

## THE EFFECTS OF THE CUSTOMS UNION ON TRADE BETWEEN TURKEY AND EUROPEAN UNION

### GÜMRÜK BİRLİĞİ'NİN TÜRKİYE VE AVRUPA BİRLİĞİ ARASINDAKİ TİCARET ÜZERİNE ETKİLERİ

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*Abstract: In this study, the effects of the Customs Union on the foreign trade between European Union and Turkey were analyzed using 1980-2015 period data. According to the co-integration test results of the export and import models, CU positively affects both Turkey's exports to the EU and its imports from EU. The overall results of the study show that the CU has trade creation effect; however this effect is very limited. Examination of the market share of Turkey's total exports after joining the CU shows that the decrease of EU's share and the increase of the exports to third country markets is an indicator of the fact that CU is not a trade diversion effect for Turkey.*

*Keywords: Economic Integrations, Customs Union, European Union, Turkey, Foreign Trade.*

*Öz: Bu çalışmada Gümrük Birliği'nin Türkiye ve Avrupa Birliği arasındaki dış ticaret üzerine etkileri 1980-2015 dönemi kapsamında analiz edilmektedir. İhracat ve ithalat modellerine ilişkin yapılan eş-bütünleşme test sonuçlarına göre GB, Türkiye'nin AB'ye yaptığı ihracat ve AB'den yaptığı ithalat değerlerini pozitif yönde etkilemektedir. Çalışmadan elde edilen genel sonuçlar, GB'nin ticaret yaratıcı etkisinin olduğunu, buna karşın bu etkinin oldukça sınırlı kaldığını göstermektedir. Türkiye'nin GB sonrası gerçekleştirdiği toplam ihracatının pazar paylarına bakıldığında AB'nin payının azalması ve üçüncü ülke pazarlarına ihracatının artması ise GB'nin Türkiye açısından ticaret saptırıcı sonuçları olmadığını bir göstergesidir.*

*Anahtar Kelimeler: İktisadi Entegrasyon, Gümrük Birliği, Avrupa Birliği, Türkiye, Dış Ticaret.*

## INTRODUCTION

The countries started participating in the economic integration movements to increase their production capacities and their efficiency, to increase the wealth of the society and to protect themselves from competition in response to the globalization movements that accelerated since the 1950s. As a result of these movements, considerable change has been observed in the volume and movement of world trade. As a consequence of the necessity to adapt to the global competition environment, countries have revised their foreign trade policies. As the free trade approach dominated international trade, the tariffs and quotas limiting foreign trade became more and more irrelevant. Many countries, primarily industrialized countries started an economic integration process and participated in various organizations to adapt to the changes in the world trade and to take advantage of these changes. The most remarkable of these organizations are the European Union (EU) and specifically the Customs Union (CU) (Nart, 2010). CU is the integration method that is ubiquitous in history, and is a term that involves the removal of all tariffs and quotas, and the adoption of shared foreign trade policies by using a shared tariff between the union and third countries.

Turkey's application to join the European Economic Community on July 31, 1959 is important in terms of the globalization and trade expansion efforts of Turkey. Turkey-EU relations started with the Ankara Agreement that is an Association Agreement and that entered into force on December 1, 1964. On January 1, 1996, the CU agreement executed between Turkey and EU removed all customs tariffs and quotas on all industrial products imported from the EU, and a Common Customs Tariff (CCT) between the parties entered into force. As the commercial provisions of the Additional Protocol entered into force on September 1971, the EU also removed the customs tariffs and quotas from the industrial products it imports from Turkey (with some exceptions). The scope of the CU agreement that entered into force in 1996 was limited with industrial products and processed agricultural products (Özkale and Karaman, 2006).

Turkey undertook much more obligations than a CU integration in line with Turkey's full membership to EU warranted. It undertook not only to apply a common trade policy towards third countries and deregulation of trade goods, but to execute legal and institutional modifications concerning service trade, customs legislation, competition policy, government subsidies, anti-dumping legislation and intellectual property rights (Mercenier and Yeldan, 1997). The EU is the largest trade partner of Turkey. This is clearly observed in the foreign trade statistics. Almost half of Turkey's trade in all periods has been with the EU. Geographical closeness, one of the main factors guiding foreign trade had a significant impact on the foreign trade relations between Turkey and the EU (İncekara, 1995).

The rest of this study, which examines the effects of the CU on the foreign trade between Turkey and the EU is organized as follows: The second part presents theoretical explanations about economic integrations in general and specifically the CU between EU and Turkey, and the third part contains the relevant empirical literature. The fourth part contains the methodology and empirical results, and our study is concluded with the fifth part that contains the results and the discussions on these results.

