ECONOMIC ANALYSIS OF OILSEEDS MARKETING IN MAHARASHTRA

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Abstract: Agriculture is the key factor for overall development of the Indian economy. The Maharashtra has wide agro-climatic zones based on varying rainfall pattern, topography, soil characteristics, climate and cropping pattern. Agricultural Marketing not only stimulates production and consumption but accelerates the pace of economic development. The main objective of this study is to study the trends in arrivals and prices of oilseed crops in selected markets. The time series data of last 10 years i.e. from 1999 to 2009 on monthly arrivals and prices of oilseed crops in Gultekadi Pune and Solapur market were collected for computing the trends, growth rates and relationships.

The results of the correlation coefficient between arrivals and prices of sunflower in Solapur market was positively significant, indicating that increase in arrivals causes increase in prices, while the correlation coefficient between arrivals and prices groundnut in Pune market were negatively significant, indicating the inverse relationship among them.

The Policy implications inferred from this study is that, to reap the benefits of higher prices, it is suggested that farmers should sale the groundnut in July while sunflower in December. It is established fact that farmers producers are in dive need of cash after the crop production is over, hence they sale their produce immediately after harvest when prices are low. To overcome this problem, the farmer's producers will have to provide with some funds which they need for to meet their expenses.

Introduction: Agriculture is the key factor for overall development of the Indian economy. Maharashtra is the second largest state in population and third in area and forms major part of peninsular India with nine agro-climatic zones. The Maharashtra has wide agro-climatic zones based on varying rainfall pattern, topography, soil characteristics, climate and cropping pattern. The technological advances in agriculture have not made much headway in the contribution to increased production and productivity. The oilseeds are most important in Maharashtra as far as shortage of production is concerned.

Agricultural Marketing not only stimulates production and consumption but accelerates the pace of economic development. With a breakthrough in agricultural production and surplus as a result of the introduction of modern farm technology, high yielding varieties and other inputs, the need for an efficient agricultural marketing has increased manifold. Agricultural marketing is a process which starts with a decision to produce a market table, farm commodity and involves all the aspects of marketing structures of system, both financial and institutional, based on technical and economic considerations and includes pre and post harvest operations, assembling, grading, packaging, transportation and distribution. According to Kohl and Uhl, (1980) agricultural marketing is the performance of all business activities involved in the flow of agricultural commodities from the point of initial production until they are in the hands of the ultimate consumer. Therefore an attempt has been made in this to study the trends in arrivals and prices of cereals in Western Maharashtra.

Objectives: In the light of the above discussion, the main objectives of this study were to study the trends in arrivals and prices of selected crops in selected markets.

Methodology: The time series data of last 10 years i.e. from 1999 to 2009 on monthly arrivals and prices of cereal crops in Gultekadi Pune and Solapur market were collected for computing the trends, growth rates and relationships.

i) Seasonal indices of monthly arrivals and prices of selected crops were estimated by using simple average method.

ii) The trends in arrivals and prices of selected commodities was worked out by using the following type of exponential function.

Ya and $Yp = ab^t$

Where, Ya and Yp = Monthly arrivals and average prices, respectively

a = Constant

b = Trend co-efficient

t = Time period in years

The compound growth rate for arrivals and prices of selected agricultural commodities was estimated by using formula, CGR = r = (Antilog b – 1) X 100

This enables to know the per cent increase or decrease in arrivals and prices of selected commodities over a study period.

The variability in arrivals and prices of selected crops in selected markets were studied and calculating the coefficient of variation (CV) for the period 1999-2009, by using the following formula,

$$CV = \frac{SD}{Mean} \times 100$$

Where, CV = Coefficient of Variation

SD = Standard Deviation

Mean = $\sum X/N$

X = Monthly arrivals and prices of selected crops
N = Number of year

Results and Discussion: The nature of Indian agriculture is undergoing a change in the recent years and it has been indicated by number of recent studies. Change in agriculture can be reflected at the micro level. In other words, at farm level one would expect change in resource use structure over a period of time in response to changes in technology, investment in agriculture, change in price mechanism and agricultural infrastructural development. Due to changing scenario of agricultural prices the trends in arrivals and prices are given by following sub heads.

