Introducing and Analyzing Egg Marketing Management
(Case study: Alborz Province)

Saeed Ebrahimzadeh Mabood[1]* , Fatemeh Pasban[2] and Reza Moghaddasi[3]

1- MA (M.Sc) in Agricultural Management, Islamic Azad University, Science and Research Branch, Tehran Branch, Tehran, Iran
2- Member of Research and Scientific Board of Institute of Planning Agricultural Economy and Rural Development, Tehran, Iran
3- Associate professor of Agricultural Economy, Islamic Azad University, Science and Research Branch, Tehran Branch, Tehran, Iran

Corresponding author: Saeed Ebrahimzadeh Mabood

ABSTRACT: Inefficiency of marketing system of agricultural products and considerable gab between receiving price of producer and paying price by consumer is one of the problems in agricultural sector in most of the developing countries; therefore it is very important to introduce factors that are influential in reducing the gap. This study aimed at studying the issues related to egg marketing management in Alborz Province. For this reason, after dealing with the issues related to egg marketing servicing and related problems statistical comparison between personal and managerial features of aviculturists with marketing margin was analyzed. In addition, values of marketing margin, retailing margin, wholesale margin and share of marketing factors were calculated for this product. Functions of marketing margin like relative communicative pattern were estimated. Statistics and required information for the study was in two forms of documentary method that studied statistical and serve resources by accidental sampling and completing questionnaire, and interview for 30 aviculturist and also interview with wholesales and retailers for each of the aviculturists that was collected and analyzed for marketing price information. Result showed that average price of producer was 30600 rial, average wholesale price was 34700 rial, average retailing price was 42000 rial that in this regard the average share of producer from the final price of product was 72.9%, wholesale share was 9.7 and retailor share was 17.3. Result of estimating functions of marketing margin showed that price of retailing has a direct and positive relationship to marketing margin, also the average rate of retailing margin is more than wholesale margin.

Keywords: Marketing management, marketing margin, marketing price coefficient, egg relative relationship pattern.

INTRODUCTION

Subject of agricultural products marketing factors affecting the development of countries and demanded more government attention to this important issue in the field of agricultural economics (Najafi and Kazemnezhad, 2004). In addition, in the markets in Iran agricultural products face problems such as lack of standardization of agricultural production, dispersal and fragmentation of products market, volatility of prices and high risk, low investment, lack of necessary liquidity in this section, high transaction costs, lack of information and lack of market knowledge, farmers poverty and their earnings gap with other sectors of society, lack of packaging industry development, lack development of transportation and smallholder agriculture (Asady, 2010).

Poultry production sectors, like agricultural products sector is faced with marketing problems as well. From these problems, some such as seasonality, corruptible, fluctuating production, imperfect competition in the markets

for these products and high margin marketing of products in this section can be mentioned (Moghadasi and Norozi, 2010).

Based on information received in Alborz Province, from 767 thousand tons egg production of country in 2011, about 94/5 thousand tons was egg production of Alborz Province which has allocated about 12/32% share of whole country.

Considering that a significant share of country egg production is allocated to the Alborz Province, in this research margin issues of egg marketing in this provincial have been assessed and studied.

Many studies have been conducted so far on the periphery of marketing and some of them are mentioned below:

Sadrolsharifi and Kazemnejad, (2000) have done economic analysis on rice production marketing margin using econometric models. The results of estimated models of the mark up and marketing expenses show that rice marketing margins in Iran are influenced by factors such as marketing and imports, foreign and domestic rice prices, distribution and price risk of the imported rice which among the most important factors are policies and import policies that lead to changes in transportation costs (as a measure of marketing costs) such as policy of changing in rates for fuel and petroleum products.

Ozkan and colleagues, (2003) have studied the structure of production and export marketing major issues plants in Turkey. The results showed that producers in this region often grow and produce flower traditionally and their production is not industrial.

