Ekonomi

Is price discrimination beneficial for Iranian pistachio exporters? evidence from Iran[*]

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ABSTRACT

The possibility of ending oil revenue and the idea of getting rid of oil economy has led policymakers in Iran to focus on increasing non-oil exports, especially agricultural products such as pistachio. Iran is one of the main producer of this product in the world. Also, price discrimination is one of the ways to increase the value and the amount of exporting products. On the other hand, the economy of the country faces with fluctuation in exchange rate? In recent years, exchange rate had experienced many instabilities in Iran and has remarkably increased. One of the most important effects of exchange rate fluctuations is; its effect on exporting price of different products. Exchange rate fluctuations can affect exporting price of different products to different destinations. So, the question in this study is that what the effect of exchange rate variations on exporting price of pistachio is? To do this, this paper examined this issue through the Pricing-to-Market approach among 32 importing countries over the period of 2001-2020. The method which is used is the Panel Data Regression and using fixed effects method for estimating the model. The results show that the hypothesis of the competition market for this product is rejected and exporters can use price discrimination behavior among different destinations. So, policy-makers can gain from the benefits of such a market for other product like pistachio.

I. Introduction

Economic competition is one of the main goals of every society for economic growth which is fundamental to economic development. The relationship between exports and economic growth has long been a subject of much interest in economic literature. Theoretical consensus on export emerged among neoclassical economists in the 1970s and 1980s after the successful story of newly industrialized countries. They suggest that exports expansion contributes to economic growth by increasing the rate of capital formation, enhancing the growth of factor productivity and then development of the country. In addition, competition in the world market also help producer to reduce inefficiencies (Jafari et al, 2014). Neoclassical economists emphasize on outward – looking policies and believe that export promotion is the proper policy to achieve economic development in developing countries (Asgharpour, 2017).

In the case of Iran's economy, the prospect of ending oil supplies and the idea of getting rid of oil economy has led policymakers to focus on increasing non-oil exports, especially agricultural products. In recent years, many studies have focused on the relationship between the exchange rate and the price of exported goods. The economic literature related to this topic is mainly developed around two completely similar and closely related topics. One of them is known as the ERPT, exchange rate pass through, which means the rate of response of the price of exported goods in terms of the currency of the destination country to exchange rate changes, or more simply, the percentage change in the price of exported goods in terms of foreign currency in relation to a unit increase in the exchange rate (Carbao, 2009). Another term called PTM, pricing to market, which was first introduced by Kregman (1986) and refers to the international concept of "price discrimination"[1] caused by currency fluctuations. He believes that exporters, by absorbing or neutralizing exchange rate fluctuations, may keep export prices low in terms of foreign currency.

As we know, the increase in the exchange rate and the devaluation of the national currency will reduce the price of export commodities in foreign currency and this will help increase the market share of the exporting country, but the exchange rate pass through can somewhat offset the effect of the exchange rate change on the export price in foreign currency (Mehrjerdi & Tohidi, 2013).

In Iran, the agricultural sector has always played a major role in non-oil exports and foreign exchange earnings, and pistachio is one of the major export products of the Iran's agricultural sector (Azam Zadeh Shouraki et al, 2011). Given that Iran holds more than 50% of the world market share of pistachio, it can play a major role in the price formation process of this product on the world market (Farajzadeh & Esmaeili, 2010).

Despite the importance of examining whether pistachio exporters in Iran have the ability to discriminate markets, this issue has not yet been investigated. Also, since the success of foreign exchange policies in adjusting trade balances largely depends on the rate of exchange rates on export commodities. To investigate this issue this paper is attempted to analyze the price discrimination in Iran's export pistachio market with PTM approach using a Panel Data Regression analyses over the period of 2001 to 2020 among 32 target markets.

