Resistive Economics
International Journal

The Open Access Journal of Resistive Economics (OAJRE)/
Volume 7, Number 3, 2019 Published Online July 01
E-ISSN: 2345-4954 http://oajre.ir

Original Article

Pages: 1-14

Effects of International Sanctions on Exports in Iran with an Approach to Business Attraction

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Received: 2019/02/23 Revised: 2019/04/12 Accepted: 2019/06/02

ABSTRACT: Today, international sanctions are used as a means to achieve political objectives. Iran has been repeatedly put under sanction and it has had various consequences. This paper estimates the impact of economic sanctions on Iran's exports to member countries of the ECO, OPEC and ASEAN Union during the period 1992-2013 using the gravity model approach and the OLS estimation method based on panel data. Estimation results show that sanctions have a negative impact on the volume of Iran's exports to member countries of the OPEC but it has no impact on exports to the ECO and ASEAN. Finally, it is recommended that Iran shifts its diplomacy from West to East and choose its Eastern neighbors for doing business transactions in order to neutralize the effects of sanctions.

KEYWORDS: Economic Sanctions, International Trade, Gravity Model, Panel Data, OLS.

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1. INTRODUCTION

In the field of international affairs, economic sanctions are an important and effective political tool which has a position between diplomacy and military intervention and is often considered as an alternative to war since it is less costly. Economic sanctions include disruption of economic relations and exchanges in order to apply pressure so that the target of sanctions concedes to of policies desired by the agent of sanctions. Economic sanctions are typically applied in two ways: one, trade sanctions which restrict or cut off the target country's exports and imports and, two, financial sanctions, in which constraints and pressures are exerted on the financial affairs of the target country. Various sanctions have been imposed on Iran at different periods among which we can point to the freezing of Iranian assets, prohibition on investment for the development of oil fields; banning the export of facilities to Iran, Iranian oil imports and exports embargo, sanctions on Iranian banks, prohibition on Iranian exports and imports, sanctions on the Iranian Shipping Organization and so on. The continuous imposition of sanctions has had various effects on the body of the Iranian economy. Today, the Islamic Republic of Iran is faced with unprecedented issues or concepts in the economic sphere either in theory or in practice. One of these emerging concepts is the notion of "economic resistance". After the intensification of sanctions against Iran in recent years, economic resistance has emerged as a new chapter in the economic literature of the country and has become the refrain of macroeconomic issues these days. The target of economic resistance is to revive the national economy: "our national economy must be revived in the era of sanctions". Iran's economy should step forward in line with correct principles so as to turn sanctions into an opportunity and follow the path of economic development successfully. In order to achieve an economic resistance, we should first investigate the impact of sanctions on the Iranian economy and then, on this basis, formulate and implement strategies of resistance. A look at the figures and numbers in foreign trade in recent years shows that the geographical distribution of customs export had no significant changes over these years, and the continental distribution of exports indicates the preservation of Asian countries among the major export markets of Iran.

In this regard, we point to a number of national and international studies cited. Dursun Peksen (2006) in an article evaluated the effects of unilateral United States sanctions on trade flows between the target country and third countries using two approaches, using the gravity model and panel data, during the period from 2000 to 1975. Generally, the findings suggest that sanctions imposed by the United States have resulted in decreased flow of trade between the target country and third countries. The results also point to significant differences between OECD and non-OECD countries: impairment of trade for OECD countries is relatively low whereas the negative impact of sanctions on non-OECD countries is striking. Raul Carus (2000) in a study deals with two methods for estimating the negative impact of economic sanctions on international trade. This study uses a gravity model to study the bilateral trade between the United States and 49 other countries during the period 1960-2000. The results of the first approach suggests that vast and comprehensive sanctions can have a significant negative impact on bilateral trade between countries while it is not so in limited sanctions. The second estimation focuses on the impact of unilateral United States sanctions on the volume of bilateral trade between target countries and other G-7 countries in the same period. The results indicate that large unilateral sanctions have a huge negative impact whereas limited sanctions have a small positive effect on bilateral trade among other G-7countries. In general, both estimations suggest that multilateral sanctions have a negative impact on trade flows. Akbari Fard, A'layi and Jalali (2010) in a study investigated the sanctions imposed by the Security Council on the regional integration of Iran and two blocks of the Economic Cooperation Organization (ECO) and D8 group using the gravity model and panel data during the period from 1995 to 2010. The results suggest that Iranian Sanctions had no significant effect on the regional integration of Iran and the ECO bloc members. Also Iranian sanctions on the D8 group had caused severe divergence in D8 members.

