

A SURVEY ON CAUSAL RELATIONSHIPS BETWEEN THREE VARIABLES INCLUDING GLOBALIZATION, COMPETITIVENESS AND EXPORT PROMOTION IN THE ECONOMY OF IRAN (1971-2009)

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Abstract

To enter into process of globalization, competitive environment and diversifying exports, use of foreign investment and expansion of technology are of importance, and without doubt, Export Promotion is the first step to link into the process of globalization. In economy of Iran that petrodollars shape a large share of Iranian exports, not just non-oil exports has been contracted under oil export, but also dependence of Iran's economy on oil revenues has brought about so many barriers to Competitiveness of Iran throughout the world. However, expanding non-oil exports not only leads to developing competitiveness but also rapidly joining the globalization process occurs with greater intensity. Causal relationship between variables of competitiveness and Export Promotion during 1971-2009 has been analyzed using Hsiao Causality Test. The results indicate that there exists a two-way causal relationship between rate of exchange and index of prices.

Keywords: Causal relationships, Globalization, Competitiveness, Export Promotion, Economy

Introduction

To access endogenous and sustainable economic growth, thinking about a better future without Currency revenues from crude oil sale, and the loss of importance of primary sources, as a relative advantage, insight into the phenomenon of globalization as a going process has to be changed. Because globalization enjoys the characteristics including Integration of trade, movement of capital, acceleration in technology exchange and technical advances and getting national economies closer to transnational economies, new definitions of economic relations, variables and policies have been proposed. In the context of globalization, production of goods and services for domestic consumption would no longer lead to proper development. In the context of tendency towards outward-oriented politics and free trade in the last two decades, developing countries have enjoyed proper Economic growth.

Theories of international trade and economic growth have recognized channels between the productivity levels of countries that interrelate with each other of which four channels are the most prominent ones.

International trade enables a country to use a variety of intermediate products and capital instruments.

International trade a country will be able to copy foreign technologies and convert them for use within the country.

International trade provides connective channel that stimulates education and production methods, plan for production, organizing methods and circumstances governing market between country borders.

International trade can enhance productivity within a country through developing new technologies or converting foreign technologies by which a huge impact on thorough productivity level of the economy within the countries would come to realize. Hence, to enter into the process of globalization and create a competitive space and diversifying export, use of foreign investment and technology overflows is of importance. In this respect it deserves to create a competitive context, a particular attention to export, and removing barriers and more importantly increasing the power of competitiveness have been enhanced, thus, international markets can be replaced with domestic markets. Globalization brings about competitiveness within itself, and competitiveness intensifies the procedure for globalization goes on. In other words, casual relationship exists between Globalization, Competitiveness and Export Promotion, and such an interrelated chain these variables affect each other so that cause intensifying each other. Yet, this relies on Economic openness towards foreign trade.

However, economic managers especially politicians have paid a particular attention to export and non-oil export, specifically extraversion Policy in foreign trade policy has not taken into consideration. Interesting topic in economy is the very ignoring the role of exports due to the presence of oil revenues. Relying on currency revenues from oil sale has caused challenging competitiveness in international economic relations come to realize. In this study, a discussion into globalization and competitiveness on non-oil export during 1971-2009 through econometric tools and Hsiao Causality Test, has been provided.

Theoretical analysis

The industrial revolution has brought about substantial developments in Europe in the late nineteenth century that access to new markets was considered definitive. It has caused an increase in trade appears such that a share of exports formed wholesale trade volume, and many countries experienced a substantial growth in their export, mentioned that Liberalization policies of governments have been the leading factors for growth of export that kept going slowly and then it gradually accelerated. This is in a way that growth of export reached to its peak in the 1990s, so that an increase in foreign trade and development policies are of importance and mentioned as indices of success throughout these countries.

Increasing competitiveness throughout countries across the world has led to globalization of economy. The competitiveness through the world trade organization and expanding agreements and decreasing tariffs and barriers to trade with a new approach led to competitiveness in most sectors. To encounter this severe competitiveness, economic activists have proposed extensive measures. The sharp increase in foreign trade has been followed by positive outcomes such as access to cheaper production factors, technological development, free movement of capital and investment. Following these developments, countries to find a way to protect national interests and increase global competitiveness have paid a particular attention to economic cooperation and regional integration.

