

# Economic Analysis of Arrivals and Prices of Paddy in Gadchiroli District of Maharashtra

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## ABSTRACT

The study was undertaken to examine the pattern of price behavior between market arrivals and prices in selected markets. This study is based on the secondary data of 15 years from 2005-06 to 2019-20, collected from two APMC, APMC Gadchiroli and APMC Chamorshi, in Gadchiroli district. For the analysis, the exponential data types of the equation were used, and the trends in arrivals and prices were calculated. During the study period, in Chamorshi market, arrival was highest in January and the lowest in August. Gadchiroli market observed maximum arrival in January whereas the lowest arrival in August. In terms of prices, Chamorshi market witnessed a maximum price per quintal in July whereas a minimum price per quintal in March. Gadchiroli market recorded the highest price per quintal of Paddy in September and the lowest price per quintal in March. Chamorshi and Gadchiroli markets witnessed a negative growth rate during the study period regarding arrivals. In terms of prices, in Chamorshi market, a positive compound growth rate was observed, while Gadchiroli market observed a comparatively higher compound growth rate which was statistically significant.

**Keywords:** Trends, Arrivals, Prices, Growth rate, Chamorshi, Gadchiroli

In India, cereals production increased 2.66 percent to a new record of 305.43 million tonnes in 2020-21 on the better output of rice, wheat, pulses, and rice production increased from 53.6 million tonnes for the year 1980 to 120 million tonnes in for the year 2020-21. In cereals, rice rank first, followed by wheat and coarse grain. (Department of Agriculture & Farmers Welfare). During 2019-20, the total rice production is estimated at a record 117.47 million tonnes. It is higher by 9.67 million tonnes than the five years average production of 107.80 million tonnes. (Ministry of Agriculture & Farmers Welfare). India is the world's second leading producer of paddy. In terms of production, West Bengal ranks first in production, followed by Uttar Pradesh, Andhra Pradesh, Punjab, Tamil Nadu, Odisha, Maharashtra,

and Bihar. In Maharashtra, paddy is mainly cultivated in Konkan region, Bhandara, Gondia, Chandrapur, Gadchiroli, and part of Nagpur district in Vidarbha. The crop is mainly grown as a Kharif crop in rainfed areas with heavy annual rainfall. The area, production, and productivity of *Kharif* rice in Gadchiroli district in 2019-20 are 1,71,267 ha., 2,91,081 tonnes, and 1699.57 kg/ha, respectively (Department of Agriculture, Government of Maharashtra, India).

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## MATERIALS AND METHODS

The time series data on market arrivals and prices were collected over 15 years, from 2005-2006 to 2019-2020. In Gadchiroli district, there are 5 functioning Agricultural Produce Market Committee (APMC). The secondary data were collected from one major APMC that is APMC Chamorshi, and the other from APMC Gadchiroli. To attain conclusion from the study, data were analyzed by using simple tabular analytical tools such as mean, frequencies, ratios, percentages, and functional analysis such as trend and compound growth rate in market arrivals and prices. The analytical techniques employed in the study are explained in the following sections.

### Trend in market arrivals and prices

Agarwal *et al.* (2018) and Daundkar *et al.* (2015) studied the behavior and relationship between arrivals and prices. The statistical tools employed include exponential function.

The following form of equation was utilized;

$$Y = a.bt$$

Where,

$Y$  = Monthly arrivals/prices

$a$  = Constant

$b$  = Trend coefficient

$t$  = Time period

Annual compound growth rate (CGR) in percentage was calculated as,

$$CGR\% = \text{Antilog of } b - 1100$$

To carry out accurate and efficient analysis and processing with regard to trends in arrivals and prices of Paddy, R statistical software, which is a free software environment for statistical computing, was employed.

## RESULTS AND DISCUSSION

The main aim of the study was to analyze the trend in arrivals and prices of paddy in Gadchiroli district, it is presented as follows-

### Market-wise monthly average of Arrivals of Paddy

The total and the mean arrivals of Paddy in the selected markets during the study period were worked out, and the results are presented in Table 1.

The results in Table 1 revealed that during the study period, in Chamorshi market, arrivals were highest in January (143524.1 quintals), and the lowest arrivals were recorded in the month of August (38280.3 quintals). Gadchiroli market observed maximum arrival in January (51302 quintals), whereas the lowest arrival was observed in the month of August (13640 quintals). The results are in correlated with the findings of Jahangir *et al.* (2018) and Thakare *et al.* (2017).