2. LITERATURE REVIEW

Hadi Nejad, Mohammadi and Shirkhani (2010) in an article investigated the direct effects of economic sanctions on Iran's non-oil trade during the period 1977-2006. The estimation sample consisted of 42 countries, selected from among the partners of Iran. The results indicated that limited and moderate sanctions during this period had significant effects on Iran's non-oil trade.
Zia'i Bigdeli, Gholami and Tahmasbi Boldaji (2009), in a study studied the effects of economic sanctions on Iran's bilateral trade with 30 partners during the period 1973-2007. For this purpose, they used the generalized gravity model using panel data. The results of this study indicated that sanctions had a negative yet small effect on Iran's trade with its partners.
Kazem Yari and Reza Mohseni (2009), in an article evaluated the effects of business and economic sanctions on Iranian economy in 2000. The results indicate that American sanctions led to economic successes by causing damages on Iranian economy. There is a meaningful effect of business sanctions on Iran's non-oil export and capital goods' import in comparison with Iran's oil export sanctions. The one-sided sanction of raw oil import from Iran is ineffective according to its nature and the competitive business. Financial sanction also has a more extreme effect in comparison with business sanctions.
Samad Aziz Nejhad and Mohammad Reza Seyed Nourani (2009) evaluated the effects of economic sanctions on Iranian Foreign business in three scopes of energy, goods and bank services in a study. The results indicate that the sanctions had no effect on energy scope and also from 2007 on and by increasing the sanctions, the capital goods' price increased 7% to 10% from European sellers; also despite the continues sanctions, Iranian Bank System rejected the sanctions gradually by management and planning and maintained its International place.
Sarvar Ajhdari and Mojtaba Hossein Zadeh (2012) in an article analyzed the process of imports and exports of some countries which has a more effective role in Iran's balance of trade between 2010 and 2012, the years of extreme sanctions, noting the sanction debate. The results indicate that import and export had fluctuation and China, Iraq, Emirates, Afghanistan and India were Iran's partners of import. Considering the importance of the subject, the aim of the present study is to analyze the effects of economic sanctions on Iranian exports to member countries of three trade agreements: Economic Cooperation Organization (ECO), Organization of the Petroleum Exporting Countries (OPEC) and Association of Southeast Asia Nations (ASEAN). All member states of ECO and ASEAN, and most member states of ASEAN, are Asian countries. This study is the first to analyze and compare the effects of sanctions on Iran's exports to member countries of ECO, OPEC and ASEAN trade agreement using a generalized gravity model over the period from 1992 to 2013. The circle of sanctions has become tighter since 2011 as more pressure has been exerted on Iran. In this line, the present study investigates the effects of sanctioning for the years 2011, 2012 and 2013 and evaluates the impact of economic sanctions on Iran's exports to member countries of Economic Cooperation Organization (ECO), Association of Petroleum Exporting Countries (OPEC) and Association of South East Asian Nations (ASEAN).

3. THEORETICAL FRAMEWORK

The origin of the gravity equation, which has been used for decades in international trade, goes back to the law of gravity in physics developed by Newton in 1687. In the 1860s, this law was appropriated by H. Gary from physics into the study of human behavior. Gravity models were first used in relation to international trade by Tenbergen in 1962. Later, Poyhonen (1963) examined the general patterns of bilateral trade flows among European countries. The gravity equation in international trade is one of the most important empirical findings of econometrics which provides the possibility of estimating bilateral trade flows at a particular time and simultaneously from the perspectives of both the exporting and importing countries (H. Gary). Linnman (1966) generalized the gravity model that was proposed by Tenbergen and added

explanatory trade variables such as population to the basic model. In the simplest form, the gravity equation can be expressed as follows:

$$T_{ij} = \mathrm{A}\ \frac{(\mathrm{Y_i}^{\alpha}.\ Y_j{}^{\beta})}{D_{ij}{}^{\lambda}} \qquad (1)$$

Whereby Tij is the volume of trade between the two countries of i and j; A is the constant value; Yi, economic size of country i; Yj, economic size of country j; and Dij is the geographical distance between countries i and j (Deardorff, 1995).

