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**Study of Rice Marketing System in Iran**

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**Abstract :**

Rice comes second after wheat in Iran`s food consumption economy. Rising population and recent growth in GDP has made Iran one of the greatest rice importer countries all over the world. That is why rice marketing has always been a controversial issue in Iran`s agricultural economics. To study rice marketing system in Iran, this paper aims to calculate rice marketing margin, market efficiency and marketing cost coefficient in seaside Mazandaran province( where 70 percent of domestic rice production is obtained )Over the period 2000-2010. Results show that firstly HYV`s wholesale marketing margin is less than local varieties in 2000 while this trend is reversed in 2010. Secondly, retail marketing margin, total marketing margin, market efficiency and cost marketing coefficient for local varieties are all greater than HYV. Consequently, agricultural cooperative`s encouragement would lead to decrease in rice marketing margin and role of traders and raises rice farmers earnings.

**Key words :** Mazandaran Province, Marketing Margin, Rice.

**JEL codes:**Q13

## **Introduction**

Rice is the most important staple food crop for more than half of the world's population. World rice production therefore needs to increase, while land, water and labour are all decreasing. Farmers first started growing rice in East and South Asia as long as 15,000 years ago, when people began to settle in river deltas and domesticated wild rice. Remains of early cultivated rice have been found in the Yangtze valley dating to about 8500 BC. Today rice is grown practically everywhere, except Antarctica. Rice is grown on flooded land and on dry land, in tropical rain forests of Africa and in arid deserts of the Middle East, on coastal plains and on the Himalayan mountains. In the year 2010, the world produced about 603 million tonnes of paddy rice. Most of that - about 583 million tonnes- was grown in Asia. It has been estimated that half the world's population subsists wholly or partially on rice. Ninety percent of the world crop is grown and consumed in Asia. Rice provides 27% of people's energy intake and 20% of their dietary protein. Its by-products are used for making straw and rope, paper, wine, crackers, beer, cosmetics, packing material, and even toothpaste. Evidences demonstrate that high-yield varieties yield about two times more than local varieties in Iran. High-yield varieties have particularly good potential to improve food security in developing countries where arable land is scarce, population is expanding and labor force is cheap. There has been a sharp rise in demand for rice in the wake of per capita income increase (resulting from increased oil income) and population growth in Iran which exceeded rice supply in many years leading to the import of rice or huge increase in price. But rice farmers have not gained sufficiently for a simple reason that such price increase has occurred at retail level and widened the gap between retail and on-farm prices, defined as marketing margin. On the other hand, Iran is eleventh producer of rice in the world with an annual production of 2600000 tons (2010). Mazandaran province, which is located in the north of Iran and close to the sea, has the largest production of rice in Iran (1380622 tons in 2010) because of kind of its climate. Especially, the growth of rice production in this province during the last two decades has been considerable in parallel to the population growth. In addition to the increase of population, some factors accompanying with that such as the increase of the income level and purchase ability, the change of the consumption pattern of the families toward rice consumption and the development of technology have caused the industrial rice production to open the place in the economy of Iran, so that rice has become the second largest staple food crop in Iran. Moreover, high-yield variety technology has improved farmers with high yield, saved land for agricultural diversification and created rural improvement opportunities. Studying the trend of rice production and import during the period is very fruitful. Table 1 shows rice economy in Iran during 1982-2010. As table 1 shows, rice domestic production has an increasing trend as a result of increase in area under rice and use of high yield varieties. Despite this fact, domestic production has been always left behind consumption and this gap has been usually filled by import. High population and national income growth - resulting from sharp increase in postwar oil income - may be the main cause of such rise in rice consumption as the common food among Iranian families. Rice import is also considered as the best policy to control the domestic market as price goes up sharply. (i.e., see years 2006 and 2008). That is why government has maintained increasing rice import in order to equilibrate the domestic market. For instance, largest import belongs to year 2007 as a result of noticeable fall in domestic production and rise in domestic price.