Increased international competition of convergence and plurality of national economies, the accumulation of international capital and foreign investments are of positive outcomes of an international competition. In this regards, Global interdependence and

competitiveness as a bilateral relationship on specific aspects of casual relationships are evaluated. Positive approach of countries is the very notion of drawing attention to exports to be provided with it in the face of globalization and overcoming intense international competition. Rapid and dramatic changes in communications technology development and foreign investment have had a significant impact on global economy, that such changes have been followed by increasing foreign trade and share on exports. Strategy of export promotion would be followed by visions including International division of labor, Specialization of activities and expanding non oil exports. Experience of countries Taiwan, South Korea, Hong Kong, Singapore, China, and studies by Balassa, Krueger, Baldwin, Cairncros and Myint indicate that economic growth and development in developing countries can come to realize through integrating their economy in global economy (Behkish, 2001). Hence, factor of international competitiveness is of fundamental features in export. In other words, Globalization, Competitiveness and Export Promotion influence each other resulting in casual dependence on each other.

Globalization and Competitiveness

Create economic openness and reduce protectionist policy have been mentioned of positive outcomes resulted from the impact of globalization on national economy, that lead to increasing efficiency of domestic economy through increasing power of competitiveness. Other advantages of creating economic openness have been mentioned access to superior technology, more capital and higher investment volume. In general, developing countries devote some of their revenues to support and pay subsidiary to export goods, so that such an act would lead to removing real competitiveness among exporting goods and unrealistic relative prices. Hence, supporting export has been ruled out in The process of globalization. In such a situation, some goods would sustain on in export sector that would be found with relative advantage in production. Reducing tariff restrictions on imports is of key WTO principles in the process of globalization, thus globalization leads to reducing tariffs and increasing imports within states. In the economic sphere, globalization is the integration of national economies with expanding trade and free market economy. Hence, in the process of globalization, competitiveness expands from the regions throughout the world, and the countries are more successful that have more power in international trade including exports and imports. Moreover, countries To be successful, relates to economic structure, rules and regulations governing the country (Kalbasi and Jalei, 2003). Increasing foreign direct investment flows has been mentioned as one of the main features of globalization. Globalization is a complex phenomenon with multiple dimensions. Most economists have found The growth of trade and foreign direct investment and the growth of multinational companies of features of globalization. Further, other features for globalization have been mentioned the very trade liberalization and reduction of protectionism, that it can be investigated both in the contexts of exports and imports. As mentioned, there exists a casual relationship between globalization and competitiveness that a concise explanation about the concept of competitiveness is required before going through defining the relationship between these two factors of importance.

Competitiveness

Enhance the competitiveness of the national economy leads to the process of globalization. This approach through the formation of market governance and activities on the basis of

comparative advantage is achieved. Being competitive in global interactions underlies getting good success in the international markets. World Economic Forum finds competitiveness in the national economy's ability to sustain growth and maintain a standard of living (GDP per capita). Organization for Economic Cooperation and Development evaluates competitiveness a country's ability to produce goods and services to supply them in international markets and simultaneously maintain Promotion of citizens' income in long-term. Heit et al consider competitiveness appearing internal produced goods and services to international markets. In viewpoint of Kohman, competitiveness is an economy's ability to sustain on its share in international markets and/or increase its share in the market, and a result UNCTAD knows precise concept of competitiveness in the country's ability to sell products in the global market. The common concept in all definitions provided for competitiveness is the very access to a proper position of a country's economy within international markets. Given the definitions above, to increase power of competitiveness within international market, openness policies and increasing trade volume can be used. Hence, lack of building a competitive space makes being involved in global markets impossible, so that governments are committed to intervening in economy through building a proper competitive space and increasing national economic competitiveness. Ever since globalization of economy requires increasing foreign trade, further needs extroversion and export development to increase the competitive power, so it is better mentioned that such variables are intertwined with each other and are in casual relationships with each other. International competitiveness often is used to analyze the performance of the economy. Measure of international competitiveness compares some of the important economic characteristics that lead to influencing liberalization and improving the process of international trade for a country and its trading partners. International competitiveness not just focuses on quantitative factors, but includes qualitative factors regardless of needing to quantification. Hence, Innovation capacity of technology, specialty of production, quality of products and the value of after sales service are all of the factors that can influence a country's trade performance. Improving international competitiveness, not necessarily mean increased sales in foreign markets, but improving trade sale can be seen in the light of improving currency rate.

