



Arrivals and Price Analysis of Selected Cereals in APMC, Akola (M.S.)

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ABSTRACT

The present study was undertaken with a view to examine the price analysis of cereals in APMC, Akola. Keeping in view of this study has been undertaken with following objectives. This study was based on the secondary data of arrivals and prices of selected cereals i.e. Jowar and Wheat crop collected from the office records of APMC Akola district was selected purposively for the period 2006-07 to 2017-18. Trends in arrivals and prices, seasonal index by using simple average method, coefficient of variability were estimated by using appropriate statistical technique. The annual compound growth rate of arrivals in case of Jowar (-19.55 per cent) and in case of wheat (-7.43 per cent) were not significant during the study period. The annual compound growth rates of prices in case of Jowar (9.83 per cent), Wheat (5.36 per cent) Jowar was highly significant at 1 per cent level. The prices of Jowar were highest in the month of July to March and lowest in the month of April to June in APMC Akola market. In year 2017-18 the maximum price were observed in month of July (128.55 per cent) followed in year 2011-12 in month of December (128.44 per cent). The seasonal indices of arrival showed that the peak arrival of Wheat was recorded in month April in APMC Akola. There after arrival declined from October till January in APMC Akola in year 2011-12 maximum arrivals of Wheat observed in month of March i.e. 456.45 per cent followed in year 2017-18 in month of April i.e. 408.06 per cent. The maximum price of Wheat in year 2017-18 were observed in month of June (126.26 per cent) followed in year 2011-12 in month of January (124.78 per cent). The more variability was observed in the arrivals of Jowar and Wheat due to fluctuations in the production. The monthly seasonal indices of arrivals were found higher immediately after harvest. The price index of selected crops was found lower during immediately after harvest. The variations in arrivals as well as prices over the years were found relatively higher.

Keyword: Arrival, Prices, A.P.M.C, Seasonal indices.

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INTRODUCTION

The APMCs were established by state government for regulating the marketing of different kinds of agricultural produce. The market information relating to market prices and arrivals over a period of time helps the cereal growers to take decision about the future production pattern and sale of agricultural commodities in the market during specific period.

The price fluctuation in agricultural commodities is a common phenomenon due to their seasonal nature of production, wide ecological imbalances compared to other crops and seasonal demand for agricultural commodities. Fluctuations in market arrivals largely contribute to price instability and price fluctuations of agricultural commodities, there is need to have an understanding of the price behavior over time. APMCs help the farmer in disposing of their produce in the market smoothly by reducing the exploitation level and to promote fair trade by providing infrastructural facilities to farmers. In recent years the seasonal variability in arrivals and prices has created serious marketing problems to farmers, consumers, planners and policy makers. The seasonality in arrival is resulted in gluts which occurred in peak season resulting in unfavorable prices to grower in peak season and high prices to consumer in off season. The study of arrivals and prices helps the farmer to find out the best time for marketing of Agricultural Commodities to secure higher price for their produce. Present study was undertaken to keep in mind, To estimate the trends in arrival and prices of selected agricultural commodities and To estimate the

seasonal indices of arrivals and prices of selected agricultural commodities. Prices of selected agricultural commodities are low in peak arrival period.

MATERIAL AND METHODS

The present study has based on the data of arrivals and prices of selected agricultural commodities in APMC Akola district for the period 2006-07 to 2017-18. The study was based on the month wise data in respect of arrival and prices of selected cereals i.e. Jowar and Wheat crop in APMC, Akola, Data was analyzed statistically by used the simple tabular method.

The growth rate were estimated by using exponential Function

$$Y_a / Y_p = ab^t$$

Where,

Y_a and Y_p = Yearly arrivals and prices, respectively.

a = Intercept/constant

b = Trend coefficient / Regression coefficient

t = Time variable.

From the estimated function, the compound growth rate (CGR) was calculated by -

$$\text{CGR} = [\text{Antilog}(\log b) - 1] \times 100$$

Seasonal index can be calculated in index form as a measure of seasonal variation. Seasonal variations in arrival and prices were calculated by simple average method.

$$\text{Seasonal index} = \frac{\text{Monthly average for that month}}{\text{Average of monthly average}} \times 100$$

RESULTS AND DISCUSSION

It can be revealed from the table 1 that, the annual compound growth rate of arrivals in case of Jowar - 19.55 per cent and in case of Wheat -7.43 per cent was not significant for both the commodities during the period under study.

The annual compound growth rates of prices in the case of Jowar (9.83 per cent), wheat 5.36 per cent were positive growth rate and Jawar and Wheat was highly significant at 1 per cent level.

