Removal of Iran Sanctions: Is It Opportunity or Threat for Turkey?*

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Abstract

After the removal of sanctions against Iran, foreign investors' interest in Iran, where cheap labor force and attractive investment incentives are located, is regarded as a commercial threat for Turkey. Conversely, Turkey has important opportunities to increase its trade with Iran due shared borders and their trade agreements. In view of this perspective, it is aimed to examine Turkey's trade with Iran in order to evaluate the opportunities after the removal of sanctions. For this purpose, Iranian trade with Turkey, European Union (EU), United States (USA), Russia and China have been examined using Gravity Model for 1990-2016 period. It has seen that Turkey has a great commercial opportunity compared to the countries mentioned from the analysis results. The analyses have indicated that it is necessary for Turkey to increase its economic relations in order to be able to evaluate its trade opportunities with Iran.

Keywords

Sanctions, Iran sanctions, Iran sanctions and Turkey, Gravity model.

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Introduction

Iran is a country of critical importance due to its large population, natural resources and labor resources. Despite this importance, Iran has been affected by many internal and external factors since the end of the 1970s. Most notably, the 1979 revolution and the Iran-Iraq War, which started in 1980 and lasted for 8 years. Both conflicts have caused labour and capital losses. Moreover, Iran's nuclear program has been regarded as a step towards the possession of nuclear weapons, and Western countries, primarily the United States (USA), have imposed sanctions against Iran. Disagreements based on the nuclear program, though actually covering a broader geopolitical framework, have adversely affected the Iranian economy. Some countries, especially China and Russia, declared that they did not recognize the sanctions and that they would continue their commercial relations with Iran. Nevertheless, the period of sanctions has significantly brought the commercial relations of Iran to a standstill.

The sanctions, which were imposed on June 28, 2012 by the USA and on July 1, 2012 by the European Union (EU), came to an end in January 2016. The sanctions were lifted on the understanding that Iran would restrict its nuclear program to prevent it from achieving the possession of weapons, and that its nuclear program would be open to the control of international organizations. The termination of the sanctions means the opening of the last large market which big investors have not yet entered, and investigation of this market is especially important for Turkey.

The commercial relations between Turkey and Iran are not at the desired level despite the fact that they share borders. With the removal of the sanctions, there is an expectation that Turkey will become an energy center in the transfer of Iranian natural gas to Europe and Turkey's exports to Iran will increase, increasing the volume of its foreign trade. The geographical juxtaposition of Turkey to Iran is seen as an important advantage in the expectation that the trade volume between the two nations will increase in a short time. In addition, trade agreements have been made in recent years towards promoting and diversifying the commercial relations between Turkey and Iran beyond trade in oil and natural gas. However, after the nuclear deal, Iran is getting closer to the West and becoming prominent in the global market. Foreign investors from Europe are heading to Iran for cheap labour and attractive investment

incentives could lead the contraction of Turkey's scope of influence in the Middle East. Moreover, Iran's rise as a dominant regional power in the Middle East could diminish Turkey's importance.

As a result, after the removal of sanctions against Iran, despite the fact that regional competition conditions will change, it is thought that new commercial opportunities will emerge for Turkey due to its location and the its trade agreements with Iran. Based on this thought, the purpose of this study is to examine Turkey's trade with Iran in terms of Turkey's commercial opportunities and to put forward suggestions to increase these relations following the removal of the sanctions. This study is composed of four sections. The first section discusses the economic outlook of Iran and commercial relations between Turkey and Iran. The second section summarises the literature on trade between the two countries. The third section analyses Iran's trade with Turkey by making comparisons to trade with China and Russia, neither of which have previously participated in the sanctioning of Iran, and the EU and USA, which are expected to be important competitors to Turkey. This study uses the Gravity Model. The fifth section concludes this study with evaluations and suggestions concerning the commercial relations between Turkey and Iran.

The Economic Outlook of Iran and Turkey-Iran Commercial Relations

Iran, which has a population of 78 million, 41% of which is below the age of 25, is of critical economic importance due to its labour power as well as its natural resources. Iran holds 10.6% of the world oil reserves and 16.8 of natural gas reserves which ranks it as one of the top 3 oil and natural gas producing countries in the world. It is the second largest economy in the Middle East, after Saudi Arabia, with a Gross Domestic Product (GDP) of $ 425 billion (Turkish Exporters Assembly, 2016: 12).

Iran's economy is often controlled by the state either directly or indirectly by means of foundations or bonyads, mutual funds and pension funds. Thus, the impact of the global crisis has been limited in Iran which did not fully integrate with the global financial system after the Islamic Revolution. Even the rapid increase in oil prices experienced after the global crisis has positively affected the country's economy. However, the sanctions imposed due to the nuclear program were effective, and led the economy to shrink by 1.9% in

2013. The shrinkage has continued in subsequent years with the effect of the decrease in the oil prices in addition to the ongoing sanctions (www.index-mundi.com Access: 20.03.2017).

Since 2012, commercial relations between Iran and the Western European countries have also been significantly interrupted. While Germany, Italy, and France were among the countries with the most exports to Iran before the sanctions, China, India and the United Arab Emirates (UAE) have become the biggest trade partners of the country after the sanctions (Habibi 2012: 5). As seen in Table 1, China has the largest share in the Iranian exports and imports in 2016. The largest share in exports and imports are India and the UAE, respectively. (Trade-European Comission, trade.ec.europa.eu Access: 10.06.2017).