Equation (1) is an explicit form of Newton's gravitational model, whereby bilateral trade is a function of the positive performance of income and the negative performance of anticipated distance. Typically, the GDP variable is used for showing the size of the economy. However, with regard to the nature of the problem, different variables are used in different studies for showing the size of the economy such as GDP, per capita GDP, income, consumption, employment, etc. In fact, a larger size of the economy increases the supply and demand in a country and the volume of its business with commercial partners. In other words, GDP has a positive impact on bilateral trade flows. Also, variables such as the distance between the capitals of two business partners, the distance between two ports in kilometers or miles, time of travelling and freight costs are used for showing the distance. The distance variable in the equation represents part of business expenses such as transportation, insurance, and vulnerability and corruptibility of goods. Thus, an increased in the gap between two countries has a negative effect on trade flows between them. If we take the logarithm of both sides of the equation (1), we obtain a linear equation as follows:

$$Log\ T_{ij} = A^{*} + \alpha\ Log(\ Y_i) + \beta\ Log(\ Y_j) - \lambda\ \mathrm{Log}\ D_{ij} + \varepsilon_{ij} \qquad (2)$$

Whereby A* is the logarithm of A; α, β and λ are estimated parameters. eij represents the error component with zero mean and constant variance (to represent the effects of stochastic variables on bilateral trade).
Also in recent years, other variables were added to the model such as common language, common religion and common colony all of which reflect the cultural similarities between the two countries - borders and customs tariffs indicating freight costs. Trade agreements and other economic factors such as trade policy have been added to the model. The data relating to real exports of Iran to its trading partners are collected from the data center Uncomtrade. GDP and per capita income data are collected from the World Bank (WDI) based on the fixed rate of the U.S. dollar in 2005. The data deployed used belong to the period 1992-2013. The statistical population of the study includes member countries of Economic Cooperation Organization (ECO), Association of Petroleum Exporting Countries (OPEC) and Association of South East Asian Nations (ASEAN) which had business dealings with Iran in this period (those with incomplete data relating to the period 1992-2013 have been removed from the model). Member countries of ECO which has trade relations with Iran have (and had complete records for the study period) include Pakistan, Turkey, Azerbaijan, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan and Tajikistan. Member countries of OPEC which has trade relations with Iran have (and had complete records for the study period) include Algeria, Kuwait, Nigeria, Saudi Arabia, United Arabic Emirates, Ecuador, Angola and Venezuela. Finally, member countries of ASEAN which has trade relations with Iran have (and had complete records for the study period) include Indonesia, Malaysia, the Philippines, Thailand, Singapore, Brunei, Dar al-Islam and Vietnam. The results are estimated using the Eviews software v8.

4. METHODOLOGY

To evaluate the effects of economic sanctions on Iran's exports to member states of the three Trade Unions under study, the following gravity model has been used:

$$Ln\ RX_{ijt} = \beta_1 + \beta_2 Ln\ GDP_{it} + \beta_3 Ln\ GDP_{jt} + \beta_4 DPIC_{ijt} + \beta_5\ Ln\ DIS_{ij} + \varepsilon_{ij} \qquad (3)$$

To consider specific effects, fixed effects (αij) and time effects (tα) were added to the model whereby Rxijt is the real exports of country i to country j; GDPit: GDP of country; GDPjt: GDP of country j; DPICij: differences in per capita income between countries i and j; DISijt: geographical distance between the capitals of countries i and j, and Ɛ_ij the error term. DPICij is the differences in per capita income between countries i and j and is calculated as follows:

$$DPIC_{ijt} = Ln\left(\frac{GDP_{it}}{N_{it}}\right) - \mathrm{Ln}\left(\frac{GDP_{jt}}{N_{jt}}\right) \qquad (4)$$

