummy variable which is "0" between 1980-1995 and "1" between 1996-2013. β_0 stands for the specific country-pair effects and allows to control for all omitted variables that are cross-sectionally specific but remain constant over time. μ_i denotes the unobservable country-specific effect and u_{it} denotes the remainder disturbance.

B. Empirical Results

The model is tested for heteroskedasticity and serial correlation. Levene, Brown and Forsythe test represented the existence of heteroskedasticity. Both Baltagi-Wu local best invariant (LBI) test and Durbin-Watson test indicated the existence of serial correlation. The results given in the Table I are the robust coefficients that are adjusted by Arellano, Froot and Rogers estimators. Empirical results support that the baseline gravity equations (2) and (3) fit well both Turkish import and export data over 1980–2013.

TABLE I: PANEL-DATA REGRESSION RESULTS

	Export Model (lx_{ijt})		Import Model (lm_{ijt})	
ly_{jt}	1.458*	(0.203)	2.523*	(0.460)
ly_{it}	1.954*	(0.229)	2.070*	(0.714)
$lpop_{jt}$	**1.608**	**(0.832)**	-1.731**	(0.832)
$lpop_{it}$	-0.722*	(0.181)	**-0.957**	**(0.722)**
$ldist_{ij}$	-0.860*	(0.305)	-0.661*	(0.127)
Cu	**-0.022**	**(0.084)**	**0.074**	**(0.115)**
constant	-81.497*	(9.373)	-50.383*	(9.312)
R^2	0.916		0.924	
Wald Chi^2	800.00		952.70	
Prob>Chi^2	0.0000		0.0000	

Note: Robust standard errors are represented in parentheses.
Coefficients with (*) are significant at 1%; (**) are significant at 5%. Coefficients in bold are not significant at standard levels.

Wald test proves that the significance of the model and R-square is over 90% for both models which means the selected explanatory variables are successful to represent the change in the trade flows between Turkey and EU-15. As gravity model suggested both export and import is positively related to the GDP of the partners and negatively related to the distance between them.

An important result is that the import of Turkey is more sensitive to the income changes than exports. 1% increase in real GDP of Turkey raises its import by 2.5% and export by 1.5%. The same relationship is found to be valid for the partner countries' real GDP too. 1% increase in real GDP of the partner countries raises import by 2.1% and export by approximately 2%.

$lpop_{it}$ and $lpop_{jt}$ are found statistically significant in export and import models respectively. Their sign is negative which means that population of partner country negatively effects the export of Turkey while population of Turkey negatively effects its import from partner countries. Both Zarzoso-Lehman [18] and Brun *et al.* [19] indicates that the coefficient of the importer population has an ambiguous sign. The sign of the coefficient depends on whether the country exports less when it is big (absorption effect) or whether a big country exports more than a small country (economies of scale). Similarly Coe *et al.* [20] introduces the population variables as a measure of geography: For larger countries, the cost of trading among themselves rather than with other countries is relatively low compared with the cost for smaller countries. On the other hand $lpop_{jt}$ and $lpop_{it}$ are found insignificant in export and import models respectively which means the own population of the country is not expressive on its export.

Finally, our dummy variable for customs union is found statistically insignificant for both models. Therefore we can conclude that trade patterns between Turkey and EU do not diverge before and after CU agreement accordingly the exclusion of some agricultural products within the CU agreement which is a substantial part of Turkey's export potential; technical barriers to trade such as lack of standardization, institutional settings and conformity problems and finally the ongoing trade defense measures and safeguards under the CU.

V. CONCLUDING REMARKS

The customs union between Turkey and the EU was a pioneering effort and has remained unique. In this study we aimed to look at the determinants of Turkish trade flows under the Gravity Model approach. CU agreement was expected as an important variable for trade integration between parties. However our model proposed that there is no significant change in trade patterns accordingly.

Various aspects of why Customs Union is a difficult task to fulfill can be set as follows. It is difficult to manage especially when the parties differ at a large extent in size. Turkey and EU signed a customs union agreement as a legal issue this was an example of trade integration. Hidden protectionism is the source of problems in terms of trade for EU side. In relation to the widening of customs union the incorporation of the agricultural sector can be sighted. CU agreement with the EU prohibits Turkey from negotiating FTA's with its other major partners independent of EU but this issue has been considered by EU with an extension of Turkey in its new agreements. Widening the CU coverage in terms of agriculture and services would bring important benefits to both parties.

APPENDIX: DATA SOURCES AND DEFINITIONS

Variable	Name of the data	Source	Unit
x_{ijt}	Export of Turkey to the partner country in year t	Turkish Statistical Institute	USD
m_{ijt}	Import of Turkey from the partner country in year t	Turkish Statistical Institute	USD
y_{jt}	Real GDP of Turkey in year t	World Bank	USD, constant 2005
y_{it}	Real GDP of the partner country in year t	World Bank	USD, constant 2006
pop_{jt}	Population of Turkey in year t	World Bank	Total population
pop_{it}	Population of the partner country in year t	World Bank	Total population
$dist_{ij}$	Distance between the capital of Turkey and the capital of the partner country	maps.google.com	Km
cu	Customs Union Dummy	-	1980 - 1995: *cu* =0 1996 - 2013: *cu*=1

EU-15 area countries are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom. Since the bilateral trade flow data Belgium and Luxemburg are evaluated together by the Turkish Statistical Institute (for most of the years), the other variables is evaluated together for these counties too. (i=14 j=1 t=34 and 476 observations)

Elaborations have been performed employing Stata11 econometric package.

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