Table 1. *The Share Taken by the Countries in the Foreign Trade of Iran (%)*

Iranian Exports (2016)	(%)	Iranian Imports (2016)	(%)
China	20	China	15
India	16	UAE	14
Japan	14	Germany	10
South Korea	8	South Korea	7
Turkey	5	Russia	5
Spain	4	Turkey	4

Source: Trade-European Commission, 2017

After the removal of the sanctions, it is estimated that the business volumes of the EU and Far East construction companies will increase in infrastructure investments and in the construction of pipelines for oil transfer. Considering these developments, Iran could be an important center of attraction for Turkish contractor companies with competitive advantage against China, Russia, and South Korea.

Despite sharing a border, trade between Turkey and Iran has not reached the desired level. As seen in Table 2, the foreign trade volume between the two countries has not exceeded 22 billion dollars since 2011, excluding Turkey's gold exports. Turkey has a considerably high level of imports from Iran; 80% of the imports are made up of oil and natural gas. Plastic and derivative pro-

ducts are the second largest group of goods in Turkey imports. Except these two types of goods, there are no other types of goods of importance that constiue Turkey's imports from Iran (Turkish Statistical Institute, www.tuik. gov.tr Access: 20.03.2017).

Table 2. *Turkey-Iran Trade Volume (billion dollars)*

Years	Turkey-Iran Exports	Turkey-Iran Imports	Turkey-Iran Total Trade
2011	3.590	12.460	16.050
2012	9.920	11.970	21.890
2013	4.190	10.380	14.600
2014	3.880	9.830	13.710
2015	3.670	6.100	9.770
2016	1.440	1.500	2.940

Source: Turkish Statistical Institute, 2017

There is no significant sector concentration in Turkey's exports to Iran. However, the precious minerals and jewelery sector should be noted; it constitutes 23% of exports in 2014 (Turkish Statistical Institute, www.tuik.gov.tr Access: 20.03.2017). According to Table 3, export of precious minerals and jewelery has achieved 51% increase in 2014 but it has decreased 55% in 2016.

Table 3. *Turkey-Iran Trade Volume in precious minerals and jewelery (million dolar)*

Years	Turkey-Iran Exports in Precious Minerals and Jewelery	Change (%)
2009	807	210
2010	980	22
2011	954	-3
2012	13.083	13
2013	17.849	37
2014	932.329	51
2015	881.312	-6
2016	396.882	-55

Source: Turkish Exporters Assembly, 2017

The precious minerals and jewelery that Turkey exports to Iran are processed gold and jewelery which are exported to individual customers and are not considered as a financial instrument that replaces money in the international markets. In other words, the gold that Turkey exports to Iran is not gold ingot and this is not considered to be a financial instrument due to being processed gold and jewelery increasing the product costs and especially preferred by individual customers. Hence, it has not been the subject of a speculation such as violation of the commercial sanctions imposed on Iran (Özçelik 2017: 2).

There is an expectation that Turkey's exports to Iran will increase and the foreign trade volume will rise with the removal of sanctions. For this reason, commercial agreements are being made with the aim to carry out and diversify trade relations between the two countries beyond trade in petroleum and natural gas. In this respect, there are four important agreements recently signed between Iran and Turkey. These agreements are as follows:

1. Mutual Promotion and Protection of Investments Agreement: The agreement was ratified in 2005, and provided appropriate conditions for investments and conditions of common agreement in case of disagreement between the parties.

2. Double Taxation Prevention Agreement: The agreement entered into force in 2006 with the aim of preventing the two countries from receiving the same taxes from the earnings of dual Iranian and Turkish citizens.

3. Memorandum of Reconciliation between the Ministry of Labor and Social Security of the Republic of Turkey and the Ministry of Labor and Social Affairs of the Islamic Republic of Iran: It was approved by the Council of Ministers in February 2011.

4. Preferential Trade Agreement: Entered into force in January 2015. It was made for the purpose of mutually reducing the customs duties on 140 Turkish products and 125 Iranian products and to increase trade between the two countries by liberalising.

5. Exchange-Based Contract: This agreement, signed in 2016, stipulated that Turkish Petroleum Refineries Joint Stock Company (TÜPRAŞ) will barter the rail of Karabük amounting to € 80 million in exchange for the purchase of oil from Iran.

Thus, it is expected that Iran will reach a foreign trade volume of $ 250 billion after the sanctions and it is estimated that Turkey will hold at least a 10% share of this trade because of the proximity between the two countries and the Preferential Trade Agreement. Furthermore, Turkey's trade with the rest of the Gulf region will rapidly increase with the multiplier effect (Turkborsa 2015: 7). On the other hand, the tendency of foreign investors towards Iran may negatively affect Turkey's economic outlook. After the Nuclear Agreement, Iran's rapprochement with the West and its prominence on the global platform could lead to a contraction of Turkey's scope of influence in the Middle East. Because of Iran acting together with China and Russia, Turkey's position in the Middle East may be weakened and its operational options in Iran may be limited.