2. Theoretical Foundations and Research Literature

Experimental research on the exchange rate pass through (ERPT) (shows many observations that the export price does not respond adequately to exchange rate changes (partial or imperfect ERPT). In fact, three cases can be imagined regarding the effect of the exchange rate on the price of exported goods in terms of foreign currency. If the percentage change in the price of exported goods in terms of foreign currency is proportional to the exchange rate change, the law of one price is established and the exchange rate is complete. If there is no change in the price of exported goods in terms of foreign currency due to the change in the exchange rate, the exporters will absorb all the changes in the exchange rate and the exchange rate transfer will be zero. In the third case, if the percentage change in the price of exported goods in terms of foreign price is less than the percentage change in the exchange rate, exporters will absorb some of the exchange rate changes and the exchange rate relationship will be incomplete. Incomplete exchange rate transfer can be due to shifting production costs and strategy of pricing to market, PTM (Mehrjerdi & Tohidi, 2013). Studies in the field of PTM also reveal that exporters often use their profit margins to absorb some of the effects of exchange rate changes (Gil-pareja, 2002).

The theoretical framework used in this study is based on the Knetter model (1993 and 1995) as a result of obtaining the first-class conditions of a monopoly

of seller who sells his product for various export purposes. Under these conditions, the firm's optimal export price for each of the export destinations in each period depends on the "common marginal cost" and the "mark-up of price over marginal cost" (may be common or separate for each country). Bilateral exchange rate fluctuations can affect the firm's export price to destination markets in two ways:

i) Through the effect that exchange rates have on the marginal cost.

ii) Through the effect that exchange rates have on mark-up of price over marginal cost (Knetter 1993-1995).

New trade theories suggest that international trade is usually characterized by imperfect competition and imperfect market structure. Such conditions can make price discrimination an optimal decision for an exporter maximizing profits. Discrimination is the selling price of different production units at different prices. Economists typically consider three types of price discrimination: first-degree price discrimination, second-degree price discrimination, and third-degree price discrimination (Varian, 2010).

First-degree price discrimination: First-degree discrimination, or perfect price discrimination, occurs when a business charges the maximum possible price for each unit consumed. Because prices vary among units, the firm captures all available consumer surplus for itself, or the economic surplus. Many industries involving client services practice first-degree price discrimination, where a company charges a different price for every good or service sold. Second-degree price discrimination means that the monopolist sells different units of production at different prices, that is, different prices are charged for different quantities of goods. Third-degree price discrimination is that the monopolist sells production to different people at different prices, but each unit of production sold to a particular person is sold at the same price, which is the most common type of price discrimination, such as discounts for senior citizens (Varian, 2010).

Kregman (1986) introduced third-degree price discrimination, which he called pricing to market (PTM). PTM is price-based exchange rate discrimination and occurs when a change in the bilateral exchange rate between one exporter and several buyers changes the ratio of the price paid by the buyer. He argues that when the US dollar falls, export prices do not always rise in the same proportion, and as a result the relative international prices change. This is evidence of incomplete competition. If the exchange rate transition is not complete, prices will not always be equal to the marginal cost and as a result, the export price includes the mark-up (surplus) for each export destination is different. This means that exporters price their products according to the demand characteristics of different importing countries or simply price to market. Many empirical studies have been conducted on the concept of PTM for industrial as well as agricultural products. The results of these studies are almost heterogeneous and it is difficult to derive general conclusions about PTM behavior. The behavior of PTMs seems to be differ between source countries and export industries.

Knetter (1995) has introduced a framework for studying the adjustment of export prices to multiple markets. This framework can identify demand parameters without making limiting assumptions about the functional form of cost or demand, or without relying on cost data. This method is based on responses symmetrical export prices to marginal costs and changes in exchange rates have been established in this model, which is derived from a monopoly price discrimination model when export destinations are divisible. Profit maximization for the monopoly firm indicates that the monopolist selects a product level for export purposes for which the marginal income and marginal cost are equal. The price set for each destination changes periodically with a change in the marginal cost and a change in the markup on the marginal cost. The marginal cost is the same among export destinations, and for each destination, in theory, markup adjustments are symmetrical in response to changes in the exporter's marginal cost and exchange rate changes at a particular destination (Knetter, 1995).

In order to observe the relationship of exchange rate transmission to reveal information about the structure of a market or industry, it is necessary to separate the determinants of demand from supply, which is possible at least in two ways:

i) Assuming that the domestic price scale can be used as an alternative to the marginal cost.

ii) By estimating a cost function directly in a separate equation.