### Market-wise monthly average of Prices of Paddy

Likewise, the price per quintal of Paddy in the selected market was compiled. The total prices per quintal and the monthly averages of prices per quintal were calculated, and the results are presented in Table 2. According to table 2, in Chamorshi market, the maximum price per quintal was in July (₹ 30689.31/qtls), whereas the minimum price per quintal was in March (₹ 23177.2/qtls). Gadchiroli market showed the highest price per quintal in September (₹ 26820.75/qtls) and the lowest price per quintal in March (₹ 21946.16/qtls). Similar results were found by Andhalkar *et al.* (2011).

### Trend in arrivals and prices of paddy

The time series data on monthly arrivals and prices of paddy covering the time period of fifteen years (2005-06 to 2019-20) was collected from APMC, Chamorshi, and APMC Gadchiroli.

### Paddy Arrivals

The annual Compound Growth Rate with respect to arrival was calculated for Chamorshi APMC and Gadchiroli APMC, and the results are presented in Table 3.

The results revealed that both Chamorshi and Gadchiroli APMCs witnessed negative growth during the study period. Among both the markets, Chamorshi APMC showed a negative compound growth rate of -2.18 percent, whereas Gadchiroli

**Table 1:** Market-wise monthly average of Arrivals of Paddy (2005-06 to 2019-20)

Sl. No.	Month	Chamorshi		Gadchiroli	
		Total Arrivals (qtls)	Monthly Average (qtls)	Total Arrivals(qtls)	Monthly Average (qtls)
1	January	143524.1	9568.273333	51302	3420.133333
2	February	123564	8237.6	42327	2821.8
3	March	76835	5122.333333	25980	1732
4	April	51036.4	3402.426667	17995	1199.666667
5	May	83688.6	5579.24	23478	1565.2
6	June	78281.1	5218.74	22347	1489.8
7	July	50014.65	3334.31	16596.5	1106.433333
8	August	38280.3	2552.02	13640	909.3333333
9	September	56884.97	3792.331333	27200	1813.333333
10	October	73312.2	4887.48	15351	1023.4
11	November	86797	5786.466667	20716.5	1381.1
12	December	137548.7	9169.913333	37906.5	2527.1

**Note:** Simple average was used to find out monthly average arrivals.

**Table 2:** Market-wise monthly average of Prices of Paddy (2005-06 to 2019-20)

Sl. No.	Month	Chamorshi		Gadchiroli	
		Total Prices (₹/qtls)	Monthly Average (₹/qtls)	Total Prices (₹/qtls)	Monthly Average (₹/qtls)
1	January	27411.51	1827.433795	23153.71	1543.580449
2	February	26516.51	1767.767032	23568.03	1571.201683
3	March	23177.2	1545.146892	21946.16	1463.077386
4	April	24752.43	1650.162135	24184.16	1612.277662
5	May	25815.89	1721.059468	25026.17	1668.411012
6	June	29743.67	1982.911192	25157.01	1677.133796
7	July	30689.31	2045.953979	24698.82	1646.587981
8	August	30012.29	2000.819613	25355.93	1690.395277
9	September	28956.24	1930.415828	26820.75	1788.049668
10	October	28898.04	1926.536262	26307.67	1753.84473
11	November	27934.34	1862.28919	25226.65	1681.776465
12	December	26011.27	1734.084549	24938.74	1662.582965

**Note:** Simple average was used to find out monthly average prices.

market showed a negative compound growth rate of -4.59 percent. Both were found to be statistically non-significant. The results are closely associated with the findings of Deokate *et al.* (2020) and Ritu *et al.* (2020).

### Paddy Prices

The annual Compound Growth Rate with respect

to price was calculated for Chamorshi APMC and Gadchiroli APMC, and the results are presented in Table 4.

Table 4 revealed that price in Gadchiroli APMC witnessed a comparatively higher compound growth rate of 1.11 percent per annum over the period, which was statistically significant at a one percent level of significance. In Chamorshi APMC, the positive

