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Studying the Globalization Effects of Economics on the Export of Persian Carpet

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***Abstract*- Trade liberalization is defined as a process which leads to remove the imposed restrictions on foreign relations of countries by the governments in order to achieve an open line world economics. In this research, index of level of international trade was used to study the globalization effect on the export of Persian carpet. The required data for this research is collected (1976-2011) from IRI Foreign Trade Statistics Yearbook, Statistical Yearbook of the International Monetary Fund, Export Development Center of Iran as well as the different publications of the central bank. The results showed that the income of importing countries, domestic production and real exchange rate have positive and significance effects on the export of Persian carpet. However, the virtual variable effect of the war on the export of this product has been negative. Moreover, the sign of Level of International Trade variable was positive in the estimated model which shows that trade liberalization may lead to increase the export of Persian carpet.**

***Keywords* – About Trade Liberalization, Export, Carpet, Index of Level of International Trade, ARDL Approach.**

I. INTRODUCTION

Globalization is an increasing process which would affect various aspects of human life. There are different viewpoints, and sometimes opposite, about globalization so that some considers it as a threat. However, from most economists' viewpoints, globalization is basically a safe phenomenon. Lukasiewicz et al. [4] believe that the globalization word is so common but it is the most important, dangerous and misleading word of our time who everyone defines it in its own way. According to [16], globalization is a social process in which geographical restrictions, casting a shadow over the cultural and social relations, destroys and people increasingly become aware of a decrease in these restrictions. In the area of economics, the explanations and definitions provided for globalization are different and so wide, too. The first normal understanding of globalization of economics has an equal meaning with internationalization which considers the growth of international exchanges and interactions. In the second usage, it is considered as a liberalization which refers to remove the imposed restrictions on foreign relations of countries by the governments in order to achieve an open line world economics. Trade liberalization policies affect the whole structure of economics. Executing customs tariffs and paying export subsidies are of strategies which have been executed in different countries in order to support various economic sectors in the process of integrating the world economics. According to the regulations of World Trade Organization, however, such domestic supports, which result in price deviation, could not be continued forever. It was laid down to decrease in tariff & non-tariffs obstacles and also restrict to export subsidies according to these agreements [6].

It is believed that the Persian carpet, considering the high quality and originality of its motifs, has a high potential in world markets. In this research, it is attempted to take the globalization effects of economics on the export of Persian carpet into consideration. Hence, the consequences of trade liberalization on the export of this commodity would be examined.

II. LITERATURE REVIEW

Mohseni [7] examined the effect of trade liberalization on the nine selected import goods in the form of classifying the consumer, intermediary and capital goods. In this research, the incomplete substitution model and in the form of goods in which variables of tariff and non-tariff generalized obstacles were used to estimate the parameters of demand function of imports based upon co-integration approach during 1981-2003. The results showed that the demand of imports increase up to more than 1.5 in all selected goods group before the trade liberalization, however, the combination of import tends to capital goods after the trade liberalization. Lotfalipour et al. [3] studied the effect of trade liberalization on the agricultural sector in Iran. The results showed that the shock of trade liberalization has a positive and little effect on the agricultural products demand; whereas it has a significant effect on the agricultural products supply. In the meanwhile, the liberalization indexes have no significant effect on the agricultural products import, but their export is subjected to the liberalization indexes. This happens because of a high capacity of government role in the agricultural products import and not following of the economic variables in importing them. Monjazi et al. [8] made use of Level of International Trade to determine the effects of trade liberalization on the import function of the wheat product of Iran. Estimating the wheat import function showed an increase in import demand before trade liberalization, which this is more long-term than short-term. Moreover, advances in technology would cause a decrease in wheat import demand in both short-term and long-term. Hung and Rozelle [1] examined the effect of trade liberalization on the rural agriculture and economics in China and came to this conclusion that trade

liberalization would impose both positive and negative effects on them. They found that some sectors would suffer because of membership in World Trade Organization, but the most sectors would benefit from it. After joining China to WTO, for instance, agreements reduced the negative effects in most cases. In some cases, indirect and long-term benefits such as ask permission to enter new technology and converge towards international marketing would have positive transfer effects on China. Their study showed that joining WTO is a part of the long-term process of efficiency improvement. Pangarkar and Wu [11] examined the globalization effects on the China's industries and economic firms as an emerging market. Their results show positive impact of globalization on the industries and especially economic firms so that when such firms which have taken part in globalization process experience slack of resources have better performance than firms which not take part.