Most production units do not use the style or appropriate marketing strategy and attempt to directly negotiate with the importers, while in many cases they do not have enough knowledge of market conditions. Taheri, (2006) In his research entitled "Evaluation of the role of marketing and the marketing of agricultural products, with an emphasis on citrus in Savad Koh" showed that between age, garden width, experience in horticulture and growers satisfaction in field of marketing citrus there is a positive and significant correlation.

Hosseini and colleagues, (1999) examined red meat marketing margins and factors affecting it in Iran and concluded that marketing margins for beef and sheep has a direct and significant relationship with meat prices at the retail level and the cost of slaughtering the sheeps.

Throb and Jane, (2008), have investigated the effect of price changes on maize marketing margins in South Africa during the period 1976-2004 and concluded that actual retail margins cornstarch in South Africa due to disturbances retail prices have increased at least 20 percent in 1991. Also corn price changes has made at least 179 million U.S. dollars a year, transfer from consumers to intermediaries in the marketing system.

Khaladi and colleagues, (2010) have examined marketing margin and marketing efficiency of poultry meat in different levels of the market in the city of Karaj. The results of this study in developing countries, including Iran, is an important issue which has received little attention in the development of the agricultural sector (Khaledi and partners, 2010).

Reviewing the marketing of agricultural products has a long history on agricultural economics and marketing literature. Agricultural products operations and marketing processes have become important more than ever by urbanization development and moving production areas away from consumption centers so that United Nations have considered agricultural products marketing of showed that shambles have devoted more than 50 percent of marketing margins and profits of the marketing, while the share of producers of the marketing profits is less than 10 percent, and the ratio of received prices by producers to paid prices by consumers were calculated (68%). The results also showed that the chicken market in the city of Karaj has no sufficient performance. Asadi (2010) examined the management of the marketing of agricultural products in Iran and concluded that if there are effective marketing channels allocation of productive resources would be better and to create effective marketing channels, existence of enough technicians and managers at moderate levels is necessary.

In the present research, purposes such as determining market marginal and impact of individual and management characteristics of the farmers of the Alborz Province on it and also providing an appropriate solution for reforming egg marketing management model in this province have been investigated.

MATERIALS AND METHODS

Marketing:

Consists of innovative process of management that will promote commerce and it is forecasts and estimator of requirements. Marketing connects production resources and distribution of goods and services to each other, leads and determines the amount of effort and work for selling goods with benefit to consumers (Asadi, 2010).

Marketing management:

Consists of analysis, planning, implementation and control of planned activities in order to create, build and maintain mutually beneficial exchanges and relationships with target markets to achieve organizational goals (Kohpahi, 2004).

Marketing margins:

In a competitive market, the total marketing margin is defined as the difference between the price paid by consumers and the price received by producers.

(Wallen and Turner) have defined marketing margins as all expenditures made during the course of product marketing, from time of harvesting until before it reaches to the consumer. For simplicity in their analysis they divided marketing margin into two parts of the wholesale margin and the retail margin.

The total marketing margin is calculated based on the following formula:

$$Mm = Mr + Mw \quad (1)$$

Mm is the total marketing margin, Mr is the retail margin and Mw is the wholesale margins.

Wholesale margin, is the difference between the wholesale price and received price by producers and is calculated from the following formula:

$$Mw = Pw - Pf \quad (2)$$

Mw is the wholesale margins, Pw is the wholesale price and Pf is the price received by producers.

Also retail margin which is difference between wholesale and retail prices can be calculated from the following equation:

$$Mr = Pr - Pw \quad (3)$$

Mr is the retail margin, Pr is the retail price and Pw is the wholesale price.

Marketing cost coefficient:

Investigating marketing costs is very important because contains considerable part of paid price by consumer. Changes of marketing costs altered the birder's share of price of provided product to the consumer. Because changes in marketing costs on the price that birders receive for their product have direct impact. According to features of agricultural products, the cost of marketing of these products is greater than industrial goods. Generally the total cost of the activities and performed services on the product in the gap between production and consumption, which is as percentage of the price of the offered product to the consumer, is called marketing cost index (Ashrafi and colleagues, 2005).