Analysis in this study is a partial equilibrium with the assumption that producers' actions have no effect on the exchange rate. There is also no assumption about the impact of exchange rate fluctuations on firm technology, input prices and the functional form of its cost, and the demand it faces in foreign markets. It is important to note that the marginal cost of production varies at the same rate for exports to each destination, not depending on how the marginal cost is affected by exchange or other factors. There is no need for

a far-fetched rule that exchange rate fluctuations are a function of cost, or that the marginal cost varies by a fixed percentage among buyers (Knetter, 1995).

Consider a firm that produces goods for sale in the separate destination markets marked with i. The actual profit function of this firm is as follows:

$$\pi(p_1,\ldots,p_n) = \sum_{i=1}^{n} p_i . q_t(e_i p_i) - C(\sum_{i=1}^{n} q_i(e_i p_i), w) \qquad (1)$$

In the above equation, p is the real export price (which is the real price with the level of prices in the exporting country), q is the amount of commodity demand, which is a function of the relative price in terms of the buyer's currency, e is the exchange rate (currency of the destination country for one currency of the exporting country adjusted by the level of prices in the destination market), w is the actual price and c (q, w) is a function of the cost of the firm. The first-order condition (F.O.C) for profit maximization implies that the firm equates the marginal sales revenue in each market to the common marginal cost. In other words, the export price for each export destination is the result of the marginal joint cost and mark-up in each specific destination.

$$p_i = C_q\left(\frac{-\eta_i}{-\eta_i+1}\right), \forall i \qquad (2)$$

In the above relation, η is the absolute value of the elasticity of demand in the foreign market in relation to price changes in the market. A change in the exchange rate against the currency of country i can affect a set price in two ways: by affecting the marginal cost (by changing the amount or price of inputs) or elasticity of import demand. The first effect overflows to other export destinations as well. But, the second effect is specific to each destination. Both determine the effect of ERPT, while PTM is only related to the second effect. These two effects will be more pronounced by taking the logarithm of Equation (2) and taking the full differential of the result relative to the export price, the input price, and the exchange rate.

$$\frac{dp_i}{p_i} = \frac{C_{qq}(\sum q'_j(p_j de_j + e_j dp_j)) + C_{qw}d_w}{C_q} + \frac{\eta_i' e_i p_i}{\eta_i(-\eta_i+1)}\left(\frac{dp_i}{p_i} + \frac{de_i}{e_i}\right), \forall i \qquad (3)$$

Where p * = ep is the price in the currency of the buyer country and $\frac{dcq}{cq}$ is equal to one:

$$\beta_i = \left(\frac{\frac{\partial \ln \eta_i}{\partial \ln p_i^*}}{(-\eta_i+1)-\frac{\partial \ln \eta_i}{\partial \ln p^*_i}}\right) \qquad (4)$$

The logarithm differential of the marginal cost equation of (3) is simplified as follows.

$$\frac{dp_i}{p_i} = (1 + \beta_i)\frac{dC_q}{C_q} + \beta_i \frac{de_i}{e_i}, \forall i \qquad (5)$$

From the price elasticity in Equation (4) it follows that the elasticity of the export price relative to the net exchange rate is less (more) than zero due to any effect of related changes in the marginal cost when the demand is less (more) than the convex constant tensile form. This arises from a review of the differential simplification of the whole Equation (3) and the relationship between convexity and the response of tensions to changes in price. For demand with less convexity than the fixed elasticity, the elasticity of demand relative to the price increases, which causes the denominator to be positive and the denominator to be negative (in explanation β). The simplification made in Equation (4) shows the relationship between the effect of marginal cost changes and exchange rate changes on export prices. Changes in the marginal cost and changes in the net exchange rate from their impact on the marginal cost have a similar effect on prices in the currency of the buyer country. Before specifying the reminder model, 2 conditions are necessary:

i) The monopoly model is certainly too simplistic compared to real markets.

ii) The empirical specification that follows should be applied to a wider range of models (Knetter, 1995).

Various empirical studies on price behavior for different groups and industries have been carried out by Pick & Park (1991), Anania et al. (1992), Petterson & Abbott (1994), Pick & Carter (1994), Falk & Falk (1998), Rakotoarisoa & Shapouri (2001), Crew & Florkowski (2003), Hosseini & Rafiei (2008), Haghighat & Hossein (2010), Farajzadeh & Ismaili (2010), Pall et al. (2012), Shurakiet al. (2011), Mehrjerdi & Tohidi (2012), Najafi et al. (2016) and

Jine & Miljkovic (2018). Most research on pricing and exchange rate behavior in response to exchange rate fluctuations, like, Dogru et al. (2019) and Ongan et al. (2017) have focused on the experiences of countries.