## **1. ECONOMIC INTEGRATIONS AND EU-TURKEY CUSTOMS UNION**

Historically, it is possible to say that the economic integration movement that started after World War II gained momentum after the 1960s. Additionally, it can also be observed that the economic integration movements increased more after the 1980s when parameters such as growth, development and international competition of the world economies were increasing. The main reasons that drove the increasing number of economic integrations in line with globalization movements were that countries wanted to resist the competition conditions that became tougher and to benefit from the increasing opportunities in the market to increase their efficiency. Thus, it can be said that there are three main reasons for economic integration (Incekara, 1995: 63). The first reason is the assumption that economic integration will develop the countries' production capacities and increase their social wealth. The second one is the thought that the countries will lose their competitiveness if they stay outside economic integrations and that they will not be able to handle this situation. The third reason is the assumption that countries that have to coexist due to geographical circumstances (neighboring countries) should join forces in order to take part in the international economic and political decision processes.

The process of economic integration starts with a narrow partnership then moves towards a more comprehensive partnership. According to Bela Balassa (1961), who listed the stages of the economic integration process, the first requirement is the removal of factors that prevent the trade in goods (free trade associations). Then, tariffs and quotas between the countries must be removed and a CCT should be applied towards third countries (Customs Union), the free movement of production factors between countries (common market) must be ensured, the national economic policies must be harmonized (economic and monetary union), and finally political unity must be established. The narrowest form of economic cooperation that aims to benefit from division of labor and specialization to increase the trade volume by strengthening the economic and commercial relations between two countries is called a Preferential Trade Agreement (PTA). The signatory states bilaterally reduce customs tariffs on specific goods. The most important feature of PTA is that while it establishes privileged commercial relationships between the parties of the agreement, it excludes third countries from these privileges. Between 1988 and 1992, the trade of agricultural products increased more rapidly than the trade of industrial products under the PTAs that constituted 40% of the world trade. However, these agreements are not parts of integration processes and do not constitute regional trade block in terms of geography. Thus, Free Trade Associations (FTZ) is considered the first step of economic integration.

FTZs involve removing the customs tariffs and quotas that are obstacles against the free movement of services and goods between two or more countries. However, at this stage, each country applies an independent tariff towards countries that are not part of the agreement. The common market created for the goods and services entering the zone are not free for the movement of production factors. Also, there is no need to harmonize and merge the economic policies and institutions for these kinds of unions. Each country

applies the economic policy that it sets towards countries outside the zone. Thus, there is no positive union at this stage. The best example for a free trade association is the European Free Trade Association (EFTA) (Balkır, 2010: 355). The next stage in this kind of integration is the Customs Union. In CU, the member states remove the customs tariffs and quotas, in addition to applying a common external tariff, or a CCT towards third countries. CU has many examples but the best example is the German Customs Union (Zollverein) established in 1843. Removing tariffs and quotas among of members, starting to apply a common tariff rate towards external countries and adoption common trade policies are the most important features of a CU. The goal is to remove the customs tariffs and foreign trade regulation devices that prevent free movement of goods and to harmonize the customs tariffs that will be applied towards third countries in order to establish a union between goods markets (Hatipler, 2012: 2).

The next stage in CU is the Common Market. A Common Market agreement removes all tariffs and limits between member states, establishes common external tariffs and allows free movement of production factors including workforce, capital and technology in the area. The free movement of production factors sets this type of union apart from the others. EEC is an example of this stage. The most advanced stage of economic integration movements is the Economic and Monetary Union. In this type of union, internal tariff obstacles are removed, common external tariffs towards third countries are set and the factors can move freely, in addition to the coordination and harmonization of economic and social policies within the union. Economic and monetary union means that a common currency exists and the economic policies are centralized. Thus, monetary integration is a crucial element of economic and monetary union (Yıldız, 1999: 90). Harmonization of the monetary and economic policies of the countries will cause their economic government to be centralized in one location. Although the union acts in harmony in economic matters, it may also have to act in harmony in terms of security and defense. Thus, a political union may emerge as the next step of economic integration. What sets this stage apart from the previous step is that national economic independence largely disappears at this stage and a supra-national authority takes its place. Many scholars do not mention the political union stage and consider economic union as the final step of economic integration (İncekara, 1995).