This index is calculated from the following equation:

$$r = (CM/Pr) \times 100 \quad (4)$$

Which Pr is the retail price, CM is the marketing costs and r is the marketing expenses coefficient. This ratio represents the share of marketing costs in the final price of the product. Also in this study in order to understand the issues and dilemmas of eggs marketing in Alborz Province, share of producer, wholesaler and retailer of the final price of the product was calculated using the following formula:

$$\text{share of producer} = (Pf/Pr) \times 100 \quad (5)$$
$$\text{share of wholesaler} = \{(Pw-Pf)/Pr\} \times 100 \quad (6)$$
$$\text{share of retailer} = \{(Pr-Pw)/Pr\} \times 100 \quad (7)$$

Which in formulas above Pf, Pr and Pw respectively are, farm gate prices, retail and wholesale trade.

Marketing margin models:

Basically, the four models proposed so far for marketing margins are: Mark – up Model (MUM), Relative Model (RLM), Marketing Cost Model (MCM), Rational Expectation Hypothesis Model (REHM)

Of these three models first, second and third models are static and the forth model is dynamic. Here we tried briefly to examine their theoretical concept and explanation and to show that each of them can be selected under what circumstances and for what kind of data.

1- Model surcharge (MUM)

This model was presented by Vaff (1964) for the first time. He believed consumer demand is the decisive factor in the relationship between retail and farm prices. So that the price of agricultural products produced on the farm-level prices is due to difference between retail prices and marketing margins. The mathematical equation for this model is as follows:

$$M = F(PR, Z) \quad \rightarrow \quad M = PR - PF \quad (8)$$

In above equation M is the marketing margins from farm to retail, PR is the retail Price, PF is the farm prices and Z is the vector that represents marketing expenses to factors prices (Input Marketing Cost). Marketing margins in this model can be stated absolute, percent or a combination of these two. This model is basis of, Hine dynamic way (1980) for modeling the profit margin.

[1]. Mark – up Model(MUM)
[2]. Relative Model(RLM)
[3]. Marketing Coste Model(MCM)
[4]. Rational Expectation Hypothesis Model(REHM)

2- Relative model (RLM)

According to the study of structure, Gardner (1975) has defined the communication model or relative model. In this model he has considered (Q) for the variables, the average retail price and quantity supplied product. (Shajari, 2002). The mathematical form this model is as follows:

$$M = F(PR, PR*Q, Z) \quad (9)$$

Z is the costs of marketing, PR is the retail Price, Q is value of product and PR * Q value of product provided for to the market (retail price × the total amount of product marketing).
Communication model is obtained by reverse function derived from demand for farm products and marketing margins is defined as a function of retail prices, output quantities and costs. This model in input and output prices, is uniform, homogeneous and linear (Shafei, 1999).

3- Marketing cost model (MCM)

This model was presented by Volgnant and Mullen (1987). This model assumes that competitive conditions are established and economic firms provide marketing services where the marginal cost of service is equal to final revenue. These two also have entered variables of production amount and marketing expenses in their model.
The mathematical form of the above model is as follows:

$$M = F(Q, Z) \quad (10)$$
Which M is marketing margins, Q is yield and Z is vector of marketing costs.

4- Model expectations hypothesis relative (REHM)

All the three models above calculate and estimate marketing margin statically and cross sectional. The fourth model estimates marketing margins dynamically. Vollgnant (1985) has presented this model according to the product maintenance costs and the time lag between production and sales and the retail price and the farm price. He has extracted the marketing margin equation from primarily conditions of a competitive firm based on maximizing the present value of expected revenues from storage and maintenance of the product. In fact in this model, variables were considered with time interval (Mojaverian, 1995). The mathematical form of the Volgnant's profit margins equation which is known as the comparative expectations hypothesis model:

$$M_t = F[PF_t, E_t(PF_{t+i}), Z_t, r, g] \quad (11)$$

In this equation M_t is marketing margins at the time of t, PF_t is farm prices for time of t, Z_t is marketing costs up to the time of t, $E_t(PF_{t+i})$ is expected farm price at time of t + i, r, g, respectively are discount rate and reserve ratio to sale or changes in the inventories.