The nuclear deal with Iran means opening up the last big market in the global economy that investors have not yet entered which holds significant implications for Turkey. The removal of sanctions imposed on Iran should be examined together with the significant opportunities and risks resulting for Turkey. The facts that Turkey shares a border with Iran and the two nations are party to the 2016 Preferential Trade Agreement are considered to be important advantages in terms of increasing the Turkey-Iran trade volume in a short time.

Literature Review

The field of economics has long sought answers to the question "*Why has trade grown?*" International economic theories indicate that the answer lies in the mutual liberalization of trade (Andersan 1979, Krugman 1979). The studies that examine the subject more elaborately state that the convergence of the revenues of the country as the result of monopolistic competition would increase trade (Krugman 1979, Helpman and Krugman 1985). Another explanation for how trade between countries has increased emphasizes the reduction in the transportation costs as the result of either technological developments or geographical adjacency (Bergstrand 1985-1989-1990).

These answers regarding trade between countries are defined as the *Gravity Model*. The Gravity Model associates the volume of trade flows with the national income and the distance between capitals of the two countries. The model has a rich literature about its empirical success in predicting and explaining the level international trade beginning with the studies of Timbergen (1962)

and Pöynöhen (1963). When the Gravity Model which is applied to different countries for different time periods, studies show that international trade is positively affected by GDP and negatively affected by distance (Linnemann 1966, Leamer and Stern 1971, Boldwin 1994, Deardorf 1998, Nitsch 2000, Baier and Bergstrand 2001, Dilanchiev 2012, Khiyavi et. al. 2013).

Numerous studies examining Iranian foreign trade with Gravity Model have been conducted. Soori and Tashkini (2012) try to explain Iran's trade with different regional blocs throughout the globalization process. The authors applied the Gravity Model to Iran's foreign trade between 1995 and 2009 and found that the distance variable received a negative sign, that is, in case of decrease in the transportation costs, the trade with these regional blocs would increase (Soori and Tashkini 2012: 1-12). Another study investigating the effects of the same variables on Iranian trade was conducted by Nasiri and Hassani (2013). Nasiri and Hassani (2013) have added control variables to the models such as whether trading partners have memberships with the regional integrations. The results indicated that the control variables had important effects on the mutual trade of Iran and its partners. The integration membership led Iran to maximize its trade with 67 countries, and created the potential to increase its trade with 94 countries (Nasiri ve Hassani 2013: 398-409).

Some other studies on Iranian trade using the Gravity Model have been investigating the effects of economic sanctions. Askari et. al. (2001) estimated, with the Gravity Model, that the sanctions put an annual cost between 1,187-1,348 million dollars. They stated that this loss was caused by the Foreign Direct Investment (FDI) opportunities missed because of the sanctions, rather than the negatively affected trade (Askari et. al 2001: 7-19). Torbat (2005) stated that, while the USA was the second largest trade partner in 1978, (the imports of Germany 19%, and the imports of the USA 16%), both political and commercial relations with Iran were interrupted with the hostage crisis in November 1979 (Torbat 2005: 407-409). Then, Torbat (2005) compared the cost calculated by Askari et. al. (2001) with the Gravity Model, and observed that the sanctions costs calculated for the same year (2000) with different methods in different studies was in fact much higher than the one Askari et. al. (2001) calculated (Torbat 2005: 407-409).

Hadinejad et. al. (2010) have investigated whether the embargoes have an effect on non-oil trade that Iran carries out with 42 trade partners. The authors determined that the *distance* variable has a positive sign, contrary to the expectations but unimportant. The researchers have explained this situation as not the decline in transportations cost for Iran, but as Iran searching for, and engaging with, new markets (Hadinejad et. al. 2010: 1-6).

Ghaderi (2015) primarily stated that US sanctions were frequently used as a political instrument on the Iranian economy, and that more than 30 years has passed so far since the first sanctions were implemented. In his study, he applied a separate Gravity Model for the five sanction periods applied to Iran and showed the negative effects on the trade during each period (Ghaderi 2015: 1-61). Devarajan and Mattaghi (2015) and Shirazi et. al. (2016) measured how much the sanctions would affect Iranian exports. These studies estimated that sanctions reduced Iranian exports about 33% each year (Devarajan and Mattaghi 2015: 1-46, Shirazi et. al. 2016: 111-124).

As a result, the anticipation that the sanctions would adversely affect the Iranian economy has been confirmed by the research. Following the removal of the sanctions, it has been seen that the countries geographically close to Iran have the potential to increase trade, and that increased GDP leads to increased trade. Commercial agreements between countries also contribute to increasing the trade volume.

Econometric Methodology

The framework in this study is based on the Gravity Model to investigate trade between countries. The Gravity Model of trade, which was originally inspired by Newton's gravity equation, is based on the idea that trade volumes between two countries depend on their economic sizes and their geographical proximity to one another. Variables related to trade barriers and trade liberalization arrangements can also be added to the model. Thus, the Gravity Model makes it possible to measure the effects of non-economic factors on foreign trade.

This equation appears to be highly effective as proven at a very early date by the works of Timbergen (1962), Pöynöhen (1963), Linnemann (1966) and Leamer and Stern (1971). However several controversies have arisen regarding the model. The theoretical framework was put into doubt and afterwards jus-

tified by Bergstrand (1989) for the factorial model, Deardorff (1998) for the Hecksher-Ohlin model, Anderson (1979) for goods differentiated according to their origin.