By examining the studies which have considered the effects and consequences of the globalization of economics, it makes clear that various indexes are used to measure the globalization of economics which among them Level of International Trade and Integration of International Trade have had more efficiency because of their special benefits and ease of calculation. In this research, it is attempted to study the globalization effect of economics on the export of Persian carpet using Level of International Trade.

III. Materials and Methods

Studying the integration volume of goods, service, trade, and capital markets in the world markets seems necessary to measure the globalization volume of economics [5]. Since measuring the globalization of economics is still in its early stage, there are different viewpoints and some various variables have been proposed as an index [10] and [2]. Examining different studies show that the index of Level of International Trade is considered as one of the suitable criterion to measure the globalization of economics [6]. Level of International Trade, which can be obtained from the following equation, shows the extent of international relationship for a specific industry (sector):

$$LIT = \frac{(X_t + M_t)}{(P_t + M_t - X_t)} \quad (1)$$

Where, LIT is the extent of given international relationship of industry (sector), X_t is export, Mt is import and P_t is the product of a given industry (sector).

The more small the above calculated index, the more reality become evident that international relationship in the form of import and export is not a significant aspect of a given industry (sector), in other words, the trade contribution of that specific sector, with respect to the amount of its manufactured products, is lesser [5].

In this research, the export function is used to estimate the effective factors on the export of Persian carpet in the following way:

$$X = f(\frac{P_d}{P_w}, Y, ER, PRO) \quad (2)$$

Where, $\frac{P_d}{P_w}$ is the ratio of the domestic price to the world price, Y is the income of importing countries, ER is the foreign currency rate, and PRO is the domestic product of a given goods.

In addition, Level of International Trade variable is added to the above model in order to study the globalization and liberalization effects. The final model of export supply of carpet is as follows:

$$XC = \beta_0 - \beta_1(\frac{P_{DC}}{P_{WC}}) + \beta_2 Y + \beta_3 RER + \beta_4 PROC + \beta_5 LIT \quad (3)$$

Where, XC is the export volume of Persian carpet; PDC and PWC are the domestic and world prices of carpet, respectively; L is the weight average of gross domestic product of the main importing carpet countries (Germany, Italy, USA and Canada); RER is the real foreign currency rate; PROC is the domestic product of carpet; and LIT is the index of Level of International Trade for carpet.

3.1. Autoregressive Distributed Lag method (ARDL): The use of normal minimum squares method would not provide an unbiased estimation to evaluate the long-term relation in studies which deals with small samples (number of less observations) because it does not consider the available short-term dynamic reactions between variables. The use of Mount Carlo's modeling method showed that the bias of estimation might be significant. So, a model is needed to have the short-term dynamics in itself and can result in more accurate estimation coefficients of a given model [9]. Pesaran & Shin [13] proved if the vector of convergence in OLS method can be obtained according to an ARDL relation, whose lags have clearly been stated, it would have the estimator of normal minimum distribution squares, fewer diagonal and more efficiency in small samples.

The general form of ARDL model (p,q1,q2,…,qk) can be stated as follows:

$$\phi(L,P)Y_t = \sum_{i=1}^{k} b_i(L,q_i)X_{it} + c'w_t + u_t \quad (4)$$

The above model is called ARDL, where we have:

$$\phi(L,P) = 1 - \phi_1 L - \phi_2 L^2 - ... - \phi_p L^p \quad (5)$$

$$b_i(L,q_i) = b_i + b_{i1}L + ... + b_{iq}L^q \qquad i = 1,2,...,k \quad (6)$$

Where, L is the temporal lag agent for the first time; Y_t is the dependent variable; X_{it} is the vector of explanatory variables; q_i is the numbers of optimized lags related to dependent variable; and w_t is the vector of fixed variables such as width from source, virtual variables, temporal process or exterior variables with fixed lag.