RESULTS AND DISCUSSION

Results

In this part of the study, after extracting statistical and cost information from the completed questionnaire in three parts of manufacturer, wholesaler and retailer, we have attempted To review and analyze these data in some fields such as the wholesale margin, retail margin and the overall market margin and the coefficient of marketing costs and also marketing margins functions with the help of the software EViews 7 and then calculating the Pearson correlation coefficient and Eta squared for statistical comparison for the relationship between individual and management characteristics of farmers with market marginal would be considered. Before discussing egg prices and marketing margins, it is necessary to show the path of eggs marketing in Alborz Province with the help of chart:
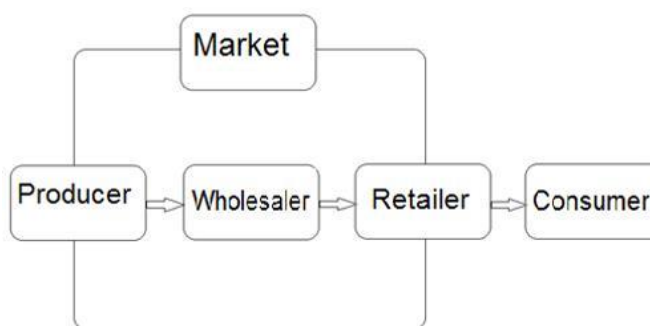

Figure 1. path of marketing eggs in Alborz Province

Considering that the price of eggs is a function of demand and supply conditions, and is determined due to agreement, therefore usually we see product price volatility.

Prices available in the market of this product include, price received by producers of poultry, wholesale price and retail price which the average of these prices in different levels of market are provided in the table below:

Table 1.: Average of retail price, wholesale price and the farm gate price for every kilogram of poultry egg in September of 2013 compared to the farms capacity of Alborz Province

Description	Retail Price(Rails)	Wholesale Prices (Rails)	Farm gate prices (Rails)
Average	42000	34700	30600

The coefficient of marketing costs, retail margins, wholesale margins and margins of the overall market

As explained in the previous sections, in definition of the coefficient of marketing cost, service components performed from production time until selling to the final consumer require some expense and collection of these costs which is obtained as a percentage of the price of the final product, is called the coefficient of marketing cost (Torkamani, 1999).

Also the retail margin is defined as the difference between the retail price and the wholesale price. Wholesale margin is the difference between the wholesale price and the producer price and total marginal of the market is the sum of retail margin and wholesale margins.

Table 2. Average of coefficient of marketing costs, retail margins, wholesale margins, margins of eggs marketing in September 2013 for farmers in Alborz Province

Description	coefficient of marketing costs (Rials)	Retail Price (Rials)	Wholesale Price (Rials)	Marketing margin (Rials)
Average	27/04%	7300	4100	11400

In the table number 2, the average of marketing cost coefficient for the sample farms in Alborz Province in September of 2013, is equivalent to 27/04 percent, means that 27/04 percent of retail price of eggs product is related to product marketing costs, in other words, share of the factors of marketing in the final price of the product

was 27/04 percent. According to the above table, the retail margin and the retailer share is the larger than wholesaler and for 42,000 rials price paid for a kilograms of eggs, 7,300 rials is retailer's share and his marketing expenses 4,100 rials is wholesaler's share and his marketing expenses and margin of the overall market which is the difference between price paid by producers and the price received by the consumer is 11400 rials.