Competitiveness and non-oil exports

In other words, The difference between international prices and costs can be used to achieve compared and measured relative competitiveness (Tayebi et al. 2010). Countries have faced various threats and challenges to achieving the globalization process, Iran has been one of those countries faced these threats and challenges, but, adopting proper policies can help to convert them to opportunities. The competitiveness can be viewed from another perspective and that is the very the sources of competitiveness. Increasing Competitiveness within organizations in the community creates a competitive environment and ultimately improves national competitiveness. As the country's competitiveness in the world goes beyond, the country's more profits in integration into the global economy through easier access to foreign markets will come to realize. In contrary, the country with lower competitiveness, not just enjoys integration into global economy, but suffers from some weaknesses. What has to be taken into consideration lies in a fact that increasing competitiveness is the starting point for increasing national

competitiveness (Porter, 1999). International competitiveness often is used to analyze the performance of the economy. Measure of international competitiveness is used to compare some of the important economic characteristics that lead to affecting liberalization and improving international trade for a country and its trading partners. International competitiveness not just draws attention to quantitative factors but also qualitative factors that cannot be quantified. Hence, technology Innovation capacity, specialty in manufacturing, quality of products and value of after sales service are all factors that can affect a country's trade performance. Improve the international competitiveness necessarily does not mean increasing sales in foreign markets, but by improved commercial sale can come to realize by Improving conditions of the exchange rate, although export performance remained unchanged. In other words, compared and measured relative competitiveness can be achieved having difference in international prices and costs, (Tayebi et al, 2010).The variables which are used to create indices of competitiveness include Wholesale prices, retail prices index (consumer price index), the adjusted gross domestic product (GDP), export prices, the cost per unit of labor and exchange rates that all enjoy weaknesses and strengths. World Economic Forum (WEF) knows the competitiveness as the national economy's ability to grow or maintain a standard of living based on per capita income. In view of Organization for Economic co-operation and development, Competitiveness means the ability of a nation to produce goods and services to provide them in the international markets and simultaneously maintain or improve the income of citizens long-term.

Kohman(1984) believes that international competitiveness can be an economy's ability to sustain on its share within international markets and/or increase its share within market provided that standards of living for the ones involved in competitiveness process improved and/or decline of these standards avoided().

In this study, to make some of the challenges clear, a discussion on exploring about the topic of export and competitiveness during 1971-2009 has been addressed. Unfortunately, the key point lies in foundation of oil and currency revenues, while what affected the process of globalization and considered has been mentioned non-oil exports. For this, the process which goes on for exports and foreign trade and its casual relationship with the topic of competitiveness has been tested. Combining non-oil exports encompasses the factors including agricultural products, handicrafts, and other chemical products derived from the industrial sector. In this study, it can observe that unfortunately non-oil exports have been influenced of oil revenues and found with less influence of economic and trade policies coming from development plans. For instance, the total outcome from non-oil exports throughout the country has not enjoyed a stale procedure and has been influenced of oil revenues fluctuations. It seems that disregarding policies for encouraging exports has been found a severe impact on improper growth of non-oil exports. Trade liberalization against trade protectionism is raised so that the removal of quantitative restrictions on imports, unification of import tariffs, export subsidies and removing tariffs indicate trade liberalization (Dydrf, 2002). Furthermore, disregarding the principle of relative advantage and lack of an academic plan intensify such a situation whereby it can go in this way limitlessly. This study suggests that there has not existed an extensive relationship between non-oil export and competitiveness, where on national products have not placed in the proper way which goes on for competitiveness, and openness of economy has been found with extensive changes. Concurrent review of two variables including

Competitiveness and non-oil exports indicates connection between them, an insignificant and inverse process. Non-oil exports that were negligible before the revolution have enjoyed relatively higher competitiveness and this is reversed post revolution. Open door policy and extensive imports before revolution which have been relied on oil revenues were from the leading causes for such a process, but, given lack of stability in non-oil exports and poor performance in competitiveness in foreign trade strategy, the relationship between these two variables has been investigated.

An overview on studies

Leila Kalyaei(2002) has examined Effects of Iran accession to the World Trade Organization on agricultural sector, concluded that by Iran accession to the World Trade Organization on agricultural sector and reduction in government support, Taxes paid by producers have been reduced and as a result an increase in production and decrease in import have been resulted.

Abrishami, Mehrara and Mohseni(2006) in a study entitled “impact of trade linearization on growth in import and export”, has used dynamic panel-data estimation derived from a consistent generalized method of moments (GMM) using a survey on 23 selected developing countries. The results indicate that trade linearization would increase export growth about 190%. Hence, trade linearization brings about export growth. Hasan Kalbasi and Seid Abdolmajid Jalali(2001) have investigated impact of economy globalization on Iran’s foreign trade. In this study, after studying Import demand and export supply models for Iran’s economy, Import demand and export supply equations in three groups of Intermediate, capital and consumption goods have been estimated. The results from this study indicate that two sectors including agriculture and construction sectors have essential abilities to enter into global markets in capital and intermediate groups. On the other hand, it seems that the sector for consumption goods would be subjected to the most loss of the phenomena of globalization. Rosemary Oku(2004) has investigated impact of trade linearization on growth in non-oil exports in Nigeria. Obtained results indicate that growth in non-oil exports in Nigeria followed by the process of globalization in a short-term would go over measure the long-term. Anyhow, in addition to the correlation between trade linearization and growth in non-oil exports, more seemed that positive outcomes can be seen. It seems that growth in importing capital goods during this process prolife rates growth in non-oil exports.

