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**THE LINK BETWEEN THE TURKISH EMIGRANTS AND
THE TURKISH TRADE IN EUROPE**

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First Draft

Abstract

This paper examines the link between emigration and trade, focusing on Turkey as a “sending” country and the selected trading partners, Germany, Austria, Belgium, Denmark, Finland, France, Germany, Holland, Italy, Norway, Spain, Sweden, Switzerland and the UK, as the “host” countries in Europe. The investigation methodology involves the fixed effect panel data analysis, and the estimation technique is the Least Squares under the assumption of the presence of cross section heteroskedasticity and the robust standard errors for the period 1980 to 2007. The sample period 1996-2007 explain the impact of the 1995 December Customs Union agreement between Turkey and EU. It has been found that emigrants have significantly positive effect on trade through the preference and network channels.

JEL Classification: C23, F14, F22

Keywords: Migration, Trade, Panel data, Dynamic models, Turkey.

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1. Introduction

Turkey has served as an active centre for population movements in and out of the area due to its political and historical position. After 1960 Turkey became a “sending country” in terms of international labour migration flow. Subsequently family reunification became major channels of out-migration from Turkey. Recently, nearly four million Turkish citizens are living in Europe. It is estimated that, in average, Turkish migrants contribute to Turkish economy by sending remittances of 2 to 3 million dollars per year.

In the literature, there are significant studies about the Turkish migration experience. These studies are mainly focused on savings, remittances, transit migration, circular migration, asylum and refugee policies, and irregular migration. However, there is not any study –according to our knowledge- on the crucial role of Turkish emigrants on the growing volume of the trade between Turkey and the European countries.

In this study, we investigate the link between emigration and trade, focusing on Turkey as a “sending” country and specific trading partners (Germany, Austria, Belgium, Denmark, Finland, France, Germany, Holland, Italy, Norway, Spain, Sweden, Switzerland and the UK) as the “host” countries in Europe. The investigation methodology involves the fixed effect panel data analysis, and the estimation technique is Least Squares under the assumption of the presence of cross section heteroskedasticity and the robust standard errors for the period 1980 to 2007. The impact of the 1995 December Customs Union agreement on the trade flows between Turkey and EU has also been examined separately.

The expected contributions of this paper are: First, it verifies the significance of emigration on trade concerning the “sending” country perspective rather than “receiving” country. Second, it tracks the importance of the Turkish emigrants in the dynamic trade process in connection with the “home bias” and “network” effects. The data show that Turkey exports to these countries mainly consumption goods, intermediary goods and capital goods; however imports mostly intermediate goods, capital goods and consumption goods, respectively.

The main findings of the paper are: Emigration increases the exports and imports from Turkey to Europe, and supports both the preference and network channel hypotheses. Turkish trade increases nearly proportionately with the size of the economies. The real exchange rate has negative effects on both exports and imports.

The paper is structured as follows: The second section gives a short literature survey on migration and trade relationship. The third section presents the empirical analysis with model description, methodology, and estimation results. The last section gives the conclusion.

2. Literature Review

In this section, the literature on trade and migration relations will be discussed. Greater emphasis could be given to the study of Gould (1991), in which he investigated how immigrant ties to the home country can play a role in creating bilateral trade linkages. According to this point, his main question in his paper was: “*Do immigrant links to the home country enhance bilateral trade flows between the home and host countries?*”¹ In his study, Gould utilized Bilateral Trade Model and Gravity Equation between the US and Canada from 1970 to 1986. He stated in his study that the negative relationship on imports and positive relationship on exports suggests a possible time lag in the integration of immigrant links into the host country. Furthermore, he concluded that exports appear to be influenced most by immigrant links, while imports are influenced the least.