Estimates of the marginal functions of marketing eggs in Alborz Province:

There are different models to estimate the factors affecting the marketing margins. According to research performed in the present study, based on available statistics and data applied from the marketing relative model in which review of this model is performed using the software Eviews7. Accordingly, the marginal functions of eggs marketing in Alborz Province was estimated using ordinary least squares (OLS) method and considering independent variables such as producer prices, retail prices and wholesale prices and as well as the value of production and marketing costs, the functions of entire marketing margins, the retail margin and the wholesale margins were estimated, which results are shown in Table 3.

Table 3. The results of estimating functions of egg marketing margins

variable	The total marketing margin	retail margin	wholesale margin
Intercept(C)	-8.54	-1.16	-22.79
	(-6.76)	(-0.73)	(-6.68)
LPR	3.65	5.07	-
	(35.44)	(38.07)	
LPW	-	-4.83	8.98
		(-38.44)	(22.57)
LP	-2.62	–	-7.84
	(-33.80)		(-21.93)
TR	-0.0002	-0.01	-0.007
	(-0.03)	(-1.23)	(-0.25)
CM	0.003	0.006	0.02
	(0.47)	(0.66)	(0.72)
D.W	2.35	2.08	2.30
F	582.90	508.86	155.52
R^2	0.98	0.98	0.96

Source: research findings

In table number 3, L marks the natural logarithm, PR Retail Price, PW wholesale price, P the price of producers or cost of the product, TR output value and CM marketing costs. Values in parentheses are Indicative of t-statistics.

Durbin - Watson test (DW) indicates the absence of serial autocorrelation, according to the statistic F, mentioned variables in total explains 98, 98 and 96percent of the changes of marketing total marginal, retail margins and wholesale margins.

In this estimation due to the lack of significance of the independent variables such as the production value and marketing costs and after removing them and taking independent variables into account such as the producer price, retail price and the wholesale price, the functions of total marketing margin, retail margins and wholesale margins were re-estimated Which the final model is shown in Table 4.

Table 4. The final model obtained from estimating functions of egg marginal marketing

Variable	Total marketing margin	Retail margins	Wholesale margins
Intercept(c)	-8.50	-1.90	-22.89
	(-7.55)	(-1.28)	(-7.44)
LPR	3.65	5.72	-
	(36.92)	(38.27)	
LPW	-	-4.79	8.97
		(-39.27)	(23.04)
LP	-2.62	-	-7.80
	(-37.47)		(-23.11)
D.W	2.26	2.22	2.30
F	1219.53	1014.04	321.72
R^2	0.98	0.98	0.95

Source: research findings

In table number 4, L marks the natural logarithm, Pr retail price, Pw wholesale price and P the producer price or product cost. Indicative values of t-statistics are in parentheses.

Durbin - Watson test (DW) indicates the absence of serial autocorrelation, according to the F-statistic, above regressions are statistically significant and mentioned variables explain in total 98, 98 and 95persent of changes in total marketing margin, retail margin and the wholesale margin.

Based on obtained results it is clear that retail prices and producer prices, respectively have positive and negative relationship and both have significant relationship with total marketing margin of product, so that with one percentage increase in the retail price, marketing margin increases to the extent of 3/65 percent and with one percent increase of producer prices, marketing margins decreases to the extent of 2 /62 percent.

Also the results of the calculations show that retail prices and wholesaler prices, respectively have positive and negative relationship and both have significant relationship with retail margin, so that with one percentage increase in the retail price, retail margin increases to the extent of 5/72 percent and with one percent increase of wholesaler prices, retail margins decreases to the extent of 4/79 percent, which shows the relationship between retail and wholesale and their prices' tremendous impact on retail margin.

The calculation results show that wholesale prices and producer prices, respectively have positive and negative relationship and both have significant relationship with wholesale margin, so that with one percentage increase in the wholesale price, wholesale margin increases to the extent of 8/97 percent and with one percent increase of producer prices, wholesale margins decreases to the extent of 7/80 percent.