Traditionally the multiplicative Gravity Model has been linearized and estimated using Ordinary Least Squares (OLS), assuming that the variance of the error is constant across observations or using panel techniques assuming that the error is constant across countries or country-pairs. As pointed out by Santos, Silva and Tenreyro (2006), in the presence of heteroskedasticity, OLS estimation may not be consistent, and nonlinear estimators should be used. Another challenge described in the literature concerns the zero values. Helpman et al. (2008) propose a theoretical foundation based on a model with heterogeneity of firms a la Melitz (2003) and an adapted Heckman procedure to predict trade taking into accounts these features.

This study reviews most estimation methods. The performance of several linear and nonlinear estimators is compared using a three-dimensional (i, j, t) dataset, analyzing the most relevant properties of each one. A gravity equation based on Anderson and van Wincoop's (2003) theoretical model is used. This model was expanded by adding population variables (Linnemann 1966: 12). In the Gravity Model, the population is often used to represent country size. Countries with more populations have a larger domestic market. A large domestic market creates opportunities for trading various products (Han 1999: 37- 38). It also allows full use of the advantages of scale economies. As a result, opportunities for foreign trade increase and trade is positively affected.

Using this equation, the fit of different estimation procedures applied to dataset of exports for each of Turkey, the EU, the USA, China and Russia with Iran during the period 1990-2016. The fit of each method is compared through different measures, revealing the main advantages and disadvantages of each one. Methods that do not properly treat the presence of zero flows on data exhibit noticeably worse performance than others. Nonlinear estimators show more accurate results and are robust to the presence of heteroscedasticity in the data. The Heckman sample selection model is revealed to be the estimator with the most desirable properties, confirming the existence of sample selection bias and the need to take into account the first step to avoid the inconsistent estimation of gravity parameters.

Gravity Model Estimation Methods

In this model, countries are representative agents that export and import goods. Goods are differentiated by place of origin where each country is specialized in the production of only one good and preferences are identical, homothetic, and approximated by a constant elasticity of substitution (CES) function. The linear gravity equation estimated by Anderson and van Wincoop's (2003) is as follows:

$$\ln X_{ij} = k + \ln y_i + \ln y_j + (1-\sigma)\ln dist_{ij} + (1-\sigma)\ln popul_i + (1-\sigma)\ln popul_j + (1-\sigma)\ln contig_{ij} + (1-\sigma)\ln ta_{ij} + \varepsilon_{ij}$$

where is the value of exports from i to j; k is a positive constant; and are the real income of each country generally proxied by its real GDP, is a measure of the bilateral distance between capitals of country i and j which are introduced to proxy for transport costs and $popul_i$ and $popul_j$ are the population of each country. The dummy variable is represented as , which takes value one if two countries share a border. The other dummy variable is represented as ta_{ij}, which takes value one if two countries have Preferential Trade Agreement.

The basic Gravity Model needs to be altered in some fundamental dimensions if it is deal with the issues raised. At its most basic, the Gravity Model based on Anderson and van Wincoop's (2003) is essentially a demand function. It owes much of its final form to the constant elasticity of substitution structure chosen for consumer preferences. Since the logarithm of zero is not defined, truncation and censoring methods have been proposed in the literature to treat the problem of zero flows in data. A panel framework permits recognizing how the relevant.

Data and Model

The sample consists of monthly bilateral exports of Turkey, the EU, the USA, China and Russia from 1990 to 2016. The total number of observations should be 28,728 but it is reduced to 25,500 due to missing data. Data were obtained from World Bank official website. For the aim of study, we used the gravity equation as given below:

$$\ln(X_{ijt}) = \alpha_1 \ln y_{it} + \alpha_2 \ln y_{jt} + \alpha_3 \ln dist_{ij} + \alpha_4 \ln popul_i + \alpha_5 \ln popul_j + \alpha_6 contig_{ij} + \alpha_7 ta_{ij} + \ln \varepsilon_{ijt}$$

The dependent variable is the logarithm of the volume of exports from country i to j. The logarithms of real GDP, in each country whose effect on trade is expected to be positive, is represented by and . The logarithms of distance, in each country whose effect on trade is expected to be negative, is represented by $dist_{ij}$. The logarithms of population, in each country whose effect on trade is expected to be positive, is represented by $popul_i$ and $popul_j$. The dummy variables are ; they take value 1 when two countries share a border and have a preferential trade agreement. If there is a border and a trade agreement, in all cases the coefficient is expected to be positive (Ekanayake et. al. 2010: 627-643).

In this study, we estimate different alternative models. These are: Truncated OLS, OLS, Tobit, Probit, Heckman, Panel Fixed, Panel Random.
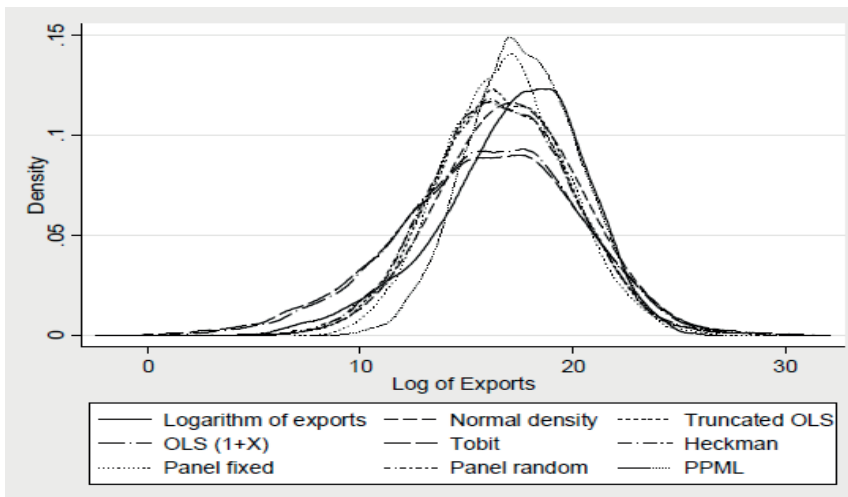