DPIC is expressed as the difference between two per capita points. Difference in per capita income has been used by Helpman (1987), Baltagj et al. (2003), Stack (2009) and Stack and Pentecost (2011). If both countries have similar per capita income, the value of DPIC will be zero. Any deviation from zero shows the difference in per capita income. To evaluate the effects of economic sanctions on the volume of exports, sanctions are considered as the dummy variable and added to the model as follows:

$$Ln\ RX_{ijt} = \beta_1 + \beta_2 Ln\ GDP_{it} + \beta_3 Ln\ GDP_{jt} + \beta_4 DPIC_{ijt} + \beta_5\ Ln\ DIS_{ij} + \beta_6 \mathrm{SAN} + \varepsilon_{ij} \qquad (5)$$

Since the variable of sanctions is considered as a dummy variable, it takes up the value of one in peak years of sanctions (2011, 2012 and 2013) and zero for the other years.

4.1. Explanation and Analysis of Data

Lack of reliability in sets used in one model can lead to incorrect statistical inferences and result in the problem of a spurious regression in which case the use of t and F statistics will be misleading. To avoid this, it is necessary, before estimating the model, to test the reliability of variables used in the estimation. Therefore, it is necessary to use at least one of the following tests for calculating the panel data unit root: Levin, Lin & Chu; Im, Pesaran & Shin, Fisher Dickey–Fuller test (ADF), Fisher Phillips-Perron test, and Hadri. In order to examine the collective reliability of variables, we used three tests: Im, Pesaran & Shin, Fisher Phillips-Perron test and Fisher Dickey–Fuller test (ADF). These tests are conducted for the main variables of the model and the results are presented in Table (1).

Table 1: Results of panel data unit root tests

Zero Hypothesis	Test (variable level)	Ln RX	Ln GDP_i	Ln GDP_j	DPIC
existence of unit root	Im, Pesaran, Shin W-stat	0.0000	1.0000	0.0000	0.9510

	ADF- Fisher Chi-sq	0.0000	1.0000	0.0000	0.3402
	PP- Fisher Chi-sq	0.0000	1.0000	0.0000	0.0535
Zero Hypothesis	Test (with one stage of subtraction)	Ln RX Δ	Ln ΔGDP_i	Ln ΔGDP_j	LIN Δ
existence of unit root	Im, Pesaran, Shin W-stat	0.0000	0.0000	0.0000	0.0000
	ADF- Fisher Chi-sq	0.0000	0.0012	0.0000	0.0000
	PP- Fisher Chi-sq	0.0000	0.0012	0.0000	0.0000

Source: Research Findings

The figures reported in the table represent the probability (p-value). According to the above table, all the main variables of the model, with one stage of subtraction, reject the H0 indicating the existence of unit root, and become reliable. In other words, all of them are filled with of root one. Now that we have found that all the main variables feature I1 patterns, the use of a cointegration test on variables becomes important. In panel cointegration test analyses, we investigate the association between variables and test the long-term possibility of business relationships. When using panel data, the cointegration test is generally conducted on the basis of Pedroni's proposed method (1995 and 1999). Besides, Kao (1999) presented the generalized cointegration Dickey-Fuller test by the assumption that the mass vectors are homogeneous in all sections. Cointegration test results using Pedroni's and Kao's methods are presented in tables 2 to 7. According to the results of the cointegration tests as presented in the following tables, the null hypothesis is rejected based on PP and ADF panel statistics indicating the absence of cointegration between the dependent variable and the explanatory variables. In other words, the existence of long-term relationships between real exports of Iran and other variables used in the model is confirmed for all three groups of countries.

Table 2: Pedroni cointegration test results for member countries of the ECO

	With intercept		With intercept and trend	
Pedroni Cointegration	test statistic	P-value	test statistic	P-value
Panel v-Statistic	3.058151	0.0011	1.384088	0.0832
Panel rho-Statistic	-1.837479	0.0331	0.109194	0.5435
Panel PP-Statistic	-3.117859	0.0009	-1.317165	0.0939
Panel ADF-Statistic	-2.394064	0.0083	-1.980422	0.0238
Group rho-Statistic	-0.437835	0.1202	0.712562	0.7619
Group PP-Statistic	-3.341315	0.0004	-1.423614	0.0773
Group ADF-Statistic	-2.842662	0.0021	-2.464347	0.0069