Calculations for Pearson correlation coefficient and Eta-squared for statistical comparison of individual and management characteristics of farmers with market margin:

For statistical comparison of market margin with individual and management characteristics of farmers and the research hypothesis test in this regard, this subject has been investigated through Pearson correlation coefficient and eta squared using the software SPSS.16. To compare quantitative variables such as age and level of experience of farmers with the market margin, Pearson calculation and to compare qualitative variables such as gender, education and passing training courses with market total margin, eta squared calculations have been used. The results of these calculations are presented in the following tables separately.

Pearson correlation coefficient calculation
Statistical comparisons between the age and experience of farmers with the margin market:

According to table number 5, Pearson correlation coefficient indicates that there is a positive relationship between the total marketing margins and the age and experience of farmers and this coefficient for age and experience respectively is about 23 and 14 percent. But because significance level is more than 5 percent, statistically the relationship between these two variables with marketing margin is not significant. In other words, there is no relationship between these variables.

Table 5. Pearson correlation coefficients calculation for statistical comparison between the age and experience of farmers with market margin

Variable \ Statistics	Amount	Pearson correlation coefficients	Significance level	α (Significance level)
Farmers age and market margin	30	0.234	0.213	0.05
Level of experience of farmers and market marginal	30	0.143	0.456	0.05

Eta squared correlation coefficient calculation
Statistical comparisons between gender, education and passing training courses for farmers with market margin:

As can be seen in table 6, results of eta squared correlation coefficient show that there is a positive relationship between the total marketing margin and gender, education and passing training courses for farmers and this correlation for functions of gender, education and passing training courses, respectively, is about 35, 46 and 39 percent and for market margin function respectively, is about 6, 37, and 6/8 percent. But because significance level is more than 5 percent, statistically the relationship between these variables with marketing margin is not significant. In other words, there is no relationship between these variables.

Table 6. Eta squared correlation coefficient calculation for statistical comparisons between gender, education and passing training courses for farmers with market margin

Statistic correlation coefficient	Amount	Gender Variable	Market margin variable	α (Significant level)
Eta squared Statisti	30	0.354	0.065	0.05
correlation coefficient	Amount	Variable of literacy levels	Market margin variable	α (Significant level)
Eta squared Statisti	30	0.46	0.371	0.05
correlation coefficient	Amount	Passing training courses variable	Market margin variable	α (Significant level)
Eta squared	30	0.394	0.086	0.05

Share of producer, retailer and wholesaler of final price of eggs product in Alborz province:
According to formulas (5), (6) and (7) Share of marketing agents as a percentage of the final price of eggs is shown in Table 7.

Table 7. Share of producer, share of retail and share of wholesale of the final price of eggs in September of 2013 for farmers in Alborz Province (percent):

Description	share of wholesale	share of retail	Share of producer
Average	9.7	17.3	72.9

As can be seen in Table 7, The average share of marketing factors of product final price for the manufacturer, retailer and wholesaler respectively are 9/72, 3/17 and 7/9 percent. The meaning of these numbers is, from 42,000 rials, retail price average of a kilogram of eggs in Alborz province, 9/79 percent is share of the manufacturer, 3/17 percent is share of the retailer and 7/9 percent is share of the product wholesale.

CONCULSION

Compared with conducted similar studies such as studies of Ashrafi and colleagues (2005) and Asadzadeh and colleagues (2011), the highest market share of the final price of the product on the current study is related to the manufacturer.

According to the in table 4, estimates resulted of the functions of marketing margins show that retail prices have positive and direct relationship with market margins in which case the first assumption of the investigation is satisfied. The Facts and Figures obtained from Table 1 and 2 shows that the achieved average of retail margin is more than the wholesale margins and consequently, the second hypothesis of the study in which the retail margin is more than the wholesale margins is established.