Helliwell (1997) examined the trade and migration link between OECD countries, Canada and the US. Moreover, he stated in his article that Canadian Provinces and US states show interprovincial trade in 1988-1990 to have been more than twenty times as dense as that between provinces and states, with some evidence of a downward trend since, due to the post-FTA growth in trade between Canada and US.² Furthermore he utilized census based gravity model between 1988 and 1992 and found out that *border effects for migration show interprovincial migration among provinces outside Quebec, to be almost 100 times as likely as migration to these provinces from the US.*³

S. Girma and Z. Yu (2000) examined the link between immigration and trade. The main idea was to investigate the robustness of the immigrant-link effect using UK data, and second to identify a

¹ Gould, David M. *Immigrant Links to the home country: empirical implications for US and CANADIAN bilateral trade flows*, Federal Research Bank of Dallas, March 1991

²Helliwell, John F. *National Borders, Trade and Migration*, National Bureau of Economic Research, 1997

³ Ibid

possible mechanism behind such linkage.⁴ In their research, they used an augmented gravity approach between 1981 and 1993 and found a positive connection between immigration and trade. Therefore, they concluded as such, “the econometric evidence seems to suggest that immigration enhance bilateral trade through the knowledge (brought by immigrants) about foreign markets and different social institutions rather than their business connections or personal contacts with their home countries” (ref, page?)

Bruder’s study (2004) questions what effects on trade between two countries arise if there is an observable immigration of labour. In addition, he used data on Germany, Spain, Portugal, Greece, Italy and Turkey between 1970 and 1998. Moreover he utilized augmented Dickey-Fuller and the Philips-Perron tests with cointegration analysis. From these points, he concluded in his study by stating that the results indicate that in the case of Germany, trade reduces labour migration significantly.⁵

In Bacarezza, Javier and Laura (2006), the impact of migration on foreign trade in a relatively closed small economy was tested.⁶ Furthermore, in that paper, a traditional gravity model was utilized for Bolivia between 1990 and 2003 and the estimation results confirmed the existence of a statistically significant positive effect of both immigration and emigration on trade flows in a relatively closed economy of Bolivia.

White (2007) studied US immigrant-trade link which he believed to be driven by immigration from relatively low income countries. In his study, White utilized a data from 1980 to 2001 on US and 73 trading partners using gravity equation. According to his study, he concluded that “immigration is a significant determinant of US-home country trade, with network effects and transplanted home bias both displayed.”⁷ Besides this, there is another research by White in which he investigated possible positive links between immigration and aggregate Danish imports from and exports to immigrants’ respective home countries.⁸ In that study, he utilized Tobit specification on a data of Denmark and her 170 trading partners between 1980 and 2000. As a

⁴ S. Girma and Z. Yu, The Link Between Immigration and Trade: Evidence from the UK, Center for Research on Globalization and Labour Markets, Research Paper 2000/23

⁵ Bruder, Jana. Are Trade and Migration Substitutes or Complements? – The Case of Germany, 1970-1988, 2004

⁶ Bacarreza, Canavire, Javier, Gustavo and Laura, Ehrlich, *The Impact of Migration on Foreign Trade: A Developing Country Approach*, MPRA Paper No: 1090

⁷ White, Roger. *Immigrant-trade links, transplanted home bias and network effects*, Applied Economics, 2007, 39, 839-852

⁸ White, Roger. *An Examination of the Danish Immigrant-Trade Link*, Blackwell Publishing, 2007

conclusion of his study, he found out that immigration exerts a positive influence on aggregate Danish imports from and exports to immigrants' respective home countries.⁹

Qian (2007) investigated the impacts of New Zealand immigrants on trade considering the home bias and network effects. Moreover, in that study, New Zealand and 190 trading partners were investigated between 1990 and 2005 by gravity model. As a conclusion, it was found out that newly-arrived immigrants from low-income countries and from different cultural backgrounds tend to create more trade than other groups; therefore, the results will also point to the conclusion that the combined impact of immigrants and visa-holders strongly enhances export trade.¹⁰

Ivanov (2008) investigated intermediary effect of migrants on trade using the data for Germany on immigrant labour market involvement, to disentangle alternative explanations for the correlation between migration and trade using censuses of 1996, 1997 and 1998 by utilizing a gravity model on Germany and their trading partners. According to that study it has been found out that while complex goods attract a stronger immigrant effect, the self-employed immigrants as a group have similar or lower influence on exports than blue-collar workers, most likely because large proportion of self-employed immigrants work in non-exporting service industries.¹¹

Faustino and Leitao (2008) have examined Portugal and the EU15 in order to find a relation between immigration and Portuguese bilateral trade.¹² In their research they utilized a static and dynamic panel data analysis and gravity model between 1995 and 2003. As a result, they stated in their article that immigration leads to the reduction of trade transaction costs, and increases all types of intra-industry trade, as well as exports and imports.