The concept of PTM has been used frequently in studies analyzing the wheat market, as several countries have state-owned trade activities for wheat. The results of the wheat export show that price discrimination has been applied between Canadian and American exporters for different purposes, although the price markup seems to be very small.

As mentioned earlier, in this paper, it is attempted to investigate the price discrimination in Iranian export pistachio market with PTM approach by using a Panel Data Regression analyses during the period of 2001 to 2020 among 32 different target countries. It is worth mentioning that this study carried out under stable economic condition and not under uncertainty situation, like Covid 19 pandemic, as stated in Işık et al. study relevant to uncertainty circumstances (2019).

3. Model Refinement, Methodology and Estimation

One of the effects of exchange rate fluctuations is; its effect on exporting price. In recent years, exchange rate had experienced many instability in Iran and has unusually increased. Exchange rate fluctuations can also affect exporting price. So, the question is that what the effect of exchange rate variations on exporting price of pistachio is? This is because, Iran is one of the main producer of this product in the world and the aim of this study is, whether exporters capable discriminate between different exporting destinations or not? The methodology to understand the above question can be described as such:

The theory described in the previous section shows a very concise theoretical framework. Consider the price adjustment equation based on Equation (4), where i and t represent the N destination (market), t represents the time period, and C_t represents the marginal cost. Export price elasticity relative to marginal cost $(\alpha + 1)$ and β export price elasticity relative to net exchange rate are due to changes in marginal cost. Given the data on the exchange rates of destinations and export prices and the common marginal cost, estimating the following equation will be simple.

$$\Delta lnp_{it} = \alpha_i \, \Delta lnc_t + \beta_i \, \Delta lne_{it} + u_{it} \qquad (6)$$

One of the features and advantages of cross-sectional studies is that the final cost level associated with the pricing decision for each exporter is the same for all export purposes. Consider the following nonlinear regression:

$$\Delta lnp_{it} = (1 + \beta)\theta_t + \beta_i \, \Delta lne_{it} + u_{it} \qquad (7)$$

Where θ is the effect of time and u_{it} is the disruption. Cost variations between intentions imply that their effects on export prices can be applied to the virtual time variable, i.e. through θ acting with β + 1, indicating the export price elasticity to the marginal cost in the target market. Several model refinements are introduced and discussed in the original PMT model. This study uses the original model presented by Kneter (1995) as the most flexible model by Equation (8).

$$\forall i = 1,...,N \quad t = 1,...,T$$
$$\ln p_{it} = \beta_i \ln e_{it} + \lambda_i + \theta_t + u_{it} \qquad (8)$$

P_{it} the price of pistachio in imported country i in time t quoted by local money, e_{it} the exchange rate of target country quoted also by local money, B_i is the parameter of exchange rate, λ_i is the effect of the country, θ_t is the effect of time and u_{it} is the disturbance term.

The model is estimated using logarithmic method in which B_i is the elasticity of exported price to the local money. If $\lambda_{i=0}$ and $\beta_i = 0$ indicate that the exported price for all the countries is the same. Also, if $\lambda_i \neq 0$ and $\beta_i \neq 0$ significantly, indicate that there is the evidence of imperfect competitive market and also the existence of price discrimination (Pall, 2013).

Two different scenarios of price discrimination can be distinguished:

The first assumes that there is a constant demand elasticity for price, relation to the local currency in each importing country, which results in the fixed mark-up on the marginal cost, i.e. $\beta_i = 0$. This markup can vary between destination countries, i.e. $\lambda_i \neq 0$. The second scenario is imperfect competition, which shows price discrimination. In this scenario, the elasticity of demand may be met by changes and rising in the importer's prices.