The Seasonal indices in arrival of Jowar selected markets are shown in table 2. The seasonal indices of arrival showed that Jowar arrival start rising from October and it reaches to maximum in November, there after arrival declined from February till September in APMC Akola. The maximum arrivals of Jowar observed in month of November in year 2006-07 601.31 per cent, followed to the year 2007-08 and 2011-12 was 463.29, 315.63 per cent respectively.

The prices of Jowar were highest in the month of July to March and lowest in the month of April to June in APMC Akola market. In year 2016-17 the maximum price were observed in month of December 120.74 per cent. The maximum price of Jowar observed in the month of July 2017-18 was 128.55 per cent followed in 2011-12 in month of December was 128.44 per cent. In year 2017-18 the maximum price were observed in month of July (128.55 percent).

The seasonal indices of arrival showed in table 4 that the peak arrival of Wheat was recorded in month April in APMC Akola. There after arrival declined from October till January in APMC Akola. In year 2011-12 maximum arrivals of Wheat observed in month of March was 456.45 per cent followed in year 2010-11 was 358.15 per cent.

In year 2017-18 the maximum price was observed in month of June 126.26 per cent followed in years 2011-12 was 124.78 per cent. In year 2013-14 the maximum price were observed in month of May 117.39 per cent. In year 2016-17 the maximum price were observed in month of July 110.51 per cent.

In case of arrivals of Jowar the variation ranged from 34.63 per cent to 163.01 per cent during the year (2006-07 to 2017-18) it was found that the average variability of arrivals of Jowar is quite high. The maximum variability in arrivals of Jowar was found during the year 2006-07 (163.01 per cent) and it was minimum for the year 2010-11 (34.63 per cent).

The market arrivals of wheat in APMC, Akola revealed that the maximum variability in year 2011-12 (120.56 per cent) and it was found to be lowest in the year 2016-17 (47.96 per cent).

In case of yearly price variability of Jowar the maximum price variability was found during the year 2011-12 (47.34 per cent) and it is minimum during the year 2007-08 (3.97 percent). In case of price variability of wheat, it was revealed that the maximum variability was found during the year 2011-12 (46.79 per cent) and it was minimum in the year 2010-11 (2.52 per cent). The selected commodities are Jawar and wheat were highly significant at 1 per cent level, indicating thereby, the prices of Jowar and wheat were increasing by 9.83, 5.36 per cent per annum, respectively during the study period.

The seasonal indices of Jowar were revealed that the maximum arrival of Jowar was found in the month of November and minimum arrival index was noticed in the month of July. The seasonal indices of Jowar regarding prices revealed that the price index for the month of August was the highest followed by September and March. It was lowest in the month of May.

In case of wheat, it was seen that the seasonal indices for wheat arrival was more during the month of April followed by March, while it was lowest during the month of January. In case of prices the maximum seasonal indices were noticed in the month of January and minimum in the month of May.

Table1.Compound Growth rates in arrivals and prices of Jowar and Wheat in APMC, Akola.

Crops	Arrivals	Prices
	CGR (%)	CGR (%)
Jowar	-19.55	9.83***
Wheat	-7.43	5.36***

*** indicates significance at 1 per cent level.

Table 2.Seasonal indices of (month wise) arrivals of Jowar in APMC,Akola. (Per cent)

Month	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Apr	35.52	41.07	48.24	13.32	73.45	18.58	35.88	158.26	6.93	47.70	13.61	61.90
May	36.37	22.91	40.92	8.97	49.68	0.00	28.02	88.63	10.32	51.27	19.61	0.00
Jun	27.80	15.53	30.81	5.44	37.77	8.02	13.69	65.09	7.03	37.00	12.51	17.74
Jul	24.30	15.20	14.38	4.90	34.78	0.00	7.67	67.39	11.62	21.24	4.65	46.69
Aug	32.92	19.72	19.74	9.14	45.67	8.75	24.88	36.19	13.75	28.26	14.68	32.13
Sep	26.47	7.30	27.69	1.65	22.02	6.36	21.80	22.65	17.54	31.75	13.51	32.77
Oct	76.46	176.52	62.61	48.59	47.67	46.49	78.04	59.63	6.02	115.47	129.33	12.96
Nov	601.36	463.29	201.62	254.36	122.60	315.63	218.11	58.06	283.52	194.29	233.02	229.03
Dec	163.31	217.67	67.40	150.64	118.26	120.87	137.30	50.46	190.36	39.90	98.14	81.17
Jan	95.78	101.79	63.56	85.75	55.88	59.81	45.19	27.96	57.49	45.47	45.82	59.58
Feb	46.76	78.09	42.31	37.20	25.05	33.01	21.80	9.17	30.43	21.99	51.95	40.59
Mar	32.94	40.92	30.73	30.04	17.15	32.48	17.63	6.51	14.99	15.68	13.18	35.45

Seasonal indices of (month wise) arrivals of Jowar in APMC,Akola.