Blanes, Martin-Montaner (2008) investigated 17 Spanish regions and 83 partner countries. Moreover, they stated in their study that, "immigration can influence trade flows through two basic channels: first, immigrants bring with them a preference for home-country products and, second, immigration can reduce trading transaction costs." Furthermore, they utilized an augmented gravity equation between 1996 and 2004. Their study suggested as a conclusion that the dummies for the partner countries belonging to the European Union or having Spanish as

⁹ Ibid

¹⁰ Qian, Mingming, *Economic Relationship between Trade and Immigration in New Zealand*, Massey University Research Report, 2007

¹¹ Ivanov, Andrey V., *Informational effects of migration on trade*, CDSE Discussion Paper no. 42, 2008

¹² Horácio C. Faustino, and Nuno Carlos Leitão, *Immigration and Trade in Portugal: A Static and Dynamic Panel Data Analysis*, Technical University of Lisbon Working Paper, 2008

official language are always significant, although the former displays a surprising negative effect in the case of total exports and manufactures. With regard to the number of foreigner in each region, they have a positive effect in all cases but in agriculture.¹³

Law, Genc and Bryant (2009) have studied New Zealand with the trading partners to investigate whether migration does stimulate trade. Furthermore, they have utilized a gravity model for the period 1981-2006 and found out that the estimated coefficient on migrants implies that on average a 1% increase in the stock of migrants from a given country would result in an increase in exports to that country of around 0.06% which suggests migration stimulate trade.¹⁴

In the Foad (2009) paper, he investigated how migration affects trade by looking at two groups of migrants: those moving from the Middle East and North Africa (MENA) to the European Union and those moving to North America.¹⁵ Therefore, he stated that migration leads to the formation of social networks across borders, driving down trade costs, on the other hand, immigrants may retain a preference for their native country's products, creating a local market for exports. It is found that that the migration and trade link is stronger for migrants to Europe, with the strongest effect on imports, furthermore the migration and trade link is stronger for differentiated goods than for homogeneous goods, and strongest for differentiated goods imports into Europe.

3. Empirical Analysis

3.1. Model Description:

In this paper the link between trade and emigration has been analyzed using annual data for the period 1980-2007. The empirical analysis is based on the conjecture that Turkish emigrants in Europe could enhance Turkish trade; promote both exports and/or imports through the preference and/or network effects. In this research, the analysis is based on the trade flows of Turkey as the home country with the 13 selected European countries as the host country. Thus, the research question is: “What could be the impacts of Turkish emigrants on the exports and imports of Turkey with the 13 European countries where they live.”

¹³ Blanes, José V., Martín-Montaner, Joan A., Serrano, Guadalupe, *The link between immigration and trade in the Spanish regions*, 2008.

¹⁴ David Law, Murat Genç, John Bryant, *Trade, Diaspora and Migration to New Zealand*, NZIER 50th Anniversary Research Award, 2009.

¹⁵ Foad, Hisham. *Middle Eastern Assimilation, Migration and Trade to Europe and North America*, San Diego State University, 2009.

Table.1: The expected results in relation to the trade literature		
The relationship	Expected sign on the coefficient	Reason
Total Trade and Migration	(+) and significant	Emigrants of a country promote bilateral trade between home and host countries through preference and network effects.
Total Exports and Migration	(+) and significant	The home biased preferences of the Turkish emigrants could affect exports positively.
Total Imports and Migration	(+) and significant	The imports of Turkey could be affected through the network effects.
Type of the exported goods and Migration	(+) and significant	Turkish emigrants could have a greater positive impact on the home country exports of consumption goods than the exports of intermediary and capital goods.
Type of the imported good and Migration	(+) and significant	The strong network effects of the Turkish emigrant with the home country could increase the import of different goods of Turkey.
Trade and Nominal Gross Domestic Product	(+) and significant	Measures the size of the economy and reflects the export supply and the import demand of a country. Thus the amount of trade must increase with the size of the economy.
Trade and Real Exchange Rate	(+) and significant	RER index affects the trade performance of a country depending on the fixed or flexible regimes and also the volatility of RER.
Exports and Real Exchange Rate	(-) and significant	An increase in the RER index means appreciation of the domestic currency. Thus increase the cost of exports.
Imports and Real Exchange Rate	(+) and significant	An appreciation of the domestic country decreases the cost of imports.
Lagged value of Trade	Less than 1	Measures the persistence in trade. A stable dynamic relationship requires being less than 1.