Table 1: Relationship between Model Parameters and Different Market Scenarios

Market Scenario	β_i	λ_i
Perfect competition, incomplete competition with common markup	No significant	No significant
Constant demand elasticity > Constant markup that can vary between countries	No significant	Significant
Demand elasticity > Markup of variables that can vary between countries	Significant	No significant / Significant
Strengthen the effects of exchange rates	Positive	
Local currency stability < PTM	Negative	

Source: Pall, 2013

If the elasticity of demand changes, the optimal mark-up on the marginal cost will also change, so export prices will depend on exchange rates. This is the behavior of PTM, because the optimal markup is changed by a price-discriminating between destinations, i.e., $(\lambda_i \neq 0)$, and also by changes in exchange rates $(\beta_i \neq 0)$. Knetter (1993) distinguishes between positive sign versus negative sign positions for β_i. A negative β_i indicates that exporters do not follow a fixed mark-up policy, but instead fix prices in the buyer's currency. Knetter (1993) called such behavior as local currency stabilization. In contrast, a positive β_i indicates that exporters amplify the effect of destination-specific exchange rate changes through changes in each destination-specific markup.

In this study, to investigate the existence of price discrimination behavior (PTM) in the Iranian export pistachio market, the period of 2001-2020 has been considered as mentioned above. Due to restrictions on access to data, importing countries of Iran's pistachio in this study are limited to 32 countries which are US, Australia, Jordan, Algeria, United Kingdom, UAE, Ukraine, Bahrain, Brazil, Bosnia and Herzegovina, Pakistan, Turkey, China, Russia, Japan, Syria, Sweden, Switzerland, Singapore, Saudi Arabia, Oman, Qatar, Kazakhstan, Canada, Kuwait, South Korea, Malaysia, Mexico, Nigeria, New Zealand, India and Hong Kong.

The nature of this study requires the use of a Panel Data Regression analysis. Data on exchange rates of different countries have been extracted from the World Bank and statistics on the export price of pistachio to destination countries collected from the Chamber of Commerce in Iran. The nature of the subject under study requires the use of a Panel Data regression. Unit root test indicates that the mentioned variables are the nature of this study requires the use of a Panel Data Regression analysis. Data on exchange rates of different countries have been extracted from the World Bank and statistics on the export price of pistachio to destination countries collected from the Chamber of Commerce in Iran. The nature of the subject under study requires the use of a Panel Data regression. Unit root test indicates that the mentioned variables are integrated order zero (I_0). The model is estimated using the Fixed Effects method[1] which represents of a particular intercept for each country. The model is estimated and results can be seen in the Table 2.

4. Results and Discussion:

The results imply that the effects of sections λ_i are significant for all countries except the United States, Oman and New Zealand. The exchange rate coefficient β_i is also meaningless for all countries studied except New Zealand. Thus, according to Table (1), which represents different market scenarios, it can be argued that the hypothesis of a competitive market is rejected and evidence of the existence of fixed markup PTM for most importing countries except the United States, New Zealand and Oman.

In the United States and Oman, there is no evidence of price discrimination. In South Korea we are witnessing price discrimination with the flexible mark-up. It also has a positive exchange rate coefficient for all importing countries except Australia, China, India, South Korea, Nigeria, New Zealand, Oman, Sweden and the US, meaning that the effects of exchange rate changes are amplified by exporters. However, in other countries with negative currency coefficients, pistachio exporters stabilize local currency prices in response to the exchange rate fluctuations in such a countries.

Table 2: Model Estimation, Numbers in Parenthesis Show Significance Level (Probability)