In this research, the dynamic form model used is to determine the globalization effect on the export of Persian carpet as follows:

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$$XC_t = C - \sum_{i=1}^{n} \beta_{1t} \left(\frac{P_{DC}}{P_{WC}}\right)_{t-i} + \sum_{i=1}^{n} \beta_{2t} Y_{t-i} + \sum_{i=1}^{n} \beta_{3t} RER_{t-i} + \sum_{i=1}^{n} \beta_{4t} PROC_{t-i} + \sum_{i=1}^{n} \beta_{5t} LIT_{t-i} - \beta_6 DU57 \quad (7)$$

Equation (4) should be estimated all values of p=0,1,…,m, q=0,1,…,m and i=1,2,…,k; i.e. the number of various regressions (m+1)k+1 by normal minimum squares method. m is the maximum lag which is determined by researcher and k is the number of explanatory variables. n the next step, one of the equations is selected according to one of the Akaike Information, Schwartz-Baysian and Hannan-Quinn criteria and/or coefficient of modified determination [15]. Pesaran and Shin [13] suggest the Schwartz-Baysian criterion to determine the model optimized lags. This criterion saves the number of lags with respect to the smallness of sample volume and prevents losing a lesser degree of freedom.

To calculate the long-term model coefficients, same dynamic model is used. The long-term coefficients related to variables of X can be obtained of the following equation:

$$\theta_i = \frac{\hat{b}_i(1, q_i)}{1 - \hat{\phi}(1, p)} = \frac{\hat{b}_{i0} + \hat{b}_{i1} + ... + \hat{b}_{iq}}{1 - \hat{\phi}_1 - ... - \hat{\phi}_p} \qquad i = 1, 2, ..., k \quad (8)$$

Now, we can make use of the method introduced by Pesaran et al. (1996) to study that the long-term relation resulted from this method is not false. In this method, the existence of the long-term relation between under study variables by calculating statistic F is examined to a significant surface test with variables lag in the form of error correction. The important point is that the distribution of mentioned F is not standard. Pesaran and Pesaran [12] calculated the suitable critic values analogous to the number of regressions and whether the model includes width from source and process or not. They introduced two groups of critic values: one, on this basis that all variables are static and the other one is that all are dynamic (it became static by one time differential calculus). If calculational F is outside the range, a definite decision should be made without knowing the I(0) or I(1) variables. If it is beyond the upper area, null hypothesis would be rejected according to non-existence of any long-term relation. On the contrary, if it is lower than the below area, the mentioned null hypothesis would be accepted. If calculational F is between these two areas, the results would be indefinite and depend on the I(0) or I(1) variables [15].

The most important advantage of ARDL method, among co-integration methods, is that it is applicable without considering this issue that the model variables are I(0) or I(1). In other words, there is no need to divide them into the correlated variables of 0 and 1 degree [15].

The required data for this research is collected (1976-2011) from IRI Foreign Trade Statistics Yearbook, Statistical Yearbook of the International Monetary Fund, Export Development Center of Iran as well as the different publications of the central bank.

IV. Discussion and Results

The first step in estimating a time series model is the stationary test of variables of that model. Generally, each time series is called stationary when its variance and average are fixed during the time and the covariance value between two temporal periods only depends on the pace or lags between two periods and don't have any relation to the actual time of covariance calculation. In order to the stationary study of temporal series, the Augmented Dikey-Fuller Test (ADF) is used, whose results show the logarithm variable stationary of the domestic product of carpet, but other studied variables are not in the stationary surface and became static by one time differential calculus. Since, there is a combination of I(1) and I(0) variables, therefore, the existence of co-integration relation between variables should be examined by a suitable method.

Table 1: The Detailed Results Obtained from Estimating the Model Coefficients by ARDL (0,1,1,0,0,1)

Variable	Coefficient	t-statistics	Probability
$L(\frac{P_{DC}}{P_{WC}})$	−0.41	−1.26	0/222
$L(\frac{P_{DC}}{P_{WC}})$ (-1)	0.29	−1.23	0.233
LY	0.17 **	2.51	0.022
LY(-1)	0.13 **	2.14	0.039
LRER	0.48 *	1.98	0.051
LPROC	0.41 **	2.66	0.016
LLIT	0.09 **	2.07	0.049
LLIT(-1)	0.002	1.52	0.145
DU57	−0.65 **	−4.71	0.000
C	1.56 *	1.91	0.073
R^2= %91	R^{bar2}= %88	F= 109.54	

***, ** and * indicate the significant order of %1, %5, and %10 levels.
Source: Research Findings.

To analysis the long-term and short-term relation between variables, the Autoregressive Distributed Lag method (ARDL) was used [12]. The detailed results obtained from estimating the model coefficients are shown in Table (1).