Table 3. Seasonal indices of (month wise) prices of Jowar in APMC, Akola (Per cent)

Month	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Apr	84.51	96.09	89.40	92.26	100.34	99.61	90.56	99.04	97.31	107.53	79.11	130.53
May	92.96	99.87	88.71	101.19	93.65	0.00	89.72	97.55	102.25	96.26	82.73	0.00
Jun	95.49	99.87	96.28	98.21	98.11	115.33	86.77	97.92	101.31	97.00	85.72	115.74
Jul	102.25	105.17	110.03	105.95	103.13	0.00	93.51	101.88	83.64	100.11	66.70	128.55
Aug	102.25	101.39	107.97	102.38	102.57	125.82	106.56	96.65	90.91	101.97	118.95	118.66
Sep	106.48	99.87	101.09	102.38	93.65	125.82	106.56	98.67	101.82	103.82	119.58	110.75
Oct	87.04	90.79	92.84	92.26	90.09	120.58	96.88	90.67	90.91	97.37	77.90	102.84
Nov	103.94	102.90	98.34	102.38	89.19	122.15	101.09	104.65	101.82	85.28	117.12	109.80
Dec	107.32	105.93	99.71	100.00	100.34	128.44	107.41	99.04	112.73	86.24	120.74	104.82
Jan	106.48	99.12	103.84	101.79	103.13	125.82	107.41	102.78	110.91	114.94	106.25	95.33
Feb	106.48	99.87	105.21	102.98	108.71	122.15	105.30	100.91	101.82	101.97	118.32	80.14
Mar	104.79	99.12	106.59	98.21	117.07	114.29	108.25	110.25	104.58	107.53	106.88	102.84

The maximum variability in arrivals of Jowar was found during the year 2006-07 and it was Minimum for the year 2010-11. In case of yearly price variability of Jowar the maximum price variability was found during the year 2011-12 and it is Minimum during the year 2007-08. The maximum variability in arrival of Jowar in market was found during the month of January and lowest in the month of April. The maximum variability was found in case of prices of Jowar in the month of May and minimum in the month of October. The arrivals of Wheat in APMC, Akola revealed that the maximum variability in arrivals of wheat during the year 2011-12 and it was found to be lowest in the year 2016-17. In case of price

variability of wheat, it was revealed that the maximum variability was found during the year 2011-12 and it was Minimum in the year 2010-11.

The Maximum variability in wheat was Maximum during the month of May while it was Minimum during the month of October. In case of price variability in wheat was Maximum in the month of May while it was lowest in the month of March followed by March and April.

Table 4 Seasonal indices of (month wise) arrivals of Wheat in APMC, Akola. (Per cent)

Month	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Apr	148.77	253.77	324.77	315.98	304.80	93.39	342.09	326.53	166.66	240.33	96.11	408.06
May	125.52	131.17	248.50	140.76	125.90	0.00	117.48	184.21	182.62	273.76	202.49	0.00
Jun	71.96	92.49	152.93	83.67	77.64	132.36	130.20	109.27	332.29	165.99	123.55	23.15
Jul	72.16	65.39	42.23	59.57	55.35	0.00	7.46	76.19	51.62	96.79	30.91	97.09
Aug	73.11	66.31	57.82	45.92	48.93	113.06	46.36	98.82	78.85	83.46	48.08	119.52
Sep	69.18	56.08	58.35	6.66	48.43	123.21	65.54	70.86	56.09	75.88	65.86	100.52
Oct	63.30	53.59	54.16	83.29	35.32	51.05	41.97	51.68	44.40	60.04	94.22	70.58
Nov	54.73	47.92	48.12	65.85	29.51	64.60	36.43	11.71	85.30	59.72	83.08	94.61
Dec	69.51	68.18	55.51	50.68	39.65	85.84	29.20	15.93	64.81	29.25	94.42	55.49
Jan	76.34	68.50	33.94	35.35	32.65	41.15	19.77	23.30	21.44	11.51	90.33	86.15
Feb	114.76	77.04	37.80	73.43	43.65	38.88	74.28	3.88	19.75	37.56	171.78	67.70
Mar	260.65	219.57	85.87	238.84	358.15	456.45	289.23	227.63	96.18	65.71	99.17	77.13

Table 5. Seasonal indices of (Month wise) Prices of Wheat in APMC, Akola. (Per cent)