Source: Research Findings

Table 3: Kao cointegration test results for member countries of the ECO

Kao Cointegration	**t-Statistic**	**P-value**
ADF	-8.059758	0.0000

Source: Research Findings

Table 4: Pedroni cointegration test results for member countries of the OPEC

	With intercept		With intercept and trend	
Pedroni Cointegration	test statistic	P-value	test statistic	P-value
Panel v-Statistic	1.969157	0.0245	-0.018199	0.5073
Panel rho-Statistic	-2.251575	0.0122	-1.120853	0.1312
Panel PP-Statistic	-3.739019	0.0001	-3.899065	0.0000
Panel ADF-Statistic	-4.648662	0.0000	-3.681988	0.0001
Group rho-Statistic	-1.037476	0.1498	-0.026030	0.4896
Group PP-Statistic	-4.206173	0.0000	-4.630710	0.0000
Group ADF-Statistic	-5.270088	0.0000	-5.196783	0.0000

Source: Research Findings

Table 5: Kao cointegration test results for member countries of the OPEC

Kao Cointegration	**t-Statistic**	**P-value**
ADF	-3.647438	0.0001

Source: Research Findings

Table 6: Pedroni cointegration test results for member countries of the ASEAN

	With intercept		With intercept and trend	
Pedroni Cointegration	test statistic	P-value	test statistic	P-value
Panel v-Statistic	4.269363	0.0000	2.313117	0.0104
Panel rho-Statistic	-2.973490	0.0015	--1.688076	0.0457
Panel PP-Statistic	-4.045732	0.0000	-3.914592	0.0000
Panel ADF-Statistic	-5.151571	0.0000	-4.960197	0.0000
Group rho-Statistic	-1.630168	0.0515	-0.435480	0.3316
Group PP-Statistic	-3.392771	0.0003	-3.149210	0.0008
Group ADF-Statistic	-5.343162	0.0000	-4.679722	0.0000

Source: Research Findings

Table 7: Kao cointegration test results for member countries of the ASEAN

Kao Cointegration	**t-Statistic**	**P-value**
ADF	-5.482722	0.0000

Source: Research Findings

Before estimating the model, one must first see whether the sections under study are cointegrated or not. If the sections are equal, one can use an aggregated least squares method (using combinatorial data - Pooled). Otherwise, one must use panel data methods. The present study uses the F-Limer test to determine the type of estimation based on combinational or panel

data and uses the Hausman test to choose from among fixed effects or random effects. Hausman and F-Limer test results for the three groups of countries are presented in Tables 8 to 10:

Table 8: F-Limer and Hausman test results for member countries of the ECO

Test	P-value	Statistic	Result
F-Limer	0.0295	1.746169	Rejection of H0 and confirmation of the panel data approach
Hausman	0.0362	8.532691	Rejection of H0 and confirmation of the fixed effects method

Source: Research Findings

Table 9: F-Limer and Hausman test results for member countries of the OPEC

Test	P-value	Statistic	Result
F-Limer	0.0003	2.704809	Rejection of H0 and confirmation of the panel data approach
Hausman	0.7087	1.386347	Confirmation of H0 and confirmation of the fixed effects method

Source: Research Findings

Table 10: F-Limer and Hausman test results for member countries of the ASEAN

Test	P-value	Statistic	Result
F-Limer	0.0000	4.294149	Rejection of H0 and confirmation of the panel data approach
Hausman	0.3734	3.120570	Confirmation of H0 and confirmation of the fixed effects method

Source: Research Findings

5. MODEL ESTIMATION: RESULTS AND DISCUSSION

As seen in the above tables, F-Limer test results propose the panel data method for estimating the model for all three groups of countries. Also, Hausman test results propose the fixed effects method for estimating the model for member countries of the ECO and the random effects method for estimating the model for member countries of the OPEC and ASEAN. Model estimation results for members of the three unions are presented in Tables 11 to 16.