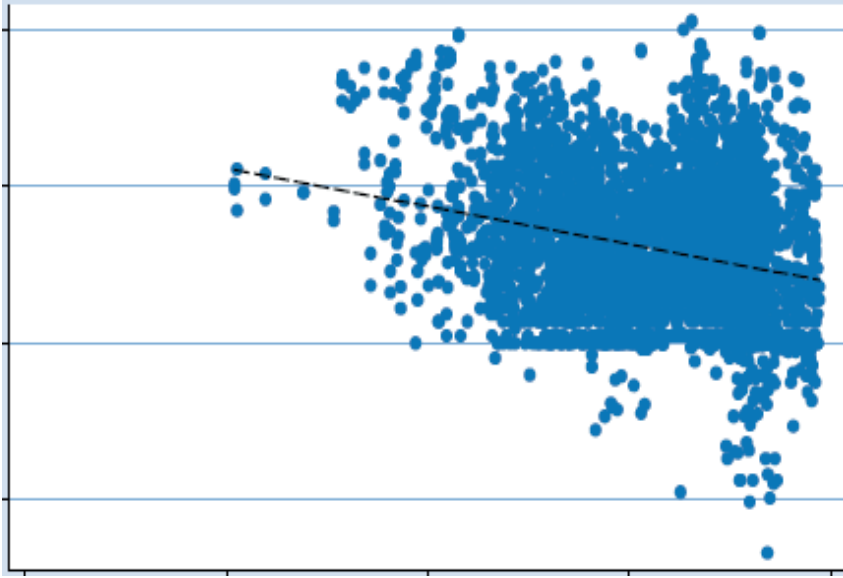**Figure 1.** *Alternative models' density*

Figure 2. *Scatter plot of distance effect*

This graph shows the alternative models estimated. As demonstrated, the most effective model is Truncated OLS model, because its variance is minimum. So, we have taken into account this model for determining the countries' trade with Iran. We can also use graphical methods to investigate the association between trade and distance. Figure 2 presents results using the Gravity Model approach. In this case, the scatter plot suggests a negative association. That impression is reinforced by the line of the best fit, which is strongly downward sloping. Graphical evidence confirms the basic gravity intuition: counties that are farther apart geographically tend to trade less.

Estimation Results

Estimation results have been obtained by applying different techniques to the Gravity Model. As stated earlier, since the Truncated OLS has been determined as the most appropriate model, the estimation results have been interpreted according to the parameters obtained from this model.

Table 4. *Estimation Results for European Union Countries with Iran*

	Truncated OLS	OL-S(1+X)	Tobit	Probit	Heckman	Panel Fixed	Panel Random	PPML
Log of exporter real GDP	1.388**	1.485**	1.699**	0.988**	1.722**	1.622**	1.598**	1.315*
	(0.028)	(0.040)	(0.020)	(0.020)	(0.010)	(0.033)	(0.060)	(0.000)
Log of importer real GDP	1.130**	1.622**	1.705**	0.725**	1.336**	1.299**	1.263**	0.920*
	(0.040)	(0.063)	(0.045)	(0.055)	(0.015)	(0.012)	(0.047)	(0.000)
Log of distance	-	-	-	-	-	-	-	-
Log of exporter population	1.101**	1.922*	1.235*	0.925*	1.701*	1.705**	1.531**	1.375*
	(0.021)	(0.000)	(0.000)	(0.010)	(0.010)	(0.033)	(0.060)	(0.000)
Log of importer population	1.222**	1.789*	1.331*	0.888*	1.699**	1.541**	1.566**	1.389*
	(0.028)	(0.000)	(0.000)	(0.010)	(0.012)	(0.020)	(0.070)	(0.000)
Contiguity (border)	-	-	-	-	-	-	-	-
Trade agreement	-	-	-					
Inverse mills ratio	-	-	-	-	0.166**	-	-	-
					(0.034)			
Constant	-4.986**	-15.88**	-14.82**	-10.40**	-7.80**	-13.40**	-7.10**	2.365**
	(0.395)	(0.784)	(0.725)	(0.965)	(0.305)	(0.369)	(0.789)	(0.298)
Observations	25,598	26,856	26,856	26,856	25,598	25,598	25,598	26,856

[*] Meaningful at the level of %1, [**] Meaningful at the level of %5, [***] Meaningful at the level of %10

Table 4 reports the estimation outcomes for EU countries resulting from the different techniques. It is seen that the parameters obtained from all estimation results are statistically meaningful especially at the level of 5%. The dependent variable is the logarithm of exports in all cases. Distance, contiguity and trade agreement cannot be used as an explanatory variable. In this case, both the GDP and the population has caused the trade between Iran and the EU to develop.