Month	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Apr	92.34	98.65	96.85	95.90	101.77	119.71	86.90	103.19	92.44	95.86	87.72	109.47
May	95.53	94.62	100.33	93.59	107.15	0.00	89.28	117.39	101.68	103.07	89.54	0.00
Jun	98.71	92.38	96.85	92.05	98.70	119.71	84.53	114.78	100.14	109.53	92.16	126.26
Jul	96.44	98.65	104.23	94.36	97.93	0.00	89.96	96.41	99.52	104.51	110.51	113.65
Aug	97.80	95.07	100.33	92.43	97.93	116.49	97.77	94.38	100.45	106.64	105.49	111.46
Sep	102.35	97.31	96.42	95.98	99.85	118.33	104.21	97.86	98.91	105.20	103.27	107.81
Oct	104.17	104.04	97.72	97.82	98.93	121.10	105.23	94.20	99.09	108.08	99.94	99.52
Nov	102.35	99.10	97.29	106.68	99.08	124.32	106.93	97.10	106.30	91.83	102.74	111.13
Dec	107.81	104.93	99.89	110.92	101.00	117.87	108.63	100.29	103.22	92.52	109.93	106.15
Jan	109.17	103.14	101.63	112.31	98.70	124.78	108.63	105.80	105.68	96.56	104.38	101.38
Feb	102.35	107.62	104.23	107.84	99.85	122.11	112.70	88.00	98.60	91.08	102.16	107.02
Mar	90.98	104.48	104.23	100.13	99.08	115.57	105.23	90.61	93.98	95.11	92.16	106.15

Variability in arrival and prices of Jowar and Wheat in APMC, Akola.

Table 6. Yearly variability in arrivals of Jowar and Wheat in APMC, Akola.

Years	Jowar		Wheat	
	Mean (qtls)	CV (%)	Mean (qtls)	CV (%)
2006-07	12409	163.01	3058.5	58.13
2007-08	9835.33	132.95	3702.16	67.84
2008-09	9878.15	49.53	8493.83	94.11
2009-10	29546.92	76.62	2373.58	90.39
2010-11	12429.54	34.63	3598.75	111.81
2011-12	18177.69	89.15	3615.91	120.56
2012-13	14774	62.91	2185.08	107.78
2013-14	1920.30	41.20	2554.16	99.32
2014-15	3854.76	88.80	4851.16	88.99
2015-16	2551.38	51.15	2468.25	83.24
2016-17	3998.30	68.46	1957.16	47.96
2017-18	2801.38	59.46	1252.5	102.61

Table 7. Yearly variability in Prices of Jowar and Wheat in APMC, Akola

Years	Jowar		Wheat	
	Mean (prices)	CV (%)	Mean (prices)	CV (%)
2006-07	591.66	8.01	1099.16	5.70
2007-08	660.83	3.97	1115	4.78
2008-09	727.08	7.12	1151.25	3.04
2009-10	840	4.17	1298.25	7.43
2010-11	896.91	7.93	1301.91	2.52
2011-12	953.75	47.34	1085.91	46.79
2012-13	1187.08	8.06	1472.91	9.82
2013-14	1337.83	4.77	1725	8.98
2014-15	1375	8.30	1622.75	4.08
2015-16	1348.5	8.50	1734.75	6.82
2016-17	2070.58	20.05	2251.41	7.76
2017-18	1264.08	34.39	1507.25	32.20

CONCLUSION

The prices of wheat increased significantly during the period under study. The more variability was observed in the arrivals of Jowar and Wheat due to fluctuations in the production. The monthly seasonal indices of arrivals were found higher immediately after harvest. The price index of crop was found lower during immediately after harvest. The variations in arrivals as well as prices over the years were found relatively higher. Trends in annual arrivals and prices of Jowar and Wheat commodities.

REFERENCES

1. Andhalkar, G.K., D.H. Ulemale, N.P. Tayde and S.U. Mokhale(2010). Arrival and Prices of major pulses in selected A.P.M.C'S. in Amravati District. *International Res.Journal of Agril Econ. And Stat.* 2(1)126.
2. Arjinder K., K.Sethi and S.K. Saran (2006). Marketing pattern of green peas in Punjab. *Indian Journal of Agricultural Marketing* 20(2): 188-120.
3. Bhosale, K.T. (2013). Price analysis of major agricultural commodities in APMC, Satara. M.Sc. (Ag.) Thesis, Mahatma PhuleKrishi Vidyapeeth, Rahuri, Ahmednagar, M.S. (INDIA).
4. Chahal, S.S.; R. Sinala and P. Kataria(2004). Marketing efficiency and price behaviour of green peas in Punjab. *Indian Journal of Agricultural Marketing* 18(1):115-128.
5. DayakarRao, K. A Bharatkumar and M. Bishnu, (2003). Trends in production, prices and arrival of sorghum. *Indian journal of Agricultural Marketing.* 17(1): 85-91
6. Suryawanshi, R. R. and B. B. Gawade(2011). Price analysis of selected cereals in APMC, Kolhapur. *A Report of research work done by the Department of agricultural economics, MPKV Rahuri.* pp 99-108.

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