Table 11: Model estimation results for member countries of the ECO using the fixed effects method before the imposition of sanctions

Dependent variable: Export (***Ln RX***)

P- value	t statistic	coefficient	Independent variable
0.0000	-6.297570	-36.10381	Constant (C)
0.0000	4.466030	1.158342	Ln GDP_i
0.0000	12.06643	1.307473	Ln GDP_j
0.9337	0.083297	0.005594	DPIC

0.0000	-11.05939	-1.335250	***Ln DIS***

Source: Research Findings

Table 12: Model estimation results for member countries of the OPEC using the random effects method before the imposition of sanctions

Dependent variable: Export (***Ln RX***)			
P- value	**t statistic**	**coefficient**	**Independent variable**
0.0000	-8.804116	-114.2639	Constant (C)
0.0000	6.574715	3.549974	Ln GDP_i
0.0000	8.028955	1.591401	Ln GDP_j
0.0000	-10.08881	-1.175045	DPIC
0.0000	-5.112781	-0.315417	Ln DIS

Source: Research Findings

Table 13: Model estimation results for member countries of the ASEAN using the random effects method before the imposition of sanctions

Dependent variable: Export (***Ln RX***)			
P- value	**t statistic**	**coefficient**	**Independent variable**
0.0000	-6.084546	-73.26502	Constant (C)
0.0000	6.340837	2.267270	Ln GDP_i
0.0000	15.34526	1.843623	Ln GDP_j
0.0001	-4.082474	-0.407269	DPIC
0.0606	-1.893846	-1.803469	Ln DIS

Source: Research Findings

Table 14: Model estimation results for member countries of the ECO using the fixed effects method after the imposition of sanctions

Dependent variable: Export (***Ln RX***)			
P- value	**t statistic**	**coefficient**	**Independent variable**
0.0000	-4.558379	-31.28950	Constant (C)
0.0017	3.186756	0.961536	Ln GDP_i
0.0000	12.14871	1.317553	Ln GDP_j
0.8650	0.170332	0.011445	DPIC
0.0000	-11.10737	-1.339042	Ln DIS
0.2058	1.270095	0.260646	TAH

Source: Research Findings

Table 15: Model estimation results for member countries of the OPEC using the random effects method after the imposition of sanctions

Dependent variable: Export (***Ln RX***)			
P- value	**t statistic**	**coefficient**	**Independent variable**
0.0000	-8.952724	-134.8980	Constant (C)
0.0000	7.092295	4.317885	Ln GDP_i

0.0000	8.334688	1.626821	Ln GDP_j
0.0000	-10.16944	-1.164254	DPIC
0.0000	-5.158220	-0.312637	Ln DIS
0.0112	-2.569073	-1.158570	TAH

Source: Research Findings

Table 16: Model estimation results for member countries of the ASEAN using the random effects method after the imposition of sanctions

Dependent variable: Export (***Ln RX***)			
P- value	**t statistic**	**coefficient**	**Independent variable**
0.0000	-6.162737	-82.20500	Constant (C)
0.0000	6.184735	2.615780	Ln GDP_i
0.0000	15.47998	1.852051	Ln GDP_j
0.0001	-4.153879	-0.412465	DPIC
0.0559	-1.930305	-1.828844	Ln DIS
0.1303	-1.523036	-0.498121	TAH

Source: Research Findings

As seen in Tables 11 to 16, this study first analyzes the factors affecting the exports of Iran to member countries of the three trade unions according to equation (3), and then estimates the effects of economic sanctions on the volume of Iran's exports to member countries of trade unions according to equation (4). According to the results of Tables 11 to 13, GDP of Iran and its trading partner, which represents the size of the economy of countries, has a positive polarity and predictable bearing on member countries of the three trade unions. This variable is also statistically significant for all three groups at the 95% confidence interval such that one percent of increase in this variable will lead to more than one and a half percent increase in the volume of exports of Iran to its commercial partner. Thus, an increase in the size of the economy of countries will increase the volume of trade between them. The DPIC variable also indicates the difference in per capita income of the trading partners. The coefficient for this variable is negative for OPEC and ASEAN countries and is significant at the 95% confidence interval which is consistent with theoretical expectations. The negative impact of this variable on the exports of Iran to member countries of the OPEC is more that its impact on Iranian exports to member countries of the ASEAN. This variable is not significant for member countries of the ECO and is therefore removed from the model. The other variable studied is the geographical distance between the two countries. As seen in the table, the coefficient of the distance variable has an expected negative effect on the exports of Iran. This variable is also significant for all three groups. Taking the sanctions into account, we have achieved the results presented in Tables 14 to 16. As seen in the tables, by taking the sanctions into account, the coefficients of variables did not undergo significant changes whether in terms of magnitude and polarity or in terms of significance. The variable of sanctions has a positive polarity but insignificant bearing on ECO countries. Therefore, the variable of sanctions did not have an impact on Iranian exports to ECO countries and is excluded from the model. The variable of sanctions on Iranian exports to OPEC and ASEAN countries has a negative polarity and is significant for member countries of the OPEC at the 95% confidence interval. In other words, an increase in sanctions decreases 1.15 units of Iran's exports to OPEC countries. Also, economic sanctions on Iran's exports to member countries of the ASEAN are insignificant and excluded from the model. Therefore, the variable of sanctions is not significant for member countries of the ECO and ASEAN and only has a significant negative impact on the exports of Iran to member countries of the OPEC.

