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Estimation of major factors on exports of livestock with point out to effects of trade liberalization

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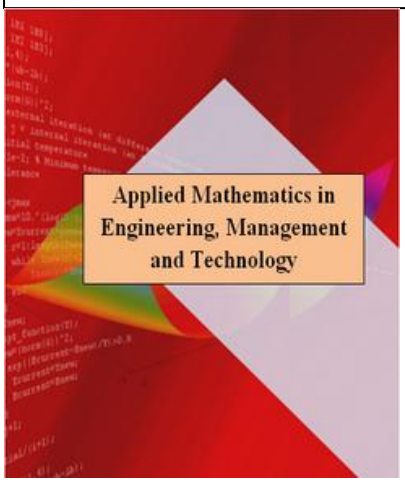

ABSTRACT

External business and export is one of the important challenges in all of the countries, excluding tariffs and non tariffs restricts, every countries follow to how maximize its business benefits in materials and services production and exports. Our country not exempt since this subject, however, ours oil wealth; is caused unimportance to export of non-oil. Meanwhile, with the view of export of non-oil shows which livestock have enormous important for business and exports.
For this aim, this study tried to evaluate of main factors that affect to export livestock. In order to this purpose, data series from 1967 to 2006 and ARDL methods were used for analysis of diplomacy. The result showed that in long-run term, price products of livestock, liberalization trade and value added of agricultural sector have effected positively on exports of livestock to order with parametric0.26, 0.29 and 0.84. In short run, on first order of lag in retail price and liberalization trade and value added of agricultural sector have positive and significant effects with parametric0.42, 0.43 and 0.13. The results indicated that in short period, about 58% from deviation of short time of export and balanced rate of long time has been adjusted in along one period. Therefore, trade liberalization cause to improve exports of livestock's products significantly.

Key words: Export, livestock, trade liberalization

1.Introduction

In the present circumstances, political and economic life of many developing countries, including Iran, is heavily dependent on revenue from the export of raw materials; while in most of these countries have been seen very little variation of exports. In Iran librating from economy depends on oil revenues, with existing of talents in suitable production and exports of some of non-oil products and goods, especially livestock products, through understanding and strong support from regional talent seems necessary. There is also the phenomenon of globalization in recent decades has been discussed by policy makers and planners. The impacts of globalization of Interlacing and the integration of national economies with the global economy can be considered in increasing the international trade, globalization of production and the flow of foreign direct investment (Saffari, 1384). In Symposium on economic globalization, liberalization and globalization of the economy were defined as equivalent to the growth of trade, growth of foreign direct investment and increasing of multinational corporations in international trade (Arndt, 1997).With signing the general agreement on tariffs and trade Uruguay round negotiations of GATT in 1994 and the World Trade Organization formation, a comprehensive effort to liberalization of trade in agricultural commodities began. Implementation of relevant commitments and agreements has important implications and impacts on how member and non-member countries develop the agricultural sector so examination of it for countries like Iran that is importer and exporter's agricultural commodities is really important. Liberalization and globalization cause increasing the volume and type of cross-border transactions in goods and services, and increasing international capital flows and also accelerating technology transfer (Nawazish, 1998). However, there are of different opinions about effects, profits and losses resulting from liberalization. Accordingly, some argue that globalization process has the potential to accelerate the industrialization of developing countries and therefore creates a significant benefit to countries. In this respect Teite (2005), states during 1950-98 in the world global exports have increased parallel to increasing in the level of globalization. In addition, the export share of world GDP from 5/5 in 1950 has increased to 5/10 percent in 1973 and 2/17% in 1998. Also Wurtenberger and et al (2006) in their study on the effect of trade liberalization on the agricultural sector stated trade liberalization has caused increasing export of agricultural products from $ 32 billion in 1961 to $ 445 billion by 2002. Milner and Gufu (2006) also examined various policy liberalization on economy of Malawi observed that the elimination of taxes received from exports, exports of Malawi will grow 26 percent. While eliminating tariffs and physical barriers, exports increase respectively 5 and 8 percent. Wurtenberger and et al (2006), in analyzing the benefits of trade based on comparative advantage have used the concept of virtual ground. The results showed that wheat market liberalization in Switzerland will increase imports by 25% that this reduction rate in