To make sure of establishing classical assumptions (lack of autocorrelation, correct functional form, normal distribution of remained statements and similarity of variance) may use the determination statistics. Since, the probability of all calculational statistics is more than 0.05; therefore, this may assure the establishment of classical assumptions. The Bound Test, provided by Pesaran et al. (1996), was used to examine the long-term relation between the model variables. Since, the statistic of calculational F has been higher than the critic value, the null hypothesis is rejected on the basis of lacking the long-term relation and it can be concluded that there is the long-term relation between variables.

After proving the long-term relation between variables, we provide the long-term coefficients obtained from the

model estimation. These results have been reported in table (2).

Table 2: The Results Obtained from Estimating the Long-term Coefficients by ARDL (0,1,1,0,0,1)

Variable	Coefficient	t-statistical	Probability
$L(\frac{P_{DC}}{P_{WC}})$	-0.62 *	−1.94	0.069
LY	0.44 **	1.97	0.037
LRER	0.91 **	2.17	0.043
LPROC	0.34 *	1.92	0.071
LLIT	0.19 *	9.84	0.081
DU57	-1.24 ***	−3.05	0.006
C	2.98	1.64	0.113

***, ** and * indicate the significant order of %1, %5, and %10 levels.
Source: Research Findings.

The table results show that variable of logarithm ratio of the domestic price to the world price of the export of Persian carpet has not a significant effect in the long-term. Lack of ineffectiveness of this variable on the export of Persian carpet relates to the market structure of this product. That is, there is a buying monopoly in the market of this product. Four main buyers of this product are Germany, Italy, USA, and Canada which they have %62 of the market share that indicates a severe multilateral monopoly in this market [14]. As a result, it can be said that carpet price is not considered as an effective factor in its export. The income of importing countries has a positive effect on the export of Persian carpet.

So, the amount of export of this product increases %0.44 with one percent growth in the income of importing countries. Also, real foreign currency rate has had a positive and significant effect on the export of Persian carpet. Productive power is also positive and has had a significant effect on it. Positive coefficient of Level of International Trade variable indicates that trade liberalization has a positive effect on the export of this product and the amount of its export would be increased through a tendency towards the world economics. Virtual variable of the imposed war has a negative and significant effect on it.

The existence of co-integration between a set of economic variables provides the statistical base for the error correction models (ECM). These models have an increasing popularity among empirical studies. The most principal reason for this popularity is its error correction models that connect the short-term frequencies of variables to their long-term balanced values (Noferesti, 1999). The results obtained from estimating the error correction model coefficients are shown in Table (3).

Table 3: The Detailed Results Obtained from Estimating the Model Coefficients by ARDL (0,1,1,0,0,1)

Variable	Coefficient	t-statistical	Probability
$dL(\frac{P_{DC}}{P_{WC}})$	−0.41	−1.26	0.222
dLY	0.17 **	2.51	0.022
dLRER	0.48 *	1.98	0.051
dLPROC	0.41 **	2.66	0.016
dLLIT	0.09 **	2.07	0.049
dDU57	−0.65 **	−4.71	0.000
dC	1.56 *	1.91	0.073
dECT(-1)	-0.31 **	-2.36	0.032

***, ** and * indicate the significant order of %1, %5, and %10 levels.
Source: Research Findings.

As it is shown in Table (3), trade liberalization would also have a positive effect on the export of Persian carpet in the short-term, which it confirms trade nature of this product. In addition, an increase in the carpet domestic product and the income of importing countries has an increasing effect on its export in the short-term. The error correction coefficient is equaled -0.31, which is statistically significant. Thus, if the model goes out of balance, %31 of imbalance is modified in every period and it takes more than 3 years to rebalance the model.

V. SUGGESTIONS

With respect to the globalization of economics, it is required to know the governing regulations and restrictions of economic structure to provide a necessary background for the convergence on the world economics. One of the most important tools is necessary investments to increase the production amount and improvement of quality of these export-grade goods, considering a high potential of competition of Iran in the carpet world market. On the other hand, it would be better to establish new target markets for making this export-grade product capable of earning foreign currency by introducing more Persian carpets. Trade liberalization and integration of world economics considerably cause an increase in the export of Persian carpet. Hence, it is suggested to take necessary actions for increasing its production and reducing the existing barriers against export.

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