### **1.1. EU-Turkey Customs Union**

According to a declaration called "Schuman Declaration," Western Germany and France announced on May 9, 1950 that they will administer their coal and steel industries together. This declaration resulted in the Paris Agreement signed in 1951 and entered into force on July 25, 1952 with the participation of 6 states (Germany, France, Italy, Netherlands, Belgium and Luxembourg) in order to be able to record the usage of coal and steel, which are important inputs for the weapons industry. This agreement meant the establishment of the European Coal and Steel Community (ECSC), which was the foundation stone of the EU. The idea of EU is the product of a search for a new economic and political model in Europe, which sustained massive destruction during the World War II. ESCS that was a result of these searches aimed to unify the European

countries economically and politically in order to achieve sustainable peace (Sağlam *et al.*, 2011: 89).

The ESCS that was established after World War II resulted in the EU, which is the most successful and boldest economic union movement. The first important step in the economic integration of EU was the establishment of a common market through the CU. The CU (towards which Turkey was suspicious at the time, stating that "they are partners, we're the market") was established with the Fusion Agreement signed by 6 countries (Germany, France, Italy, Netherlands, Belgium and Luxembourg) in 1965. This agreement united 3 communities (ECSC, EEA and European Atomic Energy Community) and became known as the European Community. The Maastricht Agreement signed in 1992 and entered into force in 1993, the Community was renamed to EU and the three pillars of EU (economic and monetary union, common foreign and security policies and cooperation in justice and internal affairs) were established under a new legal structure (Bilici, 2006: 41). The six founding members of the union were Germany, France, Italy, Netherlands, Belgium and Luxembourg. In time, Denmark, Ireland and United Kingdom joined the union in 1973, Greece in 1981, Spain and Portugal in 1986, Austria, Finland, Sweden in 1995, Hungary, Poland, Czech Republic, Estonia, Lithuania, Letonia, Slovenia, Slovakia, Cyprus and Malta in 2004, Romania and Bulgaria in 2007 and Croatia in 2013 and the total number of EU members today is 28 (Richardson and Mazey, 2015).

Turkey's EU integration process started with its application in 1959 and is still going on. Turkey applied for a membership to the EEC of the time, on July 31, 1959. As a result of its application, a Partnership Agreement (Ankara Agreement) was signed between the EEC and Turkey on September 12, 1963 and this agreement entailed the establishment of a CU between the parties. On November 23, 1970, an Additional Protocol that determined a schedule for the removal of quotas and tariffs on goods imports and the free movement of workers was signed. The execution of the CU Agreement between EU and Turkey in 1995 was the product of long negotiations. This agreement between two parties was considered the first step of Turkey's membership to EU. The CU Agreement that entered into force on January 1, 1996 was a decision foreseen in the Ankara Agreement that established the EU-Turkey partnership. The CU is legally the consequence of the Partnership Council Resolution dated March 6, 1995. Agricultural and service industry products were not part of the CU according to the Partnership Council Resolution. However, the negotiations concerning mutual compromises resulted in a covenant aiming to include agricultural products into the CU. A Free trade zone was established between Turkey and EU for the sales of products under the ECSC's scope. Turkey was officially recognized as EU candidate in December 1999 and the accession negotiations started on October 3, 2005. Turkey harmonized with the CCT rates for all industrial products in 2001, and Generalized Preferences System that covers the autonomous tariffs and concessions that the EU applies for developing and less developed countries on January 1, 2008 (Doğan and Kaya, 2011).

## **1.2. Effects of the Customs Union**

The CU between EU and Turkey affects companies in the micro level, and the general economic structure in the macro level. The positive and negative consequences of the CU on Turkey's economy are examined using static and dynamic effects. Under the assumption that parameters such as factor endowment, technological level and demand structure remain constant, the effects that arise due to the redistribution of resources inside the union are considered the static effects of the CU. In that regard, the trade creation and trade diversion effects are also considered static effects of the CU (Temiz, 2009: 117).

Trade creation effect arises when a more efficient (low-cost) country takes over the high-cost production due to the CU. The removal of tariffs and quotas between CU member states lowers the prices of trade goods. Thus, member states can generate more consumption from cheaper sources and the trade volume between countries increases since new trade is created within the union. Joining the union offers the opportunity of trade creation if the member country does not import the same goods from the nonmember countries before. After joining the custom union, the country starts importing the goods from other member countries that can produce the goods more efficiently and less costly with lowered or no tariffs rather than producing the goods domestically. Clearly, trade creation effect of customs union leads to greater efficiency and increased-welfare. Besides, effect on the exports of outsiders to the union is absent as there was no importing of the same goods from outsiders (Pala, 2011: 25).