**Table 1: Rice economy ,1990-2010**

Year	Production (ton)	Import (ton)	Export (ton)	Price index(\$)
1990	1784000	492679	-	0/247
1991	1803000	807442	-	0/246
1992	1419000	338287	-	0/239
1993	1854000	881503	-	0/351
1994	1981000	793657	-	0/355
1995	2357000	559708	20	0/398
1996	2364000	943837	2116	0/474
1997	2281000	1157508	3437	0/452
1998	2259000	481551	197	0/658
1999	2301000	1146698	1630	1/57
2000	2685000	915229	26	1/064
2001	2350000	637498	231	1/09
2002	2771000	631293	12	2/17
2003	2348000	1021836	425	3/11
2004	1971000	1167217	488	1/94
2005	1990000	698925	184	2/38
2006	2931300	1047499	448	3/02
2007	2888000	8750180	327	3/14
2008	1300000	6712638	-	4/11
2009	2931400	1044659	-	3/51
2010	2500000	1216192	-	-

**Source: Iranian Statistical Headquarter**

On the other hand, existence of high marketing margin is one of the greatest problems that the agricultural sectors face in the developing countries. Marketing margin is defined as “the difference between the average price paid by consumers for a finished product with an agricultural raw materials base”.

**Marketing margins are the result of demand and supply factors, marketing costs, and the degree of marketing channel competition. Thus margins reflect aggregate processing and retailing firm behavior which influence the level and variability of farm prices and may influence the farmer's share of the consumer food dollar (Gardner, 1975; Tomekand Robinson, 1990; Wohlgenant, 1989).**

Unfortunately most of agricultural research centers in Iran focus on the yield increase inside the farms and neglect the importance of efficiency of marketing system outside the farms, along the marketing chain as the raw materials are transmitted and prepared for final consumption. Evidence demonstrates that a considerable amount of processed products of agricultural crops in Iran (13-27%) spoil along the marketing process due to traditional marketing methods (inappropriate packaging, traditional storage, ...) or unnecessary long marketing channels [4]. This failure would lead to an enormous rise in retail prices while the on-farm prices remain low and consequently both of farmers and consumers would lose

noticeably. Application of traditional marketing methods keeps marketing costs high, lowers the concentration index within the agricultural sector and transfer unfair benefits to middlemen. Rice farmers are not exempted from this unjust rule in Iran. They always complain about their slight share in the total revenue of domestic rice market despite their basic role in this market while brokers, middlemen, rice processing manufactories and wholesalers own most shares.