3.2. Data and Methodology

Trade data (exports and imports), in US dollar, have been obtained from the Turkish Statistical Institute (TUIK)¹⁶. Real Exchange rate series defined as the CPI based Real Effective Exchange rate index have been obtained from Central Bank of Turkish Republic (CBRT)¹⁷. Nominal Gross Domestic Product measured in US \$ and obtained from the OECD data base.

Migration data, defined as the stock of Turkish population in the host country, has been compiled from OECD database starting from 1990 to 2007, and from Consortium for Applied Research on

¹⁶ <http://www.turkstat.gov.tr>

¹⁷ CPI based real effective exchange rate index calculated using the IMF weights for 19 countries including Germany, USA, Italy, France, United Kingdom, Japan, Netherlands, Belgium, Switzerland, Austria, Spain, Canada, Korea, Sweden, Taiwan, Iran, Brazil, China and Greece. (1995=100). An increase in the index denotes an appreciation of the Turkish Lira.

International Migration (CARIM) and International Labour Migration Statistics (ILO) and Bulutay (1995)¹⁸ from 1980 to 1990.

The paper analyzes the link between emigration and the Turkish bilateral trade flows with 13 European countries, Austria, Belgium, Denmark, Finland, France, Germany, Italy, Holland, Norway, Spain, Sweden, Switzerland and United Kingdom and examines the impacts of Turkish emigrants in these countries on trade. The trade function has been estimated in three sets of models and three different sample periods. First, total trade, total exports and total imports of Turkey; second, exports of consumption goods, capital goods and intermediary goods; and third, imports of consumption goods, capital goods, and intermediary goods have been estimated in order to test the impact of emigration on the Turkish trade flows.

The trade models for Turkey have been analyzed in three sets of models are:

$$LTT_{i,t} = f_1[LMIGTUR_{i,t-1}, LGDPEU_{it}, LGDPTR_t, LRER_t, LTT_{i,t-1}]$$

$$LTX_{i,t} = f_2[LMIGTUR_{i,t-1}, LGDPEU_{it}, LRER_t, LTX_{i,t-1}]$$

$$LTM_{i,t} = f_3[LMIGTUR_{i,t-1}, LGDPTR_t, LRER_t, LTM_{i,t-1}]$$

$$LX_{i,k,t} = f_4[LMIGTUR_{i,t-1}, LGDPEU_{it}, LRER_t, LX_{i,k,t-1}]$$

$$LM_{i,k,t} = f_5[LMIGTUR_{i,t-1}, LGDPTR_t, LRER_t, LM_{i,k,t-1}]$$

Where **k**=consumption goods, capital goods, intermediary goods; **i**= AUST, BEL, DEN, FIN, FR, GER, HOL, ITA, NOR, SPA, SWE, SWTZ, UK.

List of Variables:

$LTT_{i,t}$: Total trade flows of Turkey with the country *i* in US\$.

$LTT_{i,t-1}$: First lagged value of bilateral total trade flows of Turkey with the country *i* in US\$.

$LTX_{i,t}$: Total exports of Turkey to the country *i* in US\$.

$LTX_{i,t-1}$: First lagged value bilateral total exports of Turkey to the country *i* in US\$.

$LTM_{i,t}$: Total imports of Turkey from country *i* in US\$.

$LTM_{i,t-1}$: First lagged value bilateral total imports of Turkey from the country *i*.

$LX_{i,k,t}$: Exports of Turkey to the country *i* in US\$.

$LX_{i,k,t-1}$: First lagged value of Turkish Exports to the country *i* in US\$.

¹⁸ <http://www.carim.org> and <http://laborsta.ilo.org>, Tuncer Bulutay, *Employment unemployment and Wages in Turkey*, International Labor Organization and State Institute of Statistics, Ankara, 1995.

$LM_{i,k,t}$: Imports of Turkey from the country i in US\$. .

$LM_{i,k,t-1}$: First lagged value of Turkish imports from the country i .

$LMIGTUR_{i,t}$: Stock of Turkish emigrants in the country i .

$LGDPEU_{it}$: Nominal GDP of the country i in US \$.

$LGDPTR_t$: Nominal GDP of Turkey in US \$.