Because of withdrawal of some tariffs on some imports, the formation of custom union changes the relative price in domestic markets of the member countries. The substantial effects of price changes are two- first, they may influence the world location of production in the several ways carefully analyzed by Viner. Secondly, they will have a parallel effect on the location of world consumption. It is a general expectation that union members increase the consumption of each other's products while reducing imports from the rest of the world. Changes of the first type will be classified under the general heading, *production effect of union*, while changes of second type as *consumption effect* of union. Importance goes to the fact that there will be some changes in patterns of consumption caused by custom union by changing the relative prices in the domestic markets of the member countries even if world production remains fixed. The consumption effect, therefore, may operate while there is no production effect (Lipsey, 1957: 40).

Trade diversion effect arises when the most efficient producer remains outside the CU and when the member states' imports from this country are internalized in the union. The consequence of this effect is a reduced trade volume with the countries outside the union (Viner, 1950). For the case of trade diversion, a country starts importing from another member country of the union after joining the union rather than importing from outsiders as it did since importing the same good from the member country is less costly with zero tariff between members though the outsider is producing the same good more efficiently. This leads to increased welfare of the union as the member country imports from another member country and has to export the same amount to the member country

in order to compensate for its imports. However, it causes a welfare loss in the outsider and hence in the world as the outsider cannot export the same goods to that country as it did before (Pala, 2011: 26).

The dynamic effects of the CU involve the structural changes caused by the market unification in medium and long term. Thus, they are stronger and more permanent than static effects. It is also expected that the dynamic effects of the CU between Turkey and EU will be stronger and more permanent than its static effects that will arise in the short term. The most important of the CU's dynamic effects is that it will establish the basic conditions that will increase the input of foreign capital and technology transfer to Turkey, provided that it is supported with suitable macroeconomic policies. The dynamic effects of the CU are scale economies effect, competition effect, technological development effect, capital effect through investment incentives, learning effect and polarization (concentration) effect (Atmaca, 1995: 26). Increased competition that occurs when a customs union is formed is the greatest dynamic benefit from the formation of a customs union and trade barriers among member nations are eliminated producers in each nation must become more efficient to meet the competition of other producers within the union, merge, or go out of the business. A second benefit which is likely to result from the enlarged market is the economies of scale. Stimulus to investment is another possible benefit to take benefits of the enlarged market and to meet the increased competition. Finally, better utilization of the economic resources of the entire community is the probable result because of free movement of labor and capital in a customs union (Salvatore, 2001).

The following Table 1 presents the foreign trade indicators between Turkey and EU before and after the EU-Turkey CU Agreement.

**Table 1: Turkey's Foreign Trade Indicators with the World and EU**

Year	Total Foreign Trade of Turkey (billion \$)			Turkey's Foreign Trade with European Union (billion \$)			EU's Share in Turkey's Foreign Trade (%)		Other Countries' Share in Turkey's Foreign Trade (%)	
	Export	Import	Ex/Im (%)	Export	Import	Ex/Im (%)	Exp	Imp	Exp	Imp
1980	2,913	7,667	38.1	1,595	3,079	51.8	54.7	40.2	45.3	59.8
1985	7,957	11,274	70.6	3,560	4,455	79.9	44.7	39.5	55.3	60.5
1990	13,384	23,147	57.8	7,596	10,492	72.4	56.7	45.3	43.3	54.7
1995	21,649	35,763	60.5	2,435	18,048	68.9	57.4	50.5	42.6	49.5
2000	27,774	54,502	50.9	15,688	28,552	54.9	56.4	52.4	43.6	47.6
2002	36,059	51,554	69.9	20,459	25,698	79.6	56.7	49.8	43.3	50.2
2004	63,016	97,340	64.8	36,642	48,112	76.2	58.1	49.4	41.9	50.6
2006	85,410	139,458	61.3	48,144	59,398	81.1	56.3	42.6	43.7	57.4
2008	132,027	201,963	65.4	63,723	74,909	85.1	48.2	37.1	51.8	62.9
2010	113,883	185,544	61.4	52,938	72,457	73.1	46.4	39.1	53.6	60.9
2012	152,461	236,545	64.5	59,402	87,658	67.7	38.9	37.1	61.1	62.9
2014	157,610	242,177	65.1	68,518	88,786	77.2	43.4	36.7	56.6	63.3
2015	143,844	207,235	69.4	64,005	78,685	81.3	44.4	37.9	55.6	62.1