Research methodology

Causality Test for the variables including prices(X) and currency rate(Y) using Hsiao Causality Test has been carried out. This method enjoys determining the optimal pauses based on minimum criteria for the final prediction error (FPE) and The estimated regression equations based on arithmetic pauses. Hsiao causality test using Time series data for two variables X_1 and Y_1 is as follows:

$$Y_1 = a + \sum_{j=1}^l a_j Y_{t-j} + \sum_{i=1}^l b_i X_{t-i} + U_t$$

$$X_1 = a_0 + \sum_{j=1}^l a_j Y_{t-j} + \sum_{i=1}^l b_i Y_{t-i} + V_t$$

According to the expressions above, U_t and V_t have the mean equal to zero, and fixed variance and uncorrelated distribution sentences. To test two zero hypotheses in the expressions below using general F statistics, regression equations 1 and 2 have been used.

$$\begin{aligned} \text{(a)} & \mathbf{b}_i = \mathbf{0} \quad , i = 1, 2, \dots, I \\ \text{(b)} & \mathbf{b}'_i = \mathbf{0} \quad , i = 1, 2, \dots, I \end{aligned} \quad (3)$$

The results of testing hypotheses followed by expression 3 are as follows:

a-confirming two zero hypotheses a and b indicates lack of casual relationship between X and Y.

b-accepting zero hypothesis a and rejecting zero hypothesis b indicate a one-way casual relationship from Y to X.

C- rejecting zero hypothesis a and accepting zero hypothesis b indicate a one-way casual relationship from X to Y.

d- rejecting both zero hypotheses a and b indicates a casual relationship from X to Y or vice versa.

Causality test based on regressions for expressions 1 and 2 suffers from two technical problems:

a- Possibility of non-stationary of data time series exists in regression analysis(This problem is solved by subtracting measurements).

b- Choosing corresponding tests would be optional by having the number of lags in regressions and effect of F-statistics from the structure of lags.

According to Hsiao's view(1979 and 1981), in this case the structure for optimal lag in regression equations through index of minimum prediction error can be determined.

Firstly given this method, regression equations for expressions 1 and 2 have been considered. Thereafter, optimal values for I and J using calculation of prediction error Y regard the expression below during several stages have been determined.

$$FPE_y(J, I) = \frac{(T+J+I+1)\sum(Y_t - Y)^2}{(T-J-I-1)-T} \quad (4)$$

According to the expression above, T is the number of observations, $FPE_y(J, I)$ is the Y ultimate prediction error for J lags of Y and I lags of X, and $\sum(Y_t - Y)^2$ is the sum of residuals square. To calculate FPE in compliance with expression 4, firstly the regression equation for expression 1 with lag j=1 for variable Y and lag i=0 for variable X is computed. Then, values for lag j=1 are added one by one. In case where FPE using expression 4 and condition i=j=0 are equal, FPE minimize is chosen. At the next stage assuming j the number of optimal j lags, regression equation for expression 1 assuming lag J=j for Y and I=I for X is carried out. In this case, the assumptions mentioned are tested to determine the causality relationship. Hence, structure determines the optimal lag for expression 2. In this case, equations 1 and 2 regarding optimal lags J and I for expression 2 can be written. Hence, the equations would be as follows:

$$Y_1 = \mathbf{a}_0 + \sum_{j=1}^J \mathbf{a}_j Y_{t-j} + \sum_{i=1}^I \mathbf{b}'_i X_{t-i} + U_t$$

In expression above, we have $i=1, 2, \dots, I^*$ and $j=1, 2, \dots, J^*$.

$$X_1 = \mathbf{a}'_0 + \sum_{j=1}^J \mathbf{a}'_j Y_{t-j} + \sum_{i=1}^I \mathbf{b}'_i X_{t-i} + U_t$$

According to the expression above, there exist $i=1, 2, \dots, I^{**}$ and $j=1, 2, \dots, J^{**}$.