import followed 4 percent increase in socio- economic desirability and 11 percent decrease in environmental desirability. Addition to above studies, Dadgar and Naji Meydani (1382) addition to introducing various indicators of globalization, studied on globalization process over the past three decades in Singapore, United Kingdom, Argentina, Japan, France, Turkey, China, India and Iran. The results showed that globalization in most countries associated with increasing export to low-income and middle-income countries. According to what was said, the country's success in the enjoyment of the benefits of liberalization and globalization depends on the structure, rules and regulations prevailing in the country's condition and ability in supplying to the international market and active participation in the business. Generally, each country according to its national and international objectives takes specific policies in various fields, including trade. Noteworthy is that the objectives of multiple countries are in contradiction and countries in selecting their trade policy should reduce conflicts among objectives As much as possible. The country sets trade and economic relations with other countries should follow international regularities in the process of exchange (Tayebi and Mesri Nejad, 1386). Meanwhile, Iran is a large country with varied climates that its agricultural sector has considerable ability to supply products to the world market. Also, nowadays supplying of people food especially animal protein is very important and is affected by many of the world's political problems. Livestock farming is one of the most important parts in agriculture, it is done in different ways in the world and in some countries it has the highest share in gross national income, its exchange technology is high despite desirable conditions for the export of some livestock products which Iran has the advantage of producing, makes Necessity of studying phenomenon of globalization and its impact on the export of livestock products is more evident (the site animal's supports affairs). The overall objective of the present study is studying the factors affecting the export of livestock products due to the effects of trade liberalization.

2.Methodology

The present study, export supply function of livestock products is estimated. Assuming suppliers of export of Iran livestock products are small, they are receptor of price and their products offer in competitive markets. In the other hand according to nature of the trade policy adopted in the country (import substitution policies), non oil export (livestock production) is as the excess of domestic demand. And also it is assumed that due to the nature of livestock production, the supply of these goods creates its own demand. To estimate export function, a logarithmic model is used as follows:

$$\ln X_{it} = \beta_0 + \beta_1 \ln P_{it} + \beta_2 \ln V_{it} + \beta_3 \ln VA_{it} + \beta_4 \ln GLB_{it} + u_t$$

Sale of livestock products and where V the logarithmic index of changing in the exchange rate and VA value added agriculture and GLB trade liberalization rate index is that with sum of exports and imports to GDP obtains. In order to study short-term, long-term relationships between the dependent variable and the other explanatory variables in the model, co-integration methods such as the method of 1 Engel Granger and error correction model (ECM) can be used. However, due to limitations exist in the methods of Engel Granger and ECM model and also to avoid the shortcomings of these models and biasing in small samples and inability to perform hypothesis testing; it is suggested appropriate methods for the analysis of long-term and short-term relationships among variables that ARDL approach can be mentioned in this regard. In use of this approach it is not necessary that degree of co-integration be the same. In addition, this approach simultaneously estimates long-term and short-term patterns and removes the problem related to deleting variables and autocorrelation. Therefore, the estimations of ARDL method due to avoiding problems like autocorrelation and the being endogenous are unbiased and efficient (Nuferesti, 1378). Therefore, the current study used the ARDL model. Also for estimation of models and doing relevant test is used software packages of Eviews5 and Microfit4.1. The required data for this study was obtained from the Central Bank and the FAO for the time horizons of 1385-1346. The generalized ARDL model can be illustrated as follows (Pesaran and Shin, 1995). Dynamic ARDL Model for equation (1) is as follows:

$$LnX_{it} = \alpha_0 + \sum_{i=1}^{m} \beta_i \ln X_{it=i} + \sum_{i=1}^{n} \varepsilon \ln_i P_{it-i} + \sum_{i=1}^{f} \gamma_i \ln_i V_{it-i} + \sum_{i=1}^{k} \lambda_i \ln VA_{it-i} + \sum_{i=1}^{l} \lambda_i \ln GLB_{it-i} + u_{it}$$