Figure 1: Rice marketing channels in Iran: Mazandaran province

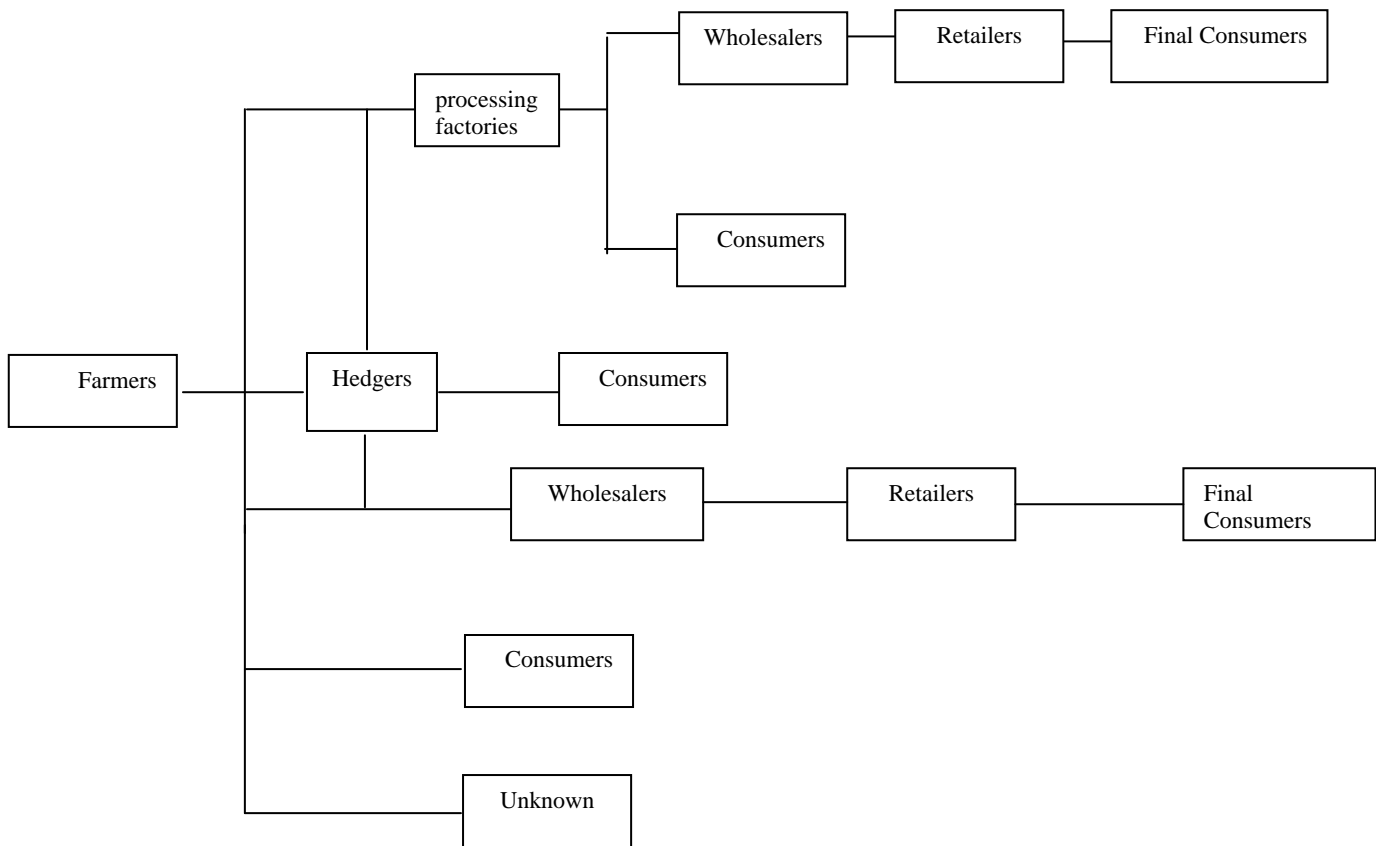


Figure 1 shows different rice marketing channels in Mazandaran province. The longer marketing channel, the larger marketing margin. The length of rice marketing channel is directly influenced by state policies in terms of farmers or consumer`s protection so that the shares of hedgers, processing manufactories, wholesalers and retailers to receive the raw crop after harvest have been %9, %30.9, %56.2 and %11.1 respectively in 2010.

With respect to the above-mentioned issues , the necessity for practical researches to examine rice marketing system in Iran seems obvious .Since farmers produce two varieties of rice (local and high yield varieties) ,this paper presents a simple analysis of rice marketing system for these two varieties in Mazandaran province.

**Methodology**

In spite of the fact that farmer`s income has declined in the past several years, retail prices of agricultural products have shown little tendency to follow suit. It has been customary to lay the blame for this situation on increased costs of marketing and generally to blame middlemen for the high cost of living. Studies made by Bureau of Agricultural Economics indicate that the marketing margin for agricultural products takes , on average, 45 percent of the consumer`s dollar. Statements such as these ,appearing in official publications, are accepted by public at large and are widely quoted in popular periodicals. The conclusion

often drawn ,unfortunately, is that there is considerable “waste in distribution”. Since the department of agriculture studies of “ marketing margin” are used as evidence of the high costs of marketing, even in congressional hearings, it behooves every student and practitioner in the field of marketing to examine these studies carefully. Such an examination reveals that the cost of marketing has been grossly and unfairly overstated for the simple reason that the studies are based on an incorrect concept of marketing . The costs ascribed to marketing in these studies are, as a matter of fact , a combination of marketing and manufacturing costs.[ ] The marketing margin, characterized as some function of the difference between retail and farm price of a given farm product, is intended to measure the cost of providing marketing services. The margin is influenced primarily by shifts in retail demand, farm supply, and marketing input prices. But other factors also can be important, including time lags in supply and demand, market power, risk, technical change, quality, and spatial considerations. Topics for future research include improved specifications for margins and demand and supply shifters, retail-to-farm price transmission of retail demand changes, and impacts of vertical integration and policy interventions.