Table 5. *Estimation Results for ABD with Iran*

	Truncated OLS	OLS(1+X)	Tobit	Probit	Heckman	Panel Fixed	Panel Random	PPML
Log of exporter real GDP	1.190**	1.191**	1.162**	0.935**	1.165**	-	-	1.195**
	(0.032)	(0.045)	(0.020)	(0.025)	(0.019)			(0.030)
Log of importer real GDP	1.130**	1.601***	1.685**	0.690**	1.290**	-	-	0.922*
	(0.020)	(0.058)	(0.048)	(0.033)	(0.021)			(0.000)
Log of distance	-1.145*	-1.585*	-1.590*	-0.91***	-1.492**	-	-	-1.340**
	(0.004)	(0.002)	(0.024)	(0.085)	(0.029)			(0.011)
Log of exporter population	1.002**	1.805*	0.963*	0.900*	1.622*	1.555**	1.528***	1.321*
	(0.014)	(0.000)	(0.000)	(0.010)	(0.010)	(0.025)	(0.060)	(0.000)
Log of impoter population	1.018**	1.963*	0.741*	0.500**	1.523*	1.499**	1.502***	1.333*
	(0.028)	(0.000)	(0.000)	(0.012)	(0.010)	(0.033)	(0.070)	(0.000)
Contiguity (border)	-	-	-	-	-	-	-	-
Trade agreement	-	-	-					
		-						
Inverse mills ratio	-	-	-	-	0.172**	-	-	-
					(0.033)			
Constant	-5.890**	-14.65*	-13.85*	-9.62*	-6.40*	-	-	2.554*
	(0.322)	(0.714)	(0.735)	(0.922)	(0.315)			(0.322)
Observations	25,598	26,856	26,856	26,856	25,598	-	-	26,856

[*] Meaningful at the level of %1, [**] Meaningful at the level of %5, [***] Meaningful at the level of %10

The USA is geographically distant from Iran and it frequently imposes sanctions. Because of these two reasons, it has always had weak commercial relations with Iran. When the results in Table 5 are examined, it is seen that the parameters obtained from all estimation results are statistically meaningful especially at the level of 5%. According to the parameters obtained from the Truncated OLS model, GDP and population positively affect trade. However, the log of distance parameter -1,145 confirmed that the USA's geographical

distance negatively affects trade with Iran. The contiguity and trade agreement variables have not been included in this model.

Table 6. *Estimation Results for China with Iran*

	Trunca-ted OLS	OLS (1+X)	Tobit	Probit	Heckman	Panel Fixed	Panel Random	PPML
Log of exporter real GDP	1.458**	1.515**	1.300**	0.951**	1.599**	-	-	1.198**
	(0.030)	(0.036)	(0.025)	(0.036)	(0.022)			(0.036)
Log of importer real GDP	1.138**	1.622**	1.691**	0.675**	1.305**	-	-	0.940*
	(0.024)	(0.050)	(0.040)	(0.045)	(0.026)			(0.000)
Log of distance	-1.109*	-1.460*	-1.498**	-0.876***	-1.399***	-	-	-1.210**
	(0.007)	(0.003)	(0.044)	(0.080)	(0.079)			(0.031)
Log of exporter popula-tion	0.922**	1.985*	1.993*	0.825**	1.775*	1.522**	1.644**	1.349*
	(0.028)	(0.000)	(0.000)	(0.019)	(0.007)	(0.020)	(0.048)	(0.000)
Log of importer Popula-tion	0.938**	1.821*	1.746*	0.831**	1.666*	1.531**	1.512**	1.214*
	(0.034)	(0.000)	(0.000)	(0.015)	(0.009)	(0.030)	(0.039)	(0.000)
Contigu-ity (border)	-	-	-	-	-	-	-	-
Trade agreement	-	-	-					
Inverse mills ratio	-	-	-	-	0.162**	-	-	-
					(0.041)			
Constant	-5.250**	-14.23*	-13.22*	-9.15*	-6.05*	-	-	2.152*
	(0.301)	(0.654)	(0.725)	(0.854)	(0.309)			(0.299)
Observa-tions	25,598	26,856	26,856	26,856	25,598	-	-	26,856

* Meaningful at the level of %1, ** Meaningful at the level of %5, *** Meaningful at the level of %10

China did not participate in sanctions that began in 2012. Yet China is a distant country like the USA but has not imposed sanctions. The results in Table 6 show that the parameters obtained from all estimation results are statistically

meaningful especially at the level of 5%. According to the parameters obtained from the Truncated OLS model, GDP and population positively affect trade. The log of distance parameter -1,109 confirmed that China's distance negatively affects trade with Iran. This parameter is quantitatively larger than the estimation value obtained for the USA. In other words, the fact that the USA is geographically farther from Iran than China influences its trade with Iran more negatively. The contiguity and trade agreement variables have not been included in China's analysis.