Country	λ_i	β_i	Country	λ_i	β_i
Oman	3.148	-0.744	UAE	12.138	0.180
	(0.655)	(0.284)		(0.016)	(0.776)
Ukraine	14.603	0.526	Australia	10.055	-0.089
	(0.011)	(0.495)		(0.000)	(0.725)
Pakistan	11.935	0.239	Bahrain	14.630	0.378
	(0.036)	(0.833)		(0.030)	(0.566)
Qatar	19.351	0.016	Bosnia & Herzegovina	12.443	0.199
	(0.000)	(0.880)		(0.000)	(0.547)
Russia	13.050	0.411	Brazil	11.155	0.039
	(0.000)	(0.481)		(0.000)	(0.883)
Saudi Arabia	10.910	0.015	Canada	10.825	0.007
	(0.030)	(0.980)		(0.000)	(0.815)
Singapore	13.187	0.302	Switzerland	13.432	0.297
	(0.000)	(0.378)		(0.000)	(0.383)
Sweden	9.185	-0.230	China	6.489	-0.543
	(0.005)	(0.610)		(0.014)	(0.138)
Syria	11.192	0.028	Algeria	12.854	0.451
	(0.009)	(0.964)		(0.000)	(0.438)
Turkey	15.793	0.574	UK	20.649	1.027
	(0.034)	(0.496)		(0.016)	(0.244)
US	6.882	-0.461	Hong Kong	15.082	0.628
	(0.239)	(0.466)		(0.000)	(0.317)
South Korea	9.043	-1.098	India	9.034	-0.331
	(0.000)	(0.221)		(0.043)	(0.690)
Kuwait	11.582	0.072	Jordan	12.090	0.138
	(0.034)	(0.889)		(0.047)	(0.828)
Mexico	11.582	0.072	Japan	13.234	0.462
	(0.034)	(0.889)		(0.000)	(0.126)
Malaysia	12.324	0.200	Kazakhstan	13.076	0.561
	(0.000)	(0.620)		(0.000)	(0.326)
New Zealand	1/331	1/031	Nigeria	9.730	-0.472
	0/585	(0.000)		(0.000)	(0.154)
R^2=0.91	Adjusted R^2=0.89		D.W=2.04		

These results are quite reasonable and acceptable given the fact that Iran is the largest producer of pistachios globally and holds a dominant stake in the world market with an equivalent share of 50% (Dashti et al., 2008), which means can get benefit of price discrimination in the world market. In fact, because pistachio importers have few alternatives for import, Iran has market power, yet price discrimination seems natural and demand for Iranian pistachio is inelastic. Therefore, it can be seen from the results that Iran's market power for pistachio products globally has allowed price discrimination among different importers and adjustments made by bilateral exchange rate changes on the mark-up depends on the demand elasticity.

5. Conclusion

This paper has presented an empirical study into the impact of non-oil exports in the agricultural sector which put forward a basic questions that was what the effect of exchange rate variations on exporting price of pistachio is? To answer such subject, the study examined Iran's pricing behavior in export pistachio market, among 32 importing countries during the period of 2001-2020. A Panel Data Regression method was used to estimate the model and results showed that Iranian exporters' uses price discrimination behavior among these importing countries. Table (1 and 2) show the hypothesis of a competitive market for this product is rejected and Iranian pistachio exporters act as a price discriminator which is quite predictable given Iran's competitive advantage in producing this product.

It is therefore recommended that the government, by supporting the producer of agricultural products, in particular, pistachio which has an advantage in its production, take advantage of such products in view of the discriminatory pricing strategy to break away from the oil-dependent economy.

Highlights

i) This study have attempted to examine the theoretical and empirical impact of price discrimination of exporting of pistachio in Iran's economy through a PTM approach.
ii) We recommend that price discrimination is a way to increase the value and extent of export. With price discrimination, exporters can get benefit of to make the sales identifies to different market segments with different price elasticity. Markets must be kept separate by time, physical distance, and nature of users.
iii) Price discrimination can be used as a strategy for the products which the country have a competitive advantages to produce them.

References

Anania, G., Bohman, M. and Carter, C.A. (1992). United States Export Subsidies in Wheat: Strategic Trade Policy or Beggar-thy-neighbor tactic. *American Journal of Agricultural Economics, 74(3):* 534-545.

Asgharpour, H., Sojoodi, S. and Aslani Nia, N.M. (2011). Exchange Rate Pass-through to Non-oil Export Price of Iran, *The Economic Research*, *11(3)*: 111-34 (in Persian).

Asgharpour, Hossein and et al (2017). The Asymmetric Exchange Rate Pass-Through to Import Price Index: The Case Study of Iran, *Iranian Journal of Economic Studies*, *6(1):* 47-64.

Azam Zadeh Shouraki, M., Mahmoud Gari, R. and Mortazavi, A. (2011). Study of Iranian Pistachio Exporting Market, *Journal of Agricultural Economics Research*, *3*: 101-116 (in Persian).