Where l, k, f, n, m respectively represent the number of optimal interrupts for variables.
To estimate the long-run relationship, the two-phase method can be used as follows.
In the first phase, long-term relationship between the variables under study is tested. If a stable long-run relationship between the variables of the model were confirmed, in the second phase, estimation and analyzing of the long-run coefficients is performed. So the Long-term relationship can be expressed as follows:

$$LnX_{it} = \alpha_0 + \sum_{i=1}^{m} \beta_i \ln X_{it=i} + \sum_{i=1}^{n} \varepsilon \ln_i P_{it-i} + \sum_{i=1}^{f} \gamma_i \ln_i V_{it-i} + \sum_{i=1}^{k} \lambda_i \ln VA_{it-i} + \sum_{i=1}^{l} \lambda_i \ln GLB_{it-i} + u_{it}$$

(2)

The existing convergence between a set of economic variables, provides the basis of error correction models (Nufresti, 1378). The equation of ARDL error correction model can be written as equation (3):

(3)

$$\Delta LnX_{it} = \alpha_0 + \sum_{i=1}^{m} \widehat{\beta}_i \Delta \ln X_{it=i} + \sum_{i=1}^{n} \widehat{\varepsilon} \Delta \ln_i P_{it-i} + \sum_{i=1}^{f} \widehat{\gamma}_i \Delta \ln_i V_{it-i} + \sum_{i=1}^{k} \widehat{\lambda}_i \Delta \ln VA_{it-i} + \sum_{i=1}^{k} \widehat{\omega}_i \Delta \ln GLB_{it-i} + \theta ECT_{it-i} + u_{it}$$

The error correction component is as follows:
(4)

Where Δ function is the first difference and $\gamma_i, \varepsilon_i, \beta_i, \omega_i$ coefficients have been estimated from equation (4). θ Coefficient is error correction component, which measures the speed of adjustment.

3.Results and Discussion

To determine the appropriate estimation strategy, in the present study is used variables stationary test. When a variable time series is stationary which mean, variance, covariance and correlation coefficient is constant over the time. Type text or a website address or translate a document.
In other words, it is independent of time. In this respect, recognition of being stationary and non-stationary of time series variables is possible through various tests. Stationary of data used in this study is studied through 9 phases and the results are presented in Table 1. Based on the results in Table 1 obtained from unit root test of the country, all variables are not in stationary level and the dependent variable (1) is I.

Table 1: Results of the variables stationary test

Variable name		Stationary degree
lnx	Logarithm of livestock products export	I(1)
lnp	Logarithm of retail price	I(1)
lnV	Logarithm of exchange rate changes	I(1)
lnVA	Logarithm of changes in value added	I(1)
lnGLB	Logarithm of trade liberalization rate	I(1)

Source: Research findings

The results of the estimation of dynamic models using Schwartz's criteria – Bayesian and considering of and maximum 1 interrupt, is given in Table 2.

Table 2: Results of model test of dynamic ARDL (1,0,0,0,0,0)

Variable name		coefficients	Standard error
LnAX(-1)	Logarithm of export supply with one interruption	0/83***	0/106
Lnp	Logarithm of price	0/42*	0/255
lnexr	Logarithm of the exchange rate	0/30	0/3248
Ln GLB	Logarithm of trade liberalization	1/38*	0/535
LnVA	Logarithm of value added agriculture	0/47*	0/206
c	Intercept	22/43*	10/91
R2=0/9978		F=2221	

Source: significant level Research findings: *, ** and *** respectively significant at the level of 10, 5 and 1 percent

As can be seen in Table 1, the variables used, stationary is from the first order. For this purpose ARDL model can be used. Presence or absence of long-run relationship between the dependent variable and the other explanatory variables can be calculated using the F test. Computing F statistics is greater than Banerjee do Lamastr statistics, which showed long-term equilibrium relationship. The long-term equilibrium relationship is as follows:

Table 3: Long-term equilibrium relationship between exports of livestock products (1,0,0,0,0) ARDL