Table 7. *Estimation Results for Russia with Iran*

	Truncated OLS	OLS (1+X)	Tobit	Probit	Heckman	Panel Fixed	Panel Random	PPML
Log of exporter real GDP	1.047**	1.105**	1.107**	0.566**	1.327*	-	-	1.105**
	(0.042)	(0.022)	(0.020)	(0.020)	(0.010)			(0.002)
Log of importer real GDP	1.107*	1.482***	1.545**	0.546**	1.150**	-	-	0.795*
	(0.010)	(0.058)	(0.044)	(0.025)	(0.014)			(0.000)
Log of distance	-1.007*	-1.130*	-1.207**	-0.792**	-1.107**	-	-	-1.062**
	(0.004)	(0.001)	(0.025)	(0.025)	(0.022)			(0.040)
Log of exporter population	0.996**	0.993*	0.969*	0.888**	1.622*	1.505**	1.623**	1.334*
	(0.025)	(0.000)	(0.000)	(0.015)	(0.010)	(0.027)	(0.050)	(0.000)
Log of importer population	0.947**	0.921*	0.889*	0.743**	1.463*	1.512**	1.469**	1.236*
	(0.022)	(0.000)	(0.000)	(0.014)	(0.020)	(0.036)	(0.049)	(0.000)
Contiguity (border)	-	-	-	-	-	-	-	-
Trade agreement	-		-					
		-						
Inverse mills ratio	-	-	-	-	0.125***	-	-	-
					(0.058)			
Constant	-5.210**	-12,50*	-13.45*	-9.25*	-6.22*	-	-	2.485*
	(0.298)	(0.722)	(0.705)	(0.897)	(0.305)			(0.258)
Observations	25,598	26,856	26,856	26,856	25,598	-	-	26,856

* Meaningful at the level of %1, ** Meaningful at the level of %5, *** Meaningful at the level of %10

Russia, like China, did not participate in sanctions that began in 2012. However, Russia has a distance advantage compared to China. The results of trade between Iran and Russia are in Table 7. It is seen that the parameters obtained from all estimation results are statistically meaningful at the level of 5%. According to Truncated OLS, GDP and population positively affect trade. That the log of distance parameter -1,007 indicates that the distance of Russia from Iran negatively affects trade with Iran. The advantage of Russia being close to Iran has been confirmed by the fact that the distance parameters have emerged higher than the results obtained for China and the USA. The contiguity and trade agreement variables have not been included in the model.

Table 8. *Estimation Results for Turkey with Iran*

	Truncated OLS	OLS (1+X)	Tobit	Probit	Heckman	Panel Fixed	Panel Random	PPML
Log of exporter real GDP	2.997**	2.539**	2.262**	1.262**	2.967***	-	-	1.696**
	(0.020)	(0.036)	(0.025)	(0.030)	(0.022)			(0.032)
Log of importer real GDP	2,520**	2.614**	2.689**	2.675**	2.305**	-	-	1.939*
	(0.024)	(0.050)	(0.040)	(0.045)	(0.026)			(0.000)
Log of distance	-0.560*	-0.630*	-0.462**	0.732***	-0.399***	-	-	-1.062**
	(0.005)	(0.003)	(0.044)	(0.086)	(0.070)			(0.030)
Log of exporter population	1.007*	1.818*	0.791*	0.928*	1.939**	1.491**	1.517**	1.317*
	(0.007)	(0.000)	(0.000)	(0.000)	(0.014)	(0.022)	(0.040)	(0.000)
Log of importer population	1.011*	1.877*	0.631*	0.990*	1.478**	1.420**	1.535**	1.333*
	(0.002)	(0.000)	(0.000)	(0.000)	(0.011)	(0.012)	(0.042)	(0.000)
Contiguity (border)	1.279*	1.460**	1.569**	1.889**	1.457**	1.999**	1.452***	1.572***
	(0.003)	(0.014)	(0.015)	(0.012)	(0.012)	(0.029)	(0.256)	(0.321)
Trade agreement	0,162*	0,192*	0,191**	0,230**	0.172***	-	-	-
	(0,856)	(0,659)	(0,056)	(0,458)	(0.031)			
Inverse mills ratio	-5.862**	-14.60*	-13.80*	-9.57*	-6.43*	-	-	2.595**
	(0.322)	(0.714)	(0.735)	(0.922)	(0.315)			(0.314)
Constant	-4.233*	-13,69*	-14,56*	-9.99*	-6.33*	-	-	2.496*
	(0.333)	(0.788)	(0.722)	(0.810)	(0.333)			(0.269)
Observations	25,598	26,856	26,856	26,856	25,598	-	-	26,856

[*] Meaningful at the level of %1, [**] Meaningful at the level of %5, [***] Meaningful at the level of %10

Among these countries, Turkey which is border neighbor with Iran and is the most advantageous country in terms of distance. As a partner country of the EU, Turkey has been involved in sanctions against Iran, but has also made commercial agreements in order to take advantage of emerging trade opportunities with the ending of sanctions in 2016. Accordingly, the trade agreement variable has been included in the model in addition to the contiguity variable. In Table 8, it is seen that the parameters except GDP obtained are statistically meaningful at the level of 1%. GDP and population positively affect trade and the effects are quite high. The argument that Turkey has significant opportunities to increase commercial relations with Iran, were supported with the log of distance parameter which is larger than the other countries estimation results. Furthermore, contiguity and trade agreement parameters are positive.