- Seasonal indices of arrivals and prices of oilseeds in selected markets
- Relationship between arrivals and prices oilseeds in selected markets
- Growth rates in arrivals and prices of major oilseeds in selected markets

Seasonal indices of arrivals and prices of crops in selected markets: The fluctuations in arrivals of farm commodities are noticed due to their seasonal production constrained by Agro-climatically parameters. On the other hand, the demand for the most the farm commodities is inelastic. This section intends to study the trends in arrivals and prices of selected commodities with an understanding to suggest measures to check-up fluctuations in prices of farm products to benefit the farmers.

The present study examined the trends in arrivals and prices of selected commodities, the impact of lagged year arrivals or prices on current year arrivals and prices, nature and relationship between arrivals and prices of selected commodities over the period of 11 year from 1999 to 2009 in Agricultural Produce Market Committee, Pune and Solapur.

The seasonal indices of arrivals and prices of selected crops in selected markets are given in Table 1 and 2

Groundnut: The seasonal indices of groundnut in Pune market revealed that, the arrivals were maximum in the month July (380.50 per cent) followed by June (275.01 per cent) and August (213.17 per cent), while lowest arrivals were observed in the month of February (0.37 per cent) followed by March (1.16 per cent) and January (1.79 per cent). The seasonal index of prices were highest in the month of January (139.68 per cent) followed by November (118.74 per cent) and December (117.09 per cent). The coefficient of variance has shown wide fluctuations in case of arrivals (84.40 per cent) and in case of price it was less (24.82 per cent).

Sr. No.	Months	Groundnut	
		A	**P**
1	January	1.79	139.68
2	February	0.37	67.18
3	March	1.16	97.20
4	April	14.18	112.36
5	May	123.87	94.12
6	June	275.01	80.46
7	July	380.50	83.35
8	August	213.17	88.01
9	September	108.57	98.89
10	October	71.78	102.91
11	November	6.69	118.74
12	December	2.92	117.09
13	C.V.	84.40	24.82

Table 1 Monthwise indices of arrivals and prices of major crops in Pune Market (Period 1999 to 2009)

(Note: C.V.= Coefficient of Variance)

From the above discussion, it was observed that when the arrivals were more and prices at lowest level. Most of produce were sold immediate after harvesting of crop. Similar findings were noticed by Nandal et al (1990). Thus the study suggests selling the produce in January month when the prices were highest.

Sunflower: The seasonal indices of arrivals of sunflower in Solapur market were found higher during the month of October (211.94 per cent) followed by January (202.70 per cent) and November (184.87 per cent). The indices of arrivals were lowest in the month of July (19.87 per cent) followed by June (34.01 per cent) and August (35.98 per cent). In case of arrivals, there was wide fluctuation observed i.e. coefficients of variancewas 110.49 per cent and it was to the extent of 32.04 per cent in case ofprices. In case of prices the indices were higher during December

(113.98) followed by February (109.32) and June (109.14).

Table 2 Monthwise indices of arrivals and prices of oilseeds in Solapur market (Period 1999 to 2009)					
Sr. No.	Months	Groundnut		Sunflower	
		A	P	A	P
1	January	24.60	94.36	202.70	108.32
2	February	9.62	85.99	103.35	109.32
3	March	12.93	78.96	79.80	106.94
4	April	6.06	71.42	44.73	87.29
5	May	22.92	106.74	54.62	103.36
6	June	149.05	114.89	34.01	109.14
7	July	271.87	116.12	19.87	91.20
8	August	218.11	114.41	35.98	81.45
9	September	215.55	112.10	44.15	91.11
10	October	177.27	109.09	211.94	96.55
11	November	60.19	97.31	184.87	101.33
12	December	31.85	98.62	183.97	113.98
13	C.V.	121.09	27.28	110.49	32.04

(Note: C.V.= Coefficient of Variance)

From the above results it was concluded that, there exist positive relationship between arrivals and prices during most of the months. Similar findings were noticed by the Mali et al (2002) and Anonymous (2007). So this study suggests that, farmers should sell their produce during the month of December to January in order to fetch better prices.

Co-relationship between arrivals and prices of major crops in selected markets: The Correlation Coefficient between arrivals and prices of groundnut and sunflower in Pune and Solapur Market are given in table 3.

Groundnut: The correlation coefficient of arrivals and prices of groundnut was 0.13 and it was non significant with less magnitude which indicated that there is no relationship between arrivals and prices of groundnut. In case of Pune market, correlation coefficient was -0.21 negatively and highly significant which indicated that prices are dependent on arrivals with less magnitude of groundnut in Solapur market.

Sunflower: The correlation coefficient of sunflower in Solapur market was positive and highly significant with low magnitude (0.17) indicated that, arrivals have no effect on prices and there exists complementary relationship between them.