**Source:** IMF-IFS (2016), <http://data.imf.org/?sk=7CB6619C-CF87-48DC-9443-2973E161ABEB>, Retrieved: 08/09/2016.

As evidenced by Table 1, the total exports of Turkey in 1980 was 2 billion 913 million dollars and its total imports were 7 billion 667 million dollars, while in 2015, the total exports were 143 billion 844 million dollars and its total imports were 207 billion 235 million dollars. In the 36 years, total exports increased by approximately 140 billion dollars, total imports increased by 200 billion dollars. While in 1980 the exports to imports ratio was 38.1%, this ratio increased to 69.4% in 2015. The total exports of Turkey to EU was 1 billion 595 million in 1980, which increased to 64 billion 5 million dollars in 2015. The total imports of Turkey from the EU in the same period increased from 3 billion 79 million dollars to 78 billion 685 million dollars. Accordingly, the exports to imports rate of Turkey's trade with the EU increased from 51.8% in 1980 to 81.3% in 2015. While 54.7% of Turkey's total exports were to EU countries in 1980, this ratio decreased to 44.4% in 2015. The interpretation of this may be that Turkey is looking towards other markets. While 40.2 % of Turkey's total imports were from EU countries in 1980, this ratio decreased to 37.9% in 2015. The exports and imports between Turkey and the EU increased considerably after the CU. Evaluation of the trade developments after 1995 shows that Turkey's exports to the EU increased constantly except the global crisis period of 2008, and 2015 year. Similarly, the goods imports of Turkey from EU constantly increased after the CU, except the global crises of 2001 and 2008, and 2015 year. The majority of Turkey's foreign trade was with the EU prior to the CU, and neither this trend, nor the trade of Turkey with other countries changed after the CU. The foreign trade data for the period after the CU indicate that the CU did not have



a trade diversion effect. Thus, it can be stated that the EU didn't cause a loss in the other foreign trade markets of Turkey.

## **2. THE LITERATURE REVIEW**

Many studies that examined the effects of CU on Turkey's economy from various perspectives were published after the establishment of the CU. In one of these studies, Erzan and Filiztekin (1997) examined the effects of CU on Small and Medium Business of Turkey (SMB) using panel data, showed that the CU caused many disadvantages for SMBs. The most negative consequences for the SMBs were the volatility of the currency exchange rates, inflation, wage increases and the imported input usage. Moreover, the changes in loan availability and changes in domestic and foreign demand negatively affected the added value growth rates of SMBs. Negative consequences that could arise in efficiency growth were only prevented because SMBs reduced their work force. The general results of the study indicate that the SMBs had problems harmonizing with the union *acquis* after the CU. Harrison et al. (1997) measured the effects of CU on Turkey's economy using a calculable general balance model for various parameters and concluded that the most important contribution of CU for Turkey was the increased access to third countries markets and that the CU contributed approximately 1-1.5% to Turkey's gross domestic product (GDP). The authors also concluded that due to the removal of tariffs under CU, Turkey lost approximately %1.4 of its GDP corresponding to its tariff revenues.

Akın and Arı (2007) examined the foreign trade data of Turkey before and after the CU and reached these conclusions: The majority of Turkey's foreign trade was with the EU prior to the CU, and neither this trend, nor the trade of Turkey with other countries changed after the CU. Thus, the CU does not have a trade diversion effect on Turkey. A significant increase was observed in the goods imported from EU to Turkey in the first two years following the establishment of the CU. This also indicates the effects of the CU on consumption. Moreover, the income was redistributed in favor of the industry sector in Turkey following the CU. This also indicates that the income was in favor of developed countries and against Turkey. Temiz (2009) analyzed the effects of the CU on the net exports of Turkey for the period between 1992:1-2007:3 using econometric models, suggested that although the trade volume of Turkey increased after the CU, its net exports decreased. The basic result that the author obtained, which was "CU affects the net exports of Turkey" empirically supports the condition that is observed in the foreign trade statistics of Turkey.

Nart (2010) examined the effects of CU on Turkey's foreign trade with the EU using panel data from 21 EU and 14 non-EU countries for the period between 1990-2007 and concluded that the CU has a trade creation effect. Another result of the study was that the CU did not cause a trade diversion effect for Turkey and didn't significantly affect the foreign trade with third countries. Doğan and Kaya (2011) attempted to show the changes in Turkey's foreign trade based on countries and chapters using Concentration Rate (CR) and Herfindahl index (H-1) methods, and concluded that a structural change

was observed in the exports to EU; however a structural change to reduce the independence from EU in imports couldn't be achieved. Demirci and Aydın (2011), while investigating the relative benefits and costs of customs union associated with common external tariff between Turkey and European Union, find that Turkey has been benefiting from the noticeable tariff liberalization as well as improved market conditions in line with EU since it ratified custom union with EU.