Table 9. *Standardized Parameters of Trade with Iran*

Countries	Trade Coefficient	
Turkey	0,985	
Russia	0,912	Turkey is the most effective country in terms of trade with Iran, because of the highest parameter value.
China	0,569	
USA	0,445	
European Union	0,569	

Table 9 gives the "trade coefficient" for all countries examined in the study. According to this, it can be said that the absence contiguity and trade agreement for EU countries negatively affect their trade with Iran. However, the EU has the advantage of being closer to Iran than the USA. The fact that China and Russia have not participated in the sanctions has caused them to gain an important acceleration in commercial relations. Turkey is the country with the highest trade coefficient in its trade with Iran compared to the other countries, due to the shared border and the sustained trade agreement.

Conclusion and Recommendations

More than 35 years have passed since the USA imposed sanctions on Iran for the first time. Iran has been subjected to huge stressors since 1980s due to both internal and external factors. The last sanctions, which started in 2012, were lifted in January 2016. Thus, the Iranian market, which is a big market that investors have not yet entered, has been opened to Western countries. The fact that Iran has approached the West and foreign investors have interest

in Iran where cheap labor and attractive investment incentives are located, with the opening of Iran, new commercial opportunities for Turkey are expected to emerge. Based on this expectation, this study has examined the trade between Iran and Turkey by using the different measurement methods of the Gravity Model. It has been determined that the most suitable model for the process is Truncated OLS with which Iran's trade with Turkey has been compared to its trade with the EU, the USA, China, and Russia.

The results of the analysis have shown that Turkey has a great commercial opportunity compared to the EU, the USA, China, and Russia due to sharing a border with Iran and being party to the Preferential Trade Agreement. At the same time, effects of GDP and population are highest compared to other countries in Turkey. However, when compared with the USA, the EU has the commercial advantage because it is closer to Iran. The fact that China and Russia have not participated in the sanctions has caused them to gain an important acceleration in their commercial relations.

As a result, it can be stated that Turkey needs to increase its economic relations in order to take advantage of the trade opportunities with Iran. For the aim of helping the investors to overcome issues related with tax, customs, or legislation, the scope of the existing agreements can be extended or other special agreements can be signed. For example, the scope of the Turkey-Iran Preferential Trade Agreement, which currently covers approximately 15% volume of the export products, can be extended. Furthermore, enforcement of the Economic Cooperation Organization Trade Agreement (ECOTA) can be accelerated. ECOTA was signed by the Economic Cooperation Organization (ECO) in 2003 for the purpose of gradually reducing the barriers to trade between the countries of the region (Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkmenistan and Uzbekistan).

On the other hand, there is a necessity to review the logistics policies and to improve the existing trade routes. Improving the railway between Turkey and Iran can contribute to solution of the transport-related problems standing as an obstacle to Turkey's exports to the Gulf and the Central Asian countries.

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İran Yaptırımlarının Kaldırılması: Türkiye için Fırsat mı Tehdit mi?[*]

Sema Ay[**]

Öz

İran'a yönelik ekonomik yaptırımlar kaldırıldıktan sonra yabancı yatırımcıların ucuz iş gücü ve cazip yatırım teşviklerinin bulunduğu İran'a yönelmesi Türkiye açısından ticari bir tehdit olarak değerlendirilmektedir. Buna karşılık, son yıllarda yapılan ticari anlaşmalar ve özellikle sınır komşumuz olması dikkate alındığında Türkiye, İran ile ticaretini artırması noktasında önemli fırsatlara sahip bulunmaktadır. Bu bakış açılarından hareketle çalışmada, yaptırımların kaldırılmasından sonra fırsatların değerlendirilebilmesi için, Türkiye'nin İran ile olan ticaretinin incelenmesi amaçlanmıştır. Bu amaçla, 1990-2016 döneminde, İran'ın Türkiye, Avrupa Birliği (AB), Amerika Birleşik Devletleri (ABD), Rusya ve Çin ile olan ticareti Gravity Modeli kullanılarak analiz edilmiştir. Analiz sonuçlarından, belirtilen ülkelere kıyasla Türkiye'nin İran ile sınır komşusu olması ve aralarında tercihli ticaret anlaşmasının yapılması sayesinde büyük bir ticari fırsata sahip olduğu görülmüştür. Sonuç olarak Türkiye, İran ile ticari alanda sahip olduğu fırsatlarını en iyi şekilde değerlendirilebilmesi için ekonomik ilişkilerini artırarak sürdürülebilir hale getirmelidir.

Anahtar Kelimeler

Ekonomik yaptırımlar, İran yaptırımları, İran yaptırımları ve Türkiye, Gravity modeli.

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Отмена иранских санкций: новые возможности или угроза для Турции?*

Сема Ай

Аннотация

После отмены иранских санкций интерес зарубежных инвесторов к Ирану, с его дешевой рабочей силой и привлекательными возможностями для инвестиций, считается угрозой для Турции. С другой стороны, у Турции открылись возможности для расширения торговли с Ираном из-за совместных границ и торговых соглашений. В связи с этой перспективой, торговля Турции с Ираном была исследована для выявления зависимости от снятия санкций. Торговля Ирана с Турцией, Евросоюзом (ЕС), Соединенными Штатами (США), Россией и Китаем были изучены с использованием гравитационной модели внешней торговли с 1990 г. по 2016 г. Было выявлено, что у Турции больше возможностей в сравнении с упомянутыми странами. Турции необходимо усилить экономические отношения, чтобы наиболее эффективно пользоваться торговлей с Ираном.

Ключевые слова

санкции, Иран, Турция, гравитационная модель

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