$LRER_t$: Consumer price index real effective exchange rate of Turkish Lira..

where t denotes time and the index k refers to the type of goods. The index i refer to the particular European country. L denotes the log forms.

The models are the fixed effects models since the main interest is on estimating trade flows between Turkey and the 13 pre-selected European countries. All the variables are used in logarithms. The models are estimated by the Least Squares method for the entire period 1980-2007 and for 1996-2007 with the purpose of analyzing the effect of the Customs Union between Turkey and EU countries, started in December 1995. All models include the lagged values of the dependent variable and a linear trend to reduce/eliminate serial correlation. The estimated models do not include distance variable as in the gravity models since the geographical distance between Turkey and the trading partners is short enough.

It is expected that Turkish emigrants stimulate Turkish trade by demanding home country products and/or participate in international networks to enhance Turkish trade with Europe. Nominal GDP is a proxy for the size of the economy. Since the nominal GDP variable reflects the export supply and imports demand of a country better than the PPP based GDP, this variable has been used in this analysis. It is assumed that if the coefficient on the nominal GDP is significantly positive and less than one, trade increases with country's size, but less than proportionately. This coefficient measures the income elasticity of trade, exports and imports. It is assumed that real exchange rate has a negative relationship with exports, but positive relation with imports since an increase in LRER reflects the appreciation of the Turkish Lira.

3.3. Estimation Results

This empirical study examines the impacts of Turkish emigrants on the Turkish trade performance with Austria, Belgium, Denmark, Finland, France, Germany, Italy, Holland, Norway, Spain, Sweden, Switzerland and United Kingdom through nine different specifications across the two sample periods.

The availability data on the stock of Turkish population in these countries is the only restriction in this research¹⁹. All the estimation results have been reported in Table.1 to Table.9 in appendix. Bold and italic values show the significant variables at the 5% and 10% levels. P values are given in parenthesis. \bar{R}^2 , DW and F statistics with the total unbalanced panel observations and the number of cross sections are also reported for the each specification. This analysis covers two different estimation periods in order to describe the effects of the Turkish emigrants on the bilateral trade flows of Turkey after the Customs Union agreement.

Fixed effects dynamic panel estimation results are generally in line with the expectations. All the estimated models satisfy the normality assumption of residuals and reduce/eliminate the serial correlation problem using lagged variables and a linear trend. In addition, all of the models satisfy the stability condition, having a coefficient less than one on the lagged dependent variables. Positive sign on the estimated trend coefficient show the increasing tendency of trade/exports/imports over time.

Starting with the main motivation of this paper, it has been found that emigration has a statistically significant and positive effect on total trade as reported in Table.1. In addition, the results in tables 2, 4 to 6 support the exports enlarging effect of the Turkish emigrants. Focusing on the whole period 1980-2007, the elasticity coefficients of migration show that 10% increase in the stock of Turkish population would increase total trade by 0.84% and total exports 0.77%. In addition, 10% increase in the stock of Turkish emigrants would increase imports by 1.16%, but exports 1.01% after 1996. Accordingly, the elasticity of imports is higher than of exports revealing that the knowledge of Turkish emigrants about market has a stronger impact on Turkish trade than their home biased preferences.

Further examination of exports and imports in relation to the type of traded goods could explain the mechanism between Turkish emigrants and Turkish trade. Turkish emigrants have significantly positive effect on exports of capital and intermediary goods during the 1980-2007 periods, but on exports of consumption goods after 1996. The export elasticity coefficients are significant and larger during the 1980-2007 periods. On the other hand, the emigrants have

¹⁹ The compiled data on the stock of Turkish population is available during the period 1980-2007 for BEL, DEN, GER, HOL, SWE, and SWTZ. Data is available for FR during the period 1980-2000, 2004-2007; for FIN, ITA, NOR, the UK during 1990-2007; and for AVUST during 1989-2007; and for SPA during 1998-2007.

significantly positive effects on imports of capital goods after 1996, but on imports of intermediary goods during the whole period, as reported in tables 3 and 7 to 9. So, a 10% increase in stock of emigrants would increase capital goods by 2.06 % and intermediary goods by 0.68 %. The elasticity of imports of capital goods is higher than the elasticity of exports of capital goods. Therefore, these results support both the preference for home country products and the network hypotheses for the Turkish emigrants in Europe.