Çeştepe and Mıstaçoğlu (2012) analyzed the effects of the CU on direct foreign investors for countries that became members of the EU between 2004 and 2007, and for Turkey that became a CU with the EU in 1995 using static effects panel data method, concluded that the CU has a positive effect on foreign investment input to these countries. Terin et al. (2012) analyzed the probable effects of the CU on Turkey-EU agricultural products with the regression method using the time series for the period between 1982 and 2011, observed that the CU negatively affected the agricultural products foreign trade between Turkey and the EU. Thus, the agricultural product exports increased 8.8-fold compared to 1982, and the exports increased 36.6-fold. Thus, while the CU didn't cause a structural change in the agricultural products exports to EU, it did cause a structural change in agricultural products imports. Employing static analysis and Balassa index for the period 1995-2011 for examining the effects of European Union-Turkey Customs Union on Turkish foreign trade, the study of Bayar and Özekcioğlu (2014) found trade creation effect and there was no trade diversion effect of the Customs Union. Moreover Turkey increased its comparative advantage on 50 product classes and lost its comparative advantage on 17 product classes, while Turkey sustained its comparative advantage on 188 product classes relative to European Union after establishment of the Customs Union.

Without being a full member of the European Union, Turkey's participation to the Union raised some substantial and continued questions in Turkey about the economic results of a regional integration. Most of the empirical literature on the CU's effects on Turkey's economy emphasizes the positive consequences of the CU for Turkey's economy. The common point of the studies that cover various analysis methods and various periods is that the CU affects the development of foreign trade between Turkey and the EU. However, some argue that, particularly adoption of the Union's common external tariff regime would have a negative effect on Turkey's trade. This study aims to contribute to the empirical literature by investigating the effects of CU on the foreign trade development between Turkey and EU using the current data sets and appropriate analysis techniques.

### **3. METHODOLOGY AND EMPIRICAL FINDINGS**

This study examines the effects of the CU on the foreign trade between EU and Turkey for the period between 1980 and 2015 using the time series method. For this purpose, the export and import functions must be determined first. The variables used in the study are the export and import values between Turkey and EU, GDPs of Turkey and the EU, and the real effective exchange rates that reflect the relative values of Turkish

Lira and the European Common Currency (ECU). Statistics for the annual variables were obtained from the databases of IMF and OECD, and were converted to real values by taking their logarithms before being included in the analysis.

The export model used in this study shows the change in the exports of Turkey to EU countries based on exchange rates and the incomes of EU states. The import model also shows the change in the imports from EU countries based on exchange rates and Turkey's GDP. Main purpose of this study is to determine whether the CU affects the trade development between Turkey and the EU. The export model used for the study is as follows:

$$\ln X_t = c + \ln Y_{Euro_t} + \ln RER_t + dummy_t + u_t \quad (1)$$

$\ln X$  in Equation 1 indicates the export value of Turkey to EU,  $\ln Y_{Euro}$  is the total national income of EU countries.  $\ln RER$  is the real effective exchange rate that reflects the value of TL against ECU in the relevant period. The study model also uses a dummy variable to show the CU's effects on Turkey's exports. Accordingly, the dummy variable is set to 0 for the period before 1996, when the CU was established; and 1 for the period after. If the coefficient for this parameter is statistically significant at the end of the estimation, this will mean that the CU affects the foreign trade developments between Turkey and the EU. If the sign of the coefficient is positive, this will mean that the CU increases the foreign trade, and if it is negative, this will mean that it decreases it. According to the theoretical expectations, the incomes of EU countries are positively related to the exports. The income increase in EU countries is expected to create a positive effect on Turkey's exports. The effects of the real exchange rates that reflect the value of the Turkish Lira are also positive under certain circumstances. A valuable national currency causes effects that both decrease and increase the exports (under the assumption that the Marshall-Lerner condition is met ( $e_x + e_m > 1$ )). The increase in currency rates and the loss of value of the national currency will cause opposite results (Alkathlan, 2013). The import function used for the study is as follows:

$$\ln M_t = c + \ln Y_t + \ln RER_t + dummy_t + u_t \quad (2)$$

$\ln M$  in Equation 2 indicates the import value of Turkey from EU,  $\ln Y$  is the national income level of Turkey.  $\ln RER$  is the real effective exchange rate that reflects the value of TL against ECU in the relevant period. The study model also uses a dummy variable to show the CU's effects on Turkey's imports from the EU. Tariff rates on trade between Turkey and EU were used for incorporating dummy variable with analysis in the both export and import models. The parameter  $c$  is the constant term, and  $u_t$  is the error term. According to the theoretical expectations, the national income level of Turkey is positively related to the imports. The effects of the real exchange rates that reflect the value of the Turkish Lira on the imports are also negative under certain circumstances. A valuable national currency causes effects that both decrease and increase the exports (under the assumption that the Marshall-Lerner condition is met ( $e_x + e_m > 1$ )). The increase in currency rates and the loss of value of the national currency will cause opposite results (Alkathlan, 2013).