Total marketing margin for an agricultural crop equals the sum of retail and wholesale marketing margin:

$$M_w = P_w - P_f$$

$$M_r = P_r - P_w$$

$$M_t = M_w + M_r = P_r - P_f$$

Where  $P_f$ ,  $P_w$ ,  $P_r$ ,  $M_w$ ,  $M_r$  and  $M_t$  are farm price, wholesale price, retail price, wholesale marketing margin, retail marketing margin and total marketing margin respectively.

Calculating the share of marketing factors has been always important in marketing studies.

The share of farmer, wholesaler and retailer from retail price are calculated by following formulas:

$$SH_f = \frac{P_f}{P_r} * 100$$

$$SH_w = \frac{P_w - P_f}{P_r} * 100$$

$$SH_r = \frac{P_r - P_w}{P_r} * 100$$

Where  $SH_f$ ,  $SH_w$ ,  $SH_r$  are farmer, wholesale and retailer`s share respectively.

Marketing cost coefficient which presents marketing margin as a fraction of retail price is defined as:

$$Mcc = SH_w + SH_r = \frac{MM}{P_r} * 100$$

In fact, Mcc indicates the share of final consumers from the total marketing margin of product. Another noticeable criterion in agricultural marketing studies is marketing efficiency

due to the fact that marketing is a production process in which value is added to raw material. To calculate marketing efficiency we need information about inputs and costs and so on. Shepherd, G.S. and G.A. Futrell (1969) defined marketing efficiency as followed:

$$ME = \frac{VA}{MSC} * 100$$

$$VA = P_r - M_{TC}$$

VA stands for value added and refers to the difference between retail price and all payments by marketing factors ( $M_{TC}$  or total cost of marketing) .  $M_{TC}$  Equals wholesale costs plus retail costs plus transportation cost plus retail price. MSC stands for marketing services cost. **The bigger VA than MSC , the more efficient marketing system.**

## Results

The results of paper have been shown in tables 2-4. Data and statistics come from the different official organizations such as Commerce ministry and agricultural ministry. Marketing margin(MM), marketing cost coefficient (MCC) and marketing efficiency(ME) for local varieties(Local Tarom, Deilamani Tarom) and high yield varieties (Khazar, Nemat, Neda,Haraz, Sepidrod) in Mazandaran province have been calculated. Table 2 shows the on farm ,retail and total marketing margin for local and high yield varieties. As shown obviously in this table, Local Tarom variety has the largest marketing margin in 2000 among all varieties. In 2010, total marketing margin for local varieties have also been significantly larger than all high yield varieties so that Local Tarom Variety has the largest marketing margin (1850 Rials ). The reason of this fact lies on the existence of guaranteed rates and state demand increase (buffer stock policy). Note that local varieties rank above HYV in terms of quality(smell and taste) and health consideration. This may be the main cause of significant marketing margin`s gap between local and high yield varieties.

Table 2: On farm ,retail and total marketing margin for local and high yield varieties.

Variety	2000			2010			%ΔMM	%Growth Rate		
	On-Farm price	Retail price	Total MM	On Farm price	Retail price	Total MM		On Farm price	Retail price	Total MM
Local Tarom	7250	8480	1230	10150	12000	1850	50	5	5	6
Deilamani Tarom	7100	8250	1150	9500	11200	1700	48	4	4	6
Khazar	5400	5950	550	8350	9650	1300	136	6	7	13
Nemat	2600	3030	430	5450	6550	1100	156	11	12	14
Neda	2450	2820	370	5550	6400	850	130	12	12	13
Haraz	2300	2700	400	5600	6500	900	125	14	13	12
Sepidrod	2300	2850	550	5250	6250	1000	82	13	12	9

Source: research findings

Table 3 shows the marketing cost coefficient during the studying period (2000-2010). As it is clearly seen in this table , this coefficient has totally risen in 2010 relative to 2000 for both varieties (except for Sepidro variety) probably as a result of technological advancement failure in processing industries involving in rice marketing chain (progress in packaging, transportation, advertisement, ... in recent years) which is costly in a short period of time and has made the marketing channels longer ,too. It can also demonstrate the increased role of middlemen in rice marketing chain during the period. In addition, marketing cost coefficient for local varieties (Local Tarom and Deilamani Tarom) is lower than high yield varieties in both years. For example, total marketing margin of local Tarom variety include about 14% of it`s retail price. Sepidro and Nemat varieties have the largest marketing cost coefficient (24,20) among all varieties in 2000 and 2010 respectively. Note that local varieties are mostly sold in local- closed to farms markets with shorter channels which sharply reduces the cost of marketing per each kilo of rice. Local varieties are also supplied in local cheap packages with no charming advertisement and consequently are less costly.