Hence, given the expression, the conditions to accept or reject zero hypothesis (a) would be as follows:

$$FPE_y(J^*, I^*) < FPE_y(J^*, 0)$$

$$FPE_y(J^*, I^*) > FPE_y(J^*, 0)$$

Similar, the conditions as follows would set so as to predict minimum X:

$$FPE_x(J^{**}, I^{**}) < FPE_x(J^{**}, 0)$$

$$FPE_x(J^{**}, I^{**}) > FPE_x(J^{**}, 0)$$

Empirical results and analysis of results

According to the statistics and information extracted from National accounts during 1971-2009, and getting assured of stationary test for some variables, causality test has been carried out. Results from causality test based on error Standard of Hsiao prediction to determine whether there exists a casual relationship between general level of prices and exchange rate or not, have been shown in table 3. According to the results of this table and setting the expressions below, zero hypothesis in expression 3 is rejected.

$$FPE_y(J^*, I^*) < FPE_y(j^*, 0)$$

$$FPE_x(j^{**}, I^{**}) < FPE_x(j^{**}, 0)$$

Hsiao causality test for the data assigned to exchange rate(Y) and general level of prices(X) has been carried out to indicate how the relationship between exchange rate and general level of prices is in Iran. Data has been gathered referred to the years 1971-2010 and results are as follows:

FPE value in the first equation in lag $i^* = 3$ and $j^* = 3$ has been minimized, so that $FPE_y(3,3)$ has been minimized, and FPE value in the second equation in lag $i^* = 1$ and $j^* = 6$ has been minimized, so that $FPE_x(1,6)$ has been minimized. The parameters shown in equation 1 have been brought in table 1. The results from estimation of equation 2 have been shown in table 2.

Table 1 . The parameters shown in equation 1 have been brought

Results of estimating equation 1			
	t-statists	Estimated variable	Explanatory variable
$R^2 = 0.984225$	-0.92	-45.82	Y(-1)
	0.89	66.87	Y(-2)
	-0.12	-6.63	Y(-3)
F-statistic = 291.1639	4.13	0.97	X*(-1)
	0.43	0.17	X(-2)
	-0.52	-0.18	X(-3)

Results of estimating equation 1			
	t-statists	Estimated variable	Explanatory variable
$R^2 = 0.986697$	8.49	0.92	X*(-1)
	-0.92	-32.36	Y(-1)

F-statistic = 254.2973	0.97	68.43	Y(-2)
	-0.95	-79.26	Y(-3)
	0.98	84.83	Y(-4)
	-1.28	-102.98	Y(-5)
	1.93	91.47	Y(-6)

Table 2

	$FPE_x(j^* = 1, i^* = 0)$	
Second equation(index of prices)	478000	389000

Table 3

	$FPE_y(j^* = 3, i^* = 0)$	
First equation(exchange rate)	31/83	14/9

According to tables 1 and 2, just the coefficient of the first lag at the variable x is statistically significant. This means that in the intervals under study (1971-2009), the first lag at the variable the general level of prices statistically affect the general level of current prices and exchange rates. A high explanatory power has been achieved in both equations ($R^2 = 0.984225$, $R^2 = 0.986697$). Further, according to F-statistics, assumption based on that all coefficients are simultaneously zero is rejected and the regression test indicates an acceptable result. To Hsiao's Causality Tests, FPE limited values associated to equations 1 and 2 have been indicated in table 3. As observed, since there exists $FPE_y(j^*, 0) > FPE_y(j^*, i^*)$, zero hypothesis(a) is rejected. Further, as there exists $FPE_x(j^*, 0) > FPE_x(j^*, i^*)$ for Price index equation, zero hypothesis is rejected. Hence, due to the fact that both hypotheses (a and b) have been rejected, it can state that there exists a two-way casual relationship between general level of prices and exchange rates.

Conclusion

Recent developments in the integration of national economies in order to strengthen the process of economic globalization and its development have been appeared. Many countries, especially developing countries, while keeping up with providing foreign trade and the movement toward international markets, are looking for a place. In this respect, according to outward-oriented strategy and seeking to export, especially industrial export, most of these countries seek to the globalization process. As seen, four cases assumed for testing the assumption for expression 3. The case by lack of a casual relationship, casual relationship from X to Y, casual relationship from Y to X, and a two-way casual relationship have been realized in this study. The results of testing hypothesis indicated that variables under study found with a two-way casual relationship, that is, variables of exchange rate enjoy a casual effect on variable of index of prices and variable of index of prices enjoys a casual effect on variables of exchange rate. According to the results of this study, Foreign Trade Policy makers should pay more attention to outward-orientation process and export promotion. With regard to the development of export and non-oil

exports, especially industrial exports, the variable of competitiveness is strengthened and contributed to the international arena. This is a solution for converting challenges into opportunities in globalization and involving in WTO and testing to establish the cause and effect relationship between two variables. In other words, an infrastructure to enter into the phenomenon of economy globalization can be tested.

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