Variable name		coefficients	Standard error
lnP	Logarithm of the price of livestock products	0/26*	0/11
LnEX	Logarithm of exchange rate changes	-0/18	0/26
Ln GlB	Logarithm of trade liberalization rate changes	**0/29	0/13
lnVA	Log of value added agriculture	***0/84	0/15
c	Intercept	1/7	1/9

Source: Research findings *, ** and *** respectively significant at the level of 10, 5 and 1 percent

Estimated Long-term equation coefficients show export supply elasticities compared to long-term explanatory variables. Based on the results, variable coefficient of exchange rate changes index in not significant in long-term. Export supply is not dependent on reflecting of exchange rate changes from suppliers to producers of livestock products. The real price variable coefficient was positive and significant. This study directly shows the relationship between price and supply of livestock products export. Moreover export laws and the foreign currency obligations may cause immeasurable impacts such as the use of obtained foreign exchange for imports from the suppliers. Thus, exporters selling imported goods can gain worth more than the domestic price of foreign currency from per dollar revenue from own exports. Also rate of trade liberalization has positive effect on the livestock products export in Iran in long term. In summary, Table 3 shows the results of estimating model of export livestock products. Type text or a website address or translate a document.
As the table shows, in the long run, the price of livestock products, trade liberalization and value-added agricultural on exports of livestock products has a significant positive effect respectively to the statistics, 26/0, 29/0 and 84/0. Type text or
Based on the results, increasing economic integration with the global economy, exports of livestock products is changed. Variable of effect of globalization shows significant effects on the export of livestock products, variable of price of livestock products export have positive and significant effects with export of livestock products.
Existing of convergence between a set of economic variables provides the basis of using error correction models that in fact connects short-term fluctuations of variables to the long-term amounts. In order to study the short-run relationship between exports of livestock products and other the studied variables, the error correction model was used that its results for the supplying of export of livestock presented in Table 4.

Table 4: Results estimated of error correction model

Variable name		coefficients	Standard error
dLnX	First order difference of the log of export supply	***0/62	0/02
dlnP	First order difference of the log of the price of livestock products	*0/42	0/22
dLnV	First order difference of the log of exchange rate changes	0/30	0/34
dLnVA	First order difference of the log of value added agriculture	*0/13	0/05
DlnGLB	First order difference of the log of trade liberalization rate changes	**0/43	0/12
dc	First-order difference intercept	22/40	10/81
Ecm(-1)	Component of the error correction	**0/36	0/10
R2=0/54		F=4/40	

Source: Research findings *, ** and *** respectively significant at 10, 5 and 1 percent

Based on the results in Table 4, the first order difference of export of livestock products was significant and positive. Also in the short term as long-term effects, first-order differencing of trade liberalization rate was positive and significant. Including error correction coefficient is also significant (negative), and indicates that approximately 36 percent of the livestock export variable deviations from the long run equilibrium after on period are adjusted. So can be said the speed of adjustment in above model is high and there is hope to be effective in policies in the short-term.
Now by considering to this subject can be found solutions and offers as follows:

Considering that whatever greater is the distance between producers and exporters of livestock products, possible transferring of effects of macroeconomic policies (which have been adopted to encourage of exports) will be less, so it is recommended that the units of exported livestock products as much as possible be consists of its producers. This will hasten the reaction of exports to the country's macro policies.

Price and non-price information available to the exporters of livestock products should be clear in order to lead to better recovery in hastening of performance of export in developing of non-oil export.

Removing of Trade and non trade barriers is one of the items that are effective in goods export and efficient in business that this is also true in the case of livestock products. Joining of Iran into the WTO can reduce tariff and non-tariff barriers and trade liberalization rate will increase exports of livestock products.

Long-term strategies and short-term pricing policy for livestock products should be determined according to the criteria of Iran macroeconomic and commercial issues.

Trade liberalization can be effective from different channels, thus, it is possible common indicators, although used in studies don't be able to indicate conditions resulting economic integration toward the global economy.

The future researches about export of livestock products should be done according to other macroeconomic variables and more complete time period.

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