The analysis section of the study tests whether the data are stationary and the existence of short- or long-term relationships were investigated based on the obtained results. According to the analysis procedure, the integration degrees of series were determined using the Augmented Dickey Fuller (ADF) and Philips-Perron (PP) tests. According to the unit root test results, the stationarity of the series and their order of stationarity were determined. The unit test results for all variables are presented in Table 2.

**Table 2: Unit Root Test Results**

Variable		ADF		PP	
		Test sta.	P**	Test sta.	P**
$\ln Y$	Order	-0,085[0]	0.960	-0,251[4]	0.972
	1. Difference	-6,202[0]**	0.000	-6,363[4]**	0.000
$\ln Y_{Euro}$	Order	-1,258[0]	0.638	-1,242[2]	0.645
	1. Difference	-4,973[0]**	0.000	-4,976[1]**	0.000
$\ln RER$	Order	-1,835[0]	0.358	-1,816[1]	0.366
	1. Difference	-6,719[0]**	0.000	-6,688[1]**	0.000
$\ln X$	Order	-1,818[0]	0.366	-1,809[2]	0.369
	1. Difference	-6,719[0]**	0.000	-5,766[1]**	0.000
$\ln M$	Order	-1,107[0]	0.702	-1,158[2]	0.681
	1. Difference	-6,699[0]**	0.000	-6,759[2]**	0.000

**Note:** \*\* means that the statistics are meaningful at a 5% level. The values between brackets for ADF tests show the optimal lag length determined according to the Schwarz Information Criteria, and the values between brackets for the PP test show the bandwidth determined according to the Barnett Kernel predictor.

ADF and PP unit root test results suggest that all variables are first order stationary variables. This suggests that the variables may have a co-integration relation. The co-integration approach is an approach that prevents information loss and lack of solution due to differences in long term series. Therefore, cointegration techniques are considered appropriate to be used in the long term analysis. Although the series relating to economic variables are not stationary, cointegration analysis asserts that these series may have a stationary linear combination and that it can be determined econometrically (Astero and Hall, 2011). Optimal time lag length in VAR analysis performed for cointegration analysis has been found as 2 according to Akaike Information Criterion (AIC) for equation 1 and 2 (export and import models). Concerning the analyzed model, it is seen that there is no autocorrelation and changing variance problem (look at Table 3) and that the model meets the stability condition (adverse roots are in the unit circle).

**Table 3: Autocorrelation and Heteroscedasticity Test Results**

Models	Autocorrelation		Heteroscedasticity	
	Lags	Prob.	Chi-sq	Prob.
Export Model	1	0,804	175,529	0,222
	2	0,941		
Import Model	1	0,406	214,976	0,222
	2	0,771		

Number of cointegrated vectors are determined according to trace test and maximum eigen value test statistics. Cointegration test results for export and import models are shown in the Table 4 and 5 respectively.

**Table 4: Johansen Cointegration Test Results for Export Model**

Number of Cointegration	Trace Test			Maximum Eigen Test		
	Test Statistics	Critical Value (%5)	P**	Test Statistics	Critical Value (%5)	P**
$r=0$	113,121**	63,876	0,000	55,262**	32,118	0,000
$r\leq 1$	57,858**	42,915	0,000	34,404**	25,823	0,003
$r\leq 2$	23,454	25,872	0,097	12,862	19,387	0,339
$r\leq 3$	10,592	12,518	0,103	10,592	12,518	0,103

**Note:** \*\* shows that null hypothesis is rejected at the level of 5%, in other words the presence of cointegration relationship.

**Table 5: Johansen Cointegration Test Results for Import Model**

Number of Cointegration	Trace Test			Maximum Eigen Test		
	Test Statistics	Critical Value (%5)	P**	Test Statistics	Critical Value (%5)	P**
$r=0$	80,103**	63,876	0,001	33,195**	32,118	0,036
$r\leq 1$	46,908**	42,915	0,018	26,385**	25,823	0,042
$r\leq 2$	20,523	25,872	0,201	15,885	19,387	0,151
$r\leq 3$	4,637	12,519	0,649	4,637	12,518	0,649

**Note:** \*\* shows that null hypothesis is rejected at the level of 5%, in other words the presence of cointegration relationship

According to the Johansen co-integration test results, both export and import models show co-integration relation. Thus, it is observed that the CU has a meaningful and significant effect on Turkey's foreign trade relations with EU countries. After determining the long-term relationship using the co-integration method, an error correction model (VECM) was used to determine the existence of long-term deviations from balance and how close the deviations were to the mean in every period. The VECM analysis for both models resulted in a statistically meaningful error correction coefficient between zero and one which is negative (look at Table 6). This result indicates that a short-term instability will be fixed in the long term.