A comparison of Facts and Figures obtained from the results of estimating functions of marketing margins and given the lack of significant independent variables such as age and level of experience for the calculation of Pearson and other variables such as gender, the education and training program for calculating eta squared with market margin variable, can be concluded that there is no significant relationship in relation to the total marketing margins of eggs and personal and management characteristics of farmers in Alborz province and the third hypothesis of research in this regard is not acceptable. Of course there is a positive relationship between market margins and mentioned variables which show that these variables can affect the market margins to some extent but overall the third hypothesis of research is not acceptable and is rejected.

Suggestions
1- Based on the results obtained in connection with the share of market factors from final price of eggs in Alborz Province, It can be concluded that producers have a significant role in the final price of the product and should provide conditions to simplify production and reducing its cost by providing favorable conditions of production, with an emphasis on preventing increase of input prices and fluctuations in market of this product.

2- Given that retail and wholesale prices, have significant and substantial effect on marketing margins of eggs in Alborz Province, If it is desired to control margins and avoid increasing, in order to reduce retail and wholesale prices, the government could establish supply market cooperatives in partnership with manufacturers.

3- Also the government should adopt policies in different ways, such as subsidizing production inputs or reduce tariffs on imported inputs to take action in reducing the cost of eggs.

4 - In the end, it is recommended that future studies in the field of Oviparous poultry marketing in the country, focus their review oriented to exports and livestock inputs and due to the influence of government, farmers cooperatives and oviparous guild associations on the prices, to advance in laying hens industry and determining policies on egg production and maintaining its market.

REFERENCES

Asadi Sh. 2010. Agricultural Marketing Management in the horizon of 1404, agriculture in Iran of 1404, Islamic Azad University, Rasht, Iran.

Ashrafi M, Sadr alashrafy M and Karbassi AR. 2005. Study of grapes and raisins marketing margins in Iran, Journal of Agricultural Research, No. 213-237 ;35.

Gardner BL. 1975. The farm-retail Price Spread in a Competitive food Industry, American Journal of Agricultural Economics, 57:399-409.

Khaladi M, Shaukat Fadaii M and Nekofar f. 2010. Studying the effectiveness of poultry meat market in Iran (Case Study: Karaj city), Journal of Agricultural Economics and Development, Volume 24, Number 4.

Kopai M. 2004. Principles of Agricultural Economics, Tehran: Tehran University, Institute of Publishing and Printing, Tehran, Iran.

Kopai M. 2004. Principles of Agricultural Economics, Tehran: Tehran University, Institute of Publishing and Printing, Tehran, Iran.

Modarres University, Tehran, Iran.

Mojaverian M. 1995. Citrus Marketing survey of Babel, M.Sc. thesis, Agricultural Economics, College of Agriculture, Tarbiat Modarres University, Tehran, Iran.

Najafi B and Kazem Nejad M. 2004. Marketing of agricultural products in Iran, Institute for Planning and Agricultural Economics.

Rashidi p. 2005. Review of evaluation economic and food industry export (case study: juice and tomato paste), M.Sc. thesis for Agricultural Economics, College of Agriculture, Tarbiat

Shafie I. 1999. Evaluation of the city of Rafsanjan Pistachio marketing, agricultural economics M.Sc. Thesis, Faculty of Agriculture, Tarbiat Modarres University, Tehran, Iran.

Torkamani j. 1999. Analysis of figs production and marketing economic in Iran, Institute of Planning and Agricultural Economics Research, Tehran, Iran, 182 p.Waugh FV. 1964. Demand and Analysis: Some examples from Agriculture, Washington D.C.: U.S.D.A Tech. Bull, No. 13.

Wohlgenant MK. 1985. Competitive Storage, rational Expertations, and Short-Run Food Price Determination. American Journal Agricultural Economics, 67 (11): 736-748.

Wohlgenant MK and mullen JD. 1987. Modeling the Farm-Retail Price Spread for Beef, Western Journal Agricultural Economics, 12: 119-125.

Wollen GH and turner G. 1970. the cost of food marketing. J. Agri. Econ. 21:63-83.