6. DISCUSSION AND CONCLUSION

The aim of the present study is to investigate the impact of economic sanctions on Iran's exports to member countries of the ECO, OPEC and ASEAN Union during the period 1992-2013. In this study, the gravity model is considered in two states: taking economic sanctions into consideration or leaving out economic sanctions. The results indicate that the economic size of countries has a positive impact on the volume of Iran's exports either by taking economic sanctions into consideration or by leaving it out. Also, the degree of similarity between the economic and geographical distance between countries has a negative effect on the volume of Iran's exports. The variable of sanctions has a negative and significant effect on the volume of Iran's exports to OPEC countries whereas it has no impact on Iran's exports to ECO and ASEAN countries and is therefore removed from the model. All member countries of the ECO are among Iran's neighbors and constitute a major target market for Iranian exports through adjacency and cultural and religious similarities. Iran should take advantage of this situation and try to increase its exports to these countries. Among the factors that affect exports are: holding economic exhibitions in neighbor countries for becoming familiar with business opportunities in those countries, emphasis on strengthening cooperation in the private sector on trade, investment and utilization of the capacity between countries, cooperation between the two countries for seeking appropriate ways to enhance the capacity and capability of the private sector in the fields of cooperation and strengthen the cooperative ties between the private sectors of the two countries.

Among the major problems of Iran in trade relations with neighboring countries, one can point out the limited range of Iran's exports, lack of banking relations between the two countries, transport and transit problems, and the absence of a common trade chamber between the two countries. Among other effective factors in the development of trade relations between Iran and its commercial partners and neighboring countries are: the establishment of common banks or Iranian banks in these countries, encouraging supplier companies to participate in the regional market, encouraging Iranian companies to set up various production lines in the form of a partnership, relying on the presence of consulting firms in these countries, and the presence of Iranian companies in the field of engineering and technical services. Besides, Iran can play a special role in providing services for transiting goods from Persian Gulf countries to East Asia because of its extensive, effective and efficient shipping industry, common land and sea borders with 15 regional countries, and huge transiting routes in the region. This opportunity can be used as a basis for the replacement of oil revenues by member countries (Mohammad Javad Zarif). According to the results of the estimation, the impact of sanctions on Iran's exports to member countries of the ASEAN is scheduled based on a planned strategy to become a social, political, economic, military and cultural union by 2015. The realization of this goal, which is not unexpected, would in political terms mean that Iran, in the near future, is to face another "European Union", this time on the East Side. Economically, the realization of the ASEAN Community provides a unified and potentially attractive market with a population of over 500 million people that could open up a new horizon for the exports of Iran and diversify its exchange patterns. With regard to local conditions and the changes and developments that are underway within the ASEAN and its surrounding areas, it is necessary for Iran to develop an active diplomacy to enter this area, identify the currents and power actors in these countries, discover penetrable aligned and non-aligned circles, and identify the existing opportunities and obstacles. The results also suggest that sanctions, among the three unions, have had the greatest negative impact on member countries of the OPEC. Finally, it is recommended that Iran shifts its diplomacy from the West to the East and target member countries of the ECO and then the ASEAN to neutralize the effects of sanctions.

ACKNOWLEDGMENTS

None.

ETHICAL CONSIDERATION

Authenticity of the texts, honesty and fidelity has been observed.

AUTHOR CONTRIBUTIONS

Planning and writing of the manuscript was done by the authors.

CONFLICT OF INTEREST

Author/s confirmed no conflict of interest.

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