Table 3 Correlation Coefficients between arrivals and prices of crops in Pune and Solapur Markets (Period 1999 to 2009)			
Sr.No.	Crop	Correlation Coefficient	
		Solapur Market	Pune Market
1	Groundnut	0.1337 NS	-0.2131***
2	Sunflower	0.1768**	--

To sum up, it has been noticed that from the above results that the correlation- coefficients of arrivals and prices of groundnut in Pune market shows negatively and highly significant at one per cent level indicated that inverse relationship existed in this particular crop and market. But in sunflower crop in Solapur market shown positive and highly significance level which indicates direct relationship between arrivals and prices in this particular crop and market it means market law was not applicable to this situation. Similar findings of inverse relationship between arrivals and prices were noticed by Mamledesai et al (1987), Prakash (1998) and Positive

relationship between arrivals and prices was noticed by Anonymous (2007).

Growth rates in arrivals and prices of oilseeds in selected markets: The compound growth rates of arrivals and prices of groundnut and sunflower have been worked out separately for Solapur and Pune market and are presented in table 6

Groundnut: It can be revealed from table 4 that, the CGR of arrivals of groundnut in Solapur (1.88 per cent) and Pune (2.47 per cent) markets were positive and non significant. In case of prices CGR in Solapur (6.66 per cent) and Pune (5.65 per cent) market were positive and highly significant means prices has

shown increasing trend in both the markets over a   period of time.

Table 4 Compound growth rates of arrivals and prices of pulses in Solapur and Pune Market (Period 1999 to 2009)				
Sr.No.	Crop	Arrivals/ Prices	Compound Growth Rate	
			Solapur Market	Pune Market
1	Groundnut	A	1.88NS	2.47NS
		P	6.66***	5.65***
2	Sunflower	A	10.63NS	NA
		P	10.43***	NA

Sunflower: The CGR of arrivals of sunflower in Solapur market was (10.63 per cent) positive and non-significant. In case of prices the CGR (10.43 per cent) was highly significant and positive which indicated that increased prices over a period of 10 year.

It has been seen from the above results of oilseed crops that the compound growth rates of arrivals of groundnut and sunflower in Solapur market and groundnut in Pune market had showed positive growth rates which means arrivals of these crops have shown increasing trend. This is due to tendency of economy to grow over the time wherein there are steady rise in prices of all commodities.

Summary and Conclusion:

- The peak arrivals of groundnut were concentrated in the months of May to September in Pune. Whereas, the indices of prices for groundnut (November- December, January and April) were highest in Pune market. The peak arrivals of sunflower were maximum in the months of October to January in Solapur market.. The Seasonal indices of prices of selected crops in Solapur market do not show sufficient fluctuation as indicated by the magnitude to the co-efficient of variation.
- The correlation coefficient between arrivals and prices of sunflower in Solapur market was positively significant, indicating that increase in arrivals causes increase in prices, while the correlation coefficient between arrivals and prices groundnut in Pune market were negatively significant, indicating the inverse relationship among them.
- The compound growth rates arrivals of groundnut and sunflower in Solapur and arrivals of groundnut in Pune market were non-significant, means there is widely fluctuation in arrivals.

Policy implications: For to reap the benefits of higher prices, it is suggested that farmers should sale the groundnut in July while sunflower in December .It is established fact that farmers producers are in dive need of cash after the crop production is over, hence they sale their produce immediately after harvest when prices are low. To overcome this problem, the farmer's producers will have to provide with some funds which they need for to meet their expenses. It can be done by arranging the scientific warehouses in the groundnut and sunflower producing areas where the farmers produce are stored and against this they are given loans. By this process they can post-pone their sales and thereby reap the benefits of higher prices those can be realized in later period.

References:

1. Mali, B.K., P.N. Shendge, S.S. Bhosale and D.V.Kasar. 2002. Trends in arrivals and prices of important oilseeds in selected regulated markets of Western Maharashtra. Indian Journal of Agril.Marketing. 2002, Vol.16 (3):124.
2. Pandey, R. N., R.K. Lather, Dalvir Singh and C.V.S. Malik, 1993.Comparative economics and productivity constraints of main oilseed crops in Harayana.Indian. J. Agril. Economics, Vol. 48 (3): 397-398.
3. Talekar, P.D. and R. P. Thakare 1998.Costs, returns and extent of technology adoption in oilseeds and pulses.Indian J. Agril. Econ, Vol. 48 (3): 638.

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