The estimated coefficients on nominal GDP confirm the trade potential with the European countries, mainly after 1996. In Table.1, the European countries income elasticity of trade is significantly positive and higher than the Turkish income elasticity after 1996. As reported in tables 2, 4 to 6, the European countries income elasticity of exports are statistically significant and less than one for consumption and intermediary goods, but it is higher than 1 for capital goods after 1996. In tables 3, 7-9, Turkish income elasticity of imports is around one and in general above the European income elasticity of imports. Therefore, Turkish trade increases more or less proportionately with the size of the economies on average.

The estimation results reveal that exchange rate has significantly negative effects on total exports during 1996-2007, and on total imports during 1980-2007. There is a negative effect on exports of consumption and capital goods, but the real exchange rate has an insignificant effect on the exports of intermediary goods after 1996. It has negative effect on imports of consumption and capital goods during the whole period, but on imports of intermediary goods after 1996. Although these results give conflicting evidence with the expectations on imports; however, this is not a surprising result for the Turkish economy. The reason is as follows: Starting from 1980 liberalization process, exchange rate was one of the most important instruments used in order to promote exports of Turkey. In addition, many restrictions such as custom duties and number of commodities subject to tariffs were reduced particularly on imports of raw materials and intermediate goods. On the other hand, since the beginning of 1990s, mainly after the 1989 capital liberalization, the policy shift from exports promotion to capital inflow promotion brought about the appreciation of the Turkish Lira and decreased the cost of imports. However, during this period, both the Turkish exports and imports have still continued to increase. Turkish producers have changed the direction of import driven production from domestic market to foreign market during the currency crisis. In addition, after 1996, The Customs Union agreement contributed to the Turkish industries to strengthen their positions in European markets. These facts resulted in

the increasing import dependency of Turkish exports²⁰ and weakened the relationship of the Turkish exports and imports with real exchange rate.

4. Conclusion

This study investigates the link between emigration and trade, focusing on Turkey as a “sending” country and specific trading European partners, namely Germany, Austria, Belgium, Denmark, Finland, France, Germany, Holland, Italy, Norway, Spain, Sweden, Switzerland and the UK, as the receiving countries in Europe. The fixed effect panel data analysis and the Least Squares method have been used under the assumption of the presence of cross section heteroskedasticity and the robust standard errors for the period 1980 to 2007. In addition, the effect of the 1995 December Customs Union on trade between Turkey and EU has been examined through the 1996-2007 period.

The expected contributions of this paper are: First, it verifies the significance of emigration on trade concerning the “sending” country perspective rather than “receiving” country. Second, it tracks the importance of the Turkish emigrants in the dynamic trade process in connection with the “home bias” and “network” effects. The trade figures illustrate that Turkey exports to the European partners mainly consumption goods, intermediary goods and capital goods; whereas imports mostly intermediate goods, capital goods and consumption goods, respectively. In addition, a large amount of imported goods are used for producing either domestic consumption goods or exporting by the Turkish industries.

It has been found that: (1) Emigration increases the Turkish exports and imports with Europe, and supports both the preference channel and network channel hypotheses. Turkish emigrants have positive impacts on the Turkish exports of intermediary and capital goods through the first channel; whereas they have positive impacts on the Turkish imports of intermediary and capital goods through the second channel. (2) The estimated coefficients on income elasticity display that, on average, Turkish trade increases more or less proportionately with the size of the economies. From the highest to lowest order of the exported goods to the selected European countries are the consumption, intermediary, and capital goods. The income elasticity of exports coefficient is the

²⁰ There is a negative and stronger correlation between the real exchange rate and exports to (and imports from) these Europe countries during 1980–1999. However, the correlation coefficients turn into positive and decrease after 2000.

highest on capital goods and lowest on the consumption goods. On the other hand, the order of the imported goods from these countries is intermediary, capital, and consumption goods. The income elasticity of import coefficient is the highest on capital goods, then on intermediary and consumption goods. (3) The real exchange rate has negative effects on both exports and imports. This could be explained by the high imports dependency of exports in Turkey mainly after 1989 capital liberalisation.