Table 3: marketing cost coefficient for local and high yield varieties.

Variety	2000			2010			%ΔMcc
	SH <sub>w</sub>	SH <sub>r</sub>	MCC	SH <sub>w</sub>	SH <sub>r</sub>	MCC	
Local Tarom	6	8	14	7	8	15	7.1
Deilamani Tarom	6	7	13	8	6	14	7.6
Khazar	7	3	10	9	7	16	60
Nemat	11	6	17	8	12	20	17.6
Neda	8	7	15	6	10	16	6.6
Haraz	10	7	17	9	9	18	5.5
Sepidro	14	10	24	11	9	19	-20.8

Source: research findings

Table 4 shows the result of marketing efficiency for both local and high yield varieties. As this table shows marketing efficiency for local varieties is larger than high yield varieties so that Deilamani Tarom variety owns the largest marketing efficiency (%203) among all varieties and Khazar variety owns the lowest marketing efficiency (%134). It means that only 134 Rials returns out of 100 Rials of investment in production of high yield varieties while this figure for local varieties is more than 200. This amazing finding reflects that technological progress in rice farms and along the rice marketing chain has failed to improve the efficiency of rice marketing system in Mazandaran province. It may stems from the usage of inappropriate technologies inside the farms that is unable to raise the quality in parallel with the quantity of rice production and outside the farms along the rice marketing process. Technologies that are not consistent with the consumer`s taste and traditional marketing system of rice in Iran. Note that marketing channels for high yield varieties are unnecessarily long which demonstrates the destructive rule of brokers in rice marketing system. But we can hopefully see that marketing efficiency in 2010 is larger than 2000 for most of varieties and this trend has been followed over the period.

Table 4: Marketing efficiency for local and high yield varieties.

Variety	2000			2010		
	Value added	MSC	ME	Value added	MSC	ME
Local Tarom	716	515	139.1	1213	638	190.2
Deilamani Tarom	771	380	203	1081	620	174.4
Khazar	261	290	90	755	545	138.5
Nemat	231	200	115.5	643	458	140.4
Neda	195	175	111.4	483	368	131.3
Haraz	215	185	116.2	578	323	179.1
Sepidrod	315	235	134	543	458	118.6

Source: research findings

### Conclusion

Rice is a strategic crop in the world's agricultural economics. In Iran, however, Rice is the only major cereal crop that is primarily consumed by humans directly as harvested, and only wheat and corn are produced in comparable quantity. Iranian people eat an average of 40 kilogram of rice every year. Iran ranks eleventh producer of rice in the world with an annual production 2500000 tones(2010), but the third importer of rice. The marketing margin ,or the farm-to-retail price spread, is the difference between the farm value and retail price. It presents payments for all assembling, processing, transporting, and retailing charges added to farm products[Elitzak(1996)].To study rice marketing system in Iran, this paper calculated rice marketing margin, market efficiency and marketing cost coefficient in Mazandaran province during 2000-2010. Results show that HYV's wholesale marketing margin is less than local varieties in 2000 while this trend is reversed in 2010. Moreover, retail marketing margin, total marketing margin, market efficiency and cost marketing coefficient for local varieties are all greater than HYV. Since the existence of a high marketing margin in both retail and wholesale level of rice marketing chain in Iran, establishment of agricultural cooperatives and enhancing the rule of farmers would lead to smaller rule of middlemen in rice marketing chain and would increase farmer's net benefits. In addition, lower marketing efficiency of high yield varieties than local varieties demonstrates that the regional state has failed to apply appropriate technology which raises efficiency through the rice marketing process.

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