Dashti, Gh., Khodaverdizadeh, M. and Mohammadrezaei, R. (2010). Analysis of Relative Advantage and Market Structure of Iranian Exporting Pistachio, *Journal of Agricultural Economics and Development*, *24(1)*: 99-106 (in Persian).

Dogru, T, Isik, C. and Sirakaya-Turk, E. (2019). The Balance of Trade and Exchange Rates: Theory and Contemporary Evidence from Tourism, *Tourism Management, 74,* 12-23.

Farajzadeh, Z. and Esmaeili, A. (2010). Analyzing Price Transmission in Pistachio World Market. *Journal of Agricultural Economics and Development*, *3.(18): 18,* 69-98 (in Persian).

Gil-Pareja, Salvador (2002). Export Price Discrimination in Europe and Exchange Rates, *Review of International Economics*, *10(2)*: 299-312.

Haghighat, J. and Hosseinpour, R. (2010). Exchange Rate pass-through on Iranian Raisins Export, *Journal of Economics Science (JES)*, *37*: 33-54 (in Persian).

Hosseini, S. and Rafiee, H. (2008). Production and Export Comparative Advantage of Iran's Pistachio, *Agricultural Economics and Development*, *22.2*: 45-57. (in Persian).

Isik, C., Sirakaya-Turk, E. and Ongan, S., (2019). Testing the Efficacy of the Economic Policy Uncertainty Index on Tourism Demand in USMCA: Theory and Evidence, *Tourism Economics, doi.org/10.1177/1354816619888346*.

Jafari, Somayeh and et al, (2014). Studying the Effects of Non-Oil Exports on Targeted Economic Growth in Iranian 5th Development Plan: A Computable General Equilibrium Approach, *Iranian Jou. of Economic Studies, 3(1):* 111-130.

Jin, H. J. and Miljkovic, D. (2008). Competitive Structure of U.S. Grain Exporter in the World Market: a Dynamic Panel Approach, *Journal of International Economic Studies, 12(1):* 33- 63.

Knetter, M. M. (1995), Pricing to Market in Response to Unobservable and Observable Shocks. *International Economic Journal, 9(2): 2,* 1-25.

Knetter, M.M. (1993). International Comparisons of Pricing to Market Behavior, *American Economic Review, 83(3)*: 473-486.

Krugman, P. (1986). Pricing to Market When the Exchange Rate Changes. *NBER Working Paper, No. 1926*.

Najafi, I., Moghaddasi, R. and Zeraat Kish, S. Y. (2016). Examining the Effective Factors on Exporting Price in the Main Pistachio Exporter by Using Global Autoregressive Model (ARM) *Journal of Agricultural Researches, 8(3):* 193-216.

Ongan, S., Isik, C., and Ozdemir, D., (2017). The Effects of Real Exchange Rates and Income on International Tourism Demand for the USA from Some European Union Countries, *Economies, 5(4), 51,* 1-11.

Pall, Z., Perekhozhuk, O., Teuber, R. and Glauben, T. (2013). Are Russian Wheat Exporter Able to Price Discriminate? Empirical Evidence from the Last Decade, *Journal of Agricultural Economics, 64(1):* 177-196.

Petterson, P. M. and Abbott, P.C. (1994). Further Evidence on Competition in the U.S. Grain Export Trade, *Journal of Agricultural Economics, Vol. 42(4),* 55-60.

Pick, D. H. and Carter, C.A. (1994). Pricing to Market with Transactions Denominated in a Common Currency. *American Journal of Agricultural Economics, 76(1)*: 55-60.

Pick, D.H. and Park, T.A. (1991). The Competitive Structure of U.S. Agricultural Exports. *American Jou. of Agricultural Economics*, *73(1)*: 133-141.

Rokotoarisoa, M. A. and Shapouri, S. (2001). Market Power and the Pricing of Commodities Imported from Developing Countries: the Case of US Vanilla Bean Imports, *Agricultural Economics*, *25(2-3)*: 285- 294.

Varian, Hal R. (2010). Intermediate Microeconomics; a Modern Approach. *Norton & Company INC, 8th Edition*.

Zare'Mehrjerdi, M. and Tohidi, A. (2013). Exchange Rate Pass-through in Iranian Pistachio Export Markets: A Panel Data Approach, *Journal of Agricultural Economics Research, 5(2):* 165-185 (in Persian).

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