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APPENDIX

Dependent Variable	1980-2007		1996 - 2007		
	LTT	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
C		7.623	1.490 (0.00)	9.147	1.136 (0.00)
LMIGTUR		0.084	0.311 (0.07)	0.125	0.051 (0.02)
LGDPEU		0.040	0.097 (0.68)	0.605	0.136 (0.00)
LGDPTR		0.381	0.093 (0.00)	0.230	0.091 (0.01)
LRER		-0.095	0.096 (0.32)	0.116	0.145 (0.42)
LTT(-1)		0.512	0.076 (0.00)	0.271	0.079 (0.00)
Trend		0.029	0.001 (0.00)	0.023	0.006 (0.00)
\bar{R}^2		0.988		0.990	
DW statistic		1.669		1.577	
F statistic		1403.80		865.95	
N		294		152	
Cross Sections		13		13	

Dependent Variable	1980-2007		1996 - 2007		
	LTX	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
C		2.5462	0.543 (0.00)	4.259	0.662 (0.00)
LMIGTUR		0.077	0.032 (0.02)	0.101	0.041 (0.02)
LGDPEU		0.075	0.074 (0.31)	0.437	0.084 (0.00)
LRER		0.031	0.036 (0.39)	-0.297	0.068 (0.00)
LTX(-1)		0.817	0.045 (0.00)	0.670	0.065 (0.00)
Trend		0.018	0.005 (0.00)	0.044	0.006 (0.00)
\bar{R}^2		0.989		0.995	
DW statistic		1.913		2.025	
F statistic		1679.66		1840.49	
N		294		152	
Cross Sections		13		13	

Table.3: Total Imports_ FEM					
Dependent Variable	1980-2007		1996 - 2007		
	LTM	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
C		<i>9.881</i>	<i>1.538 (0.00)</i>	<i>12.182</i>	<i>1.8655 (0.00)</i>
LMIGTUR		0.056	0.042 (0.19)	<i>0.116</i>	<i>0.071 (0.10)</i>
LGDPTR		<i>0.596</i>	<i>0.067 (0.00)</i>	<i>0.683</i>	<i>0.103 (0.00)</i>
LRER		<i>-0.215</i>	<i>0.107 (0.04)</i>	-0.018	0.210 (0.93)
LTM(-1)		<i>0.375</i>	<i>0.073 (0.00)</i>	<i>0.205</i>	<i>0.104 (0.05)</i>
Trend		<i>0.032</i>	<i>0.001 (0.00)</i>	0.016	0.011 (0.13)
\bar{R}^2		<i>0.981</i>		<i>0.981</i>	
DW statistic		<i>1.681</i>		<i>1.432</i>	
F statistic		<i>926.71</i>		<i>470.60</i>	
N		294		152	
Cross Sections		13		13	

Table.4: Exports of Consumption Goods_ FEM					
Dependent Variable	1980-2007		1996 - 2007		
	LXCONS	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
C		<i>2.091</i>	<i>0.630 (0.00)</i>	<i>3.6258</i>	<i>0.457 (0.00)</i>
LMIGTUR		0.044	0.039 (0.26)	<i>0.151</i>	<i>0.059 (0.01)</i>
LGDPEU		0.083	0.080 (0.28)	<i>0.258</i>	<i>0.073 (0.00)</i>
LRER		-0.029	0.053 (0.59)	<i>-0.395</i>	<i>0.079 (0.00)</i>
LXCONS(-1)		<i>0.862</i>	<i>0.042 (0.00)</i>	<i>0.772</i>	<i>0.055 (0.00)</i>
Trend		<i>0.010</i>	<i>0.006 (0.06)</i>	<i>0.037</i>	<i>0.005 (0.00)</i>
\bar{R}^2		0.986		0.993	
DW statistic		2.073		1.929	
F statistic		1272.78		1251.50	
N		294		152	
Cross Sections		13		13	

Table.5: Exports of Capital Goods_ FEM					
Dependent Variable	1980-2007		1996 - 2007		
	LXCAPT	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
C		3.248	1.792 (0.07)	5.227	2.1822 (0.02)
LMIGTUR		0.124	0.064 (0.05)	0.084	0.085 (0.32)
LGDPEU		0.894	0.311 (0.00)	1.350	0.287 (0.00)
LRER		-0.274	0.290 (0.34)	-1.302	0.340 (0.00)
LXCAPT(-1)		0.402	0.067 (0.07)	0.328	0.056 (0.00)
Trend		0.122	0.020 (0.00)	0.196	0.025 (0.00)
\bar{R}^2		0.942		0.965	
DW statistic		1.953		2.035	
F statistic		276.37		249.40	
N		287		152	
Cross Sections		13		13	