**Table 6: Vector Error Correction Test Results for Export and Import Models**

Export Model		Import Model	
Cointegrating Eq	CointEq1	Cointegrating Eq	CointEq1
LnX(-1)	1,000000	LnM(-1)	1,000000
LnRER(-1)	-0,905384 [-2,79019]	LnRER(-1)	0,939538 [4,14782]
LnY <sub>EURO</sub> (-1)	-1,116517 [-16,3048]	LnY(-1)	-1,396681 [-13,2607]
DUMY(-1)	-0,035448 [-2,86183]	DUMY(-1)	-0,037414 [-2,71846]
C	29,23585	C	6.386410
Error Correction: -0,786334 [-2,67427]		Error Correction: -0,412009 [-2,29359]	

**Note:** The values between brackets show probability values.

The normalized co-integration equations for export and import models are as follows:

$$\ln X = 1,116 \ln Y_{Euro} + 0,905 \ln RER + 0,035 \text{ Dummy} \quad (3)$$

$$\ln M = 1,396 \ln Y - 0,939 \ln RER + 0,037 \text{ Dummy} \quad (4)$$

The normalized co-integration equations obtained from the co-integration analyses of export and import models indicate that the CU positively affects both the exports and the imports. Accordingly, Turkey's exports to EU and its imports from EU increased after the CU. However, examination of parameter coefficients shows that this positive effect of the CU is fairly weak. It is estimated that while the increasing effect of Customs Union on Turkey's export to EU is 0,035 percent, the increasing effect of Customs Union on Turkey's import from EU is 0,037 percent. These results indicate that Customs Union is not a strong channel to affect the net exports between Turkey and EU. While one percent increase in national income of EU enhances exports to EU by 1,116 percent, same increase in national income of Turkey enhances imports by 1,396 percent. In a similar way, a one percent increase in real effective exchange rate raises exports by 0,905 percent while decreases imports by 0,939 percent. This can be interpreted as Marshall-Lerner condition regarding trade between Turkey and EU is valid for the period considered. The results obtained are parallel with the findings of Harrison et al. (1997), Demirci and Aydın (2011) and Bayar and Özekcioğlu (2014).

## CONCLUSION

Financial liberalization together with the globalization led countries to constitute economic integration in form of preferential trading area, free trade zone and customs union especially since 1980s. EU, which has been at the stage of Economic and

Monetary Union, is one of the biggest and most advanced economic integration models in the world. The establishment of a Customs Union with the EU, which is a serious partner of Turkey's foreign trade, and with which Turkey is in intense relations in terms of foreign investments, tourism movements and worker money transfers can be considered an extension of existing relations and geographical proximity. The Customs union is the most comprehensive trade partnership that Turkey executed in line with its goal of full membership to the EU and the outward-oriented growth strategy of Turkey. Without being a full member of the EU, Turkey's participation to the CU raised some substantial and continued questions in Turkey about the economic results of a regional integration. Some argue that, particularly adoption of the Union's common external tariff regime would have a negative effect on Turkey's trade.

This study analyses the effects of the CU on the foreign trade between EU and Turkey for the period between 1980 and 2015. The main purpose of the study is to identify the trade creation and trade diversion effects of CU, from Turkey's perspective. For this purpose, the selected export and import models were estimated by using various analysis methods based on time series analysis. According to the co-integration test results of the export and import models, CU positively affects the both Turkey's exports to the EU and its imports from EU. However, the smallness of the parameter coefficients may be interpreted to indicate that the CU's positive effect is not strong. The overall results of the study show that the CU has a trade creation effect; however this effect is very limited. Examination of the market share of Turkey's total exports after joining the CU shows that the decrease of EU's share and the increase of the exports to different markets is an indicator of the fact that CU is not a trade diversion effect for Turkey (look at Table 1). In the context of these results, it is possible to mention that Customs Union has a positive impact on Turkey's foreign trade. On the other hand, some products are still exposed to imposition of tariff which is disadvantageous for Turkey. Thus, lifting the tariff barriers on these products could improve foreign trade gains associated with Customs Union.

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