Table.6: Exports of Intermediary Goods_ FEM					
Dependent Variable	1980-2007		1996 - 2007		
	LXINTER	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
C		5.335	0.791 (0.00)	3.465	1.041 (0.00)
LMIGTUR		0.139	0.034 (0.00)	0.009	0.034 (0.79)
LGDPEU		0.179	0.072 (0.01)	0.504	0.064 (0.00)
LRER		0.145	0.061 (0.02)	0.119	0.076 (0.12)
LXINTER(-1)		0.565	0.056 (0.00)	0.592	0.078 (0.00)
Trend		0.034	0.005 (0.00)	0.032	0.0007 (0.00)
\bar{R}^2		0.982		0.994	
DW statistic		1.956		2.146	
F statistic		990.65		1584.24	
N		294		152	
Cross Sections		13		13	

Dependent Variable	1980-2007		1996 - 2007	
	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
LMCONS				
C	<i>8.090</i>	<i>0.887 (0.00)</i>	<i>8.473</i>	<i>1.359 (0.00)</i>
LMIGTUR	0.008	0.084 (0.93)	-0.092	0.083 (0.27)
LGDPTR	<i>0.534</i>	<i>0.107 (0.00)</i>	<i>0.523</i>	<i>0.145 (0.00)</i>
LRER	<i>-0.285</i>	<i>0.091 (0.00)</i>	0.167	0.223 (0.45)
LMCONS(-1)	<i>0.407</i>	<i>0.043 (0.00)</i>	<i>0.329</i>	<i>0.079 (0.00)</i>
Trend	<i>0.062</i>	<i>0.010 (0.00)</i>	<i>0.031</i>	<i>0.016 (0.05)</i>
\bar{R}^2	0.963		0.978	
DW statistic	1.729		1.437	
F statistic	459.77		402.25	
N	294		152	
Cross Sections	13		13	

Dependent Variable	1980-2007		1996 - 2007	
	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
LMCAPT				
C	<i>11.223</i>	<i>1.896 (0.00)</i>	<i>11.485</i>	<i>1.652 (0.00)</i>
LMIGTUR	-0.011	0.065 (0.87)	<i>0.206</i>	<i>0.103 (0.05)</i>
LGDPTR	<i>0.779</i>	<i>0.089 (0.00)</i>	<i>0.918</i>	<i>0.115 (0.00)</i>
LRER	<i>-0.522</i>	<i>0.128 (0.00)</i>	-0.193	0.290 (0.51)
LMCAPT(-1)	<i>0.302</i>	<i>0.094 (0.00)</i>	<i>0.185</i>	<i>0.073 (0.01)</i>
Trend	<i>0.027</i>	<i>0.008 (0.0)</i>	<i>-0.024</i>	<i>0.012 (0.04)</i>
\bar{R}^2	0.959		0.960	
DW statistic	1.964		1.596	
F statistic	414.51		216.91	
N	294		152	
Cross Sections	13		13	

Table.9: Imports of Intermediary Goods_ FEM				
Dependent Variable	1980-2007		1996 - 2007	
LMINTER	Coefficient	Robust Std. Error and P value	Coefficient	Robust Std. Error and P value
C	<i>6.819</i>	<i>1.494 (0.00)</i>	<i>10.192</i>	<i>2.136 (0.00)</i>
LMIGTUR	<i>0.068</i>	<i>0.041 (0.09)</i>	0.058	0.061 (0.34)
LGDPTR	<i>0.469</i>	<i>0.081 (0.00)</i>	<i>0.588</i>	<i>0.114 (0.00)</i>
LRER	-0.128	0.095 (0.18)	<i>-0.286</i>	<i>0.105 (0.01)</i>
LMINTER(-1)	<i>0.534</i>	<i>0.084 (0.00)</i>	<i>0.367</i>	<i>0.132 (0.01)</i>
Trend	<i>0.022</i>	<i>0.006 (0.00)</i>	<i>0.031</i>	<i>0.006 (0.00)</i>
\bar{R}^2	0.985		0.985	
DW statistic	<i>1.611</i>		<i>1.633</i>	
F statistic	<i>1186.59</i>		<i>588.11</i>	
N	294		152	
Cross Sections	13		13	