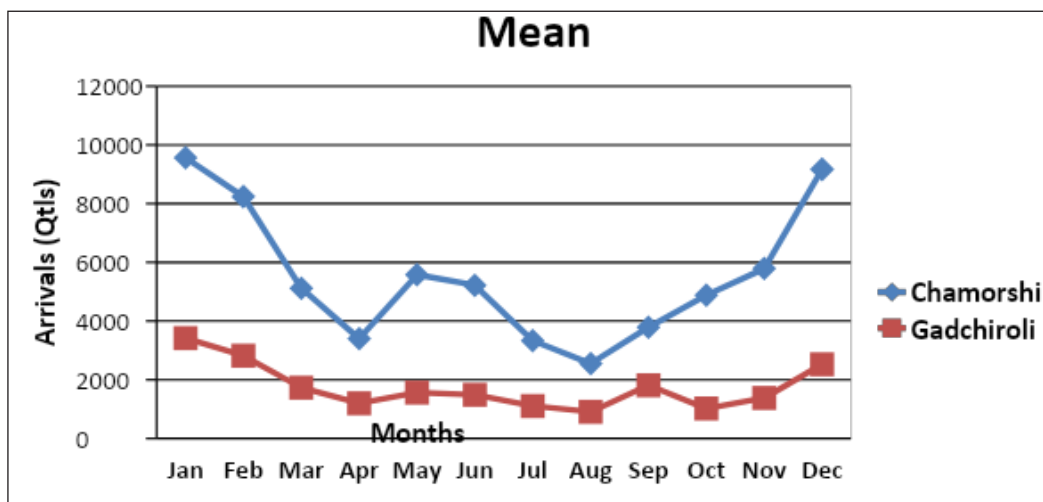


Fig. 1: Graphical representation of Mean of arrivals of Paddy in Chamorshi and Gadchiroli market

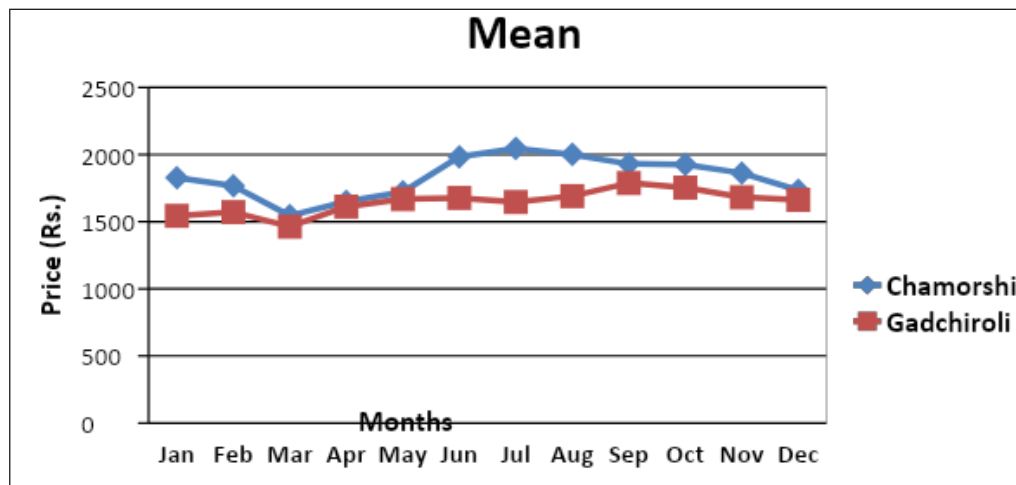


Fig. 2: Graphical representation of Mean of prices of Paddy in Chamorshi and Gadchiroli market

compound growth rate of 0.90 percent per annum was witnessed. Similar findings were reported in the study conducted by Saha et al. (2020).

Table 3: Market-wise compound growth rate of arrivals of Paddy

Particulars	Chamorshi	Gadchiroli
a	8.69	7.69
b	-0.022	-0.047
R <sup>2</sup>	0.036	0.163
t-value	-0.61	-1.39
CGR	-2.18	-4.59

Table 4: Market wise compound growth rate of prices of Paddy

Particulars	Chamorshi	Gadchiroli
a	7.45	7.33
b	0.009	0.011
R <sup>2</sup>	0.16	0.55
t-value	1.38	3.49
CGR	0.90	1.11***

### CONCLUSION

The present study in Gadchiroli district concluded that in the Chamorshi market, the highest arrivals were in January, and the lowest arrivals was in

August. The price of Paddy in Chamorshi market was recorded to be highest in July and lowest in the month of March. In contrast, Gadchiroli market witnessed highest arrivals in January and lowest in August and the highest price of paddy was prevailing in September and the lowest price in March. Analysis of the growth rate of arrivals and prices of paddy in the selected markets of the study area suggested that for arrivals, both markets observed negative and non-significant growth rates during the study period. Concerning paddy price, Chamorshi market registered a positive growth rate. Also Gadchiroli market showed positive growth during the overall period of study.

## REFERENCES

- Agarwal, P., Singh, R. and Singh, O.P. 2018. Dynamics of Prices and Arrivals of Major Vegetables: A case of Haldwani and Dehradun Markets, Uttarakhand. *J. Agric. Dev. Pol.*, **28**(1): 1-11.
- Andhalkar, G.K., Ulemale, D.H., Tayade, N.P. and Mokhale, S.U. 2011. Arrival and prices of major pulses in selected A.P.M.C.'s of Amravati district. *Int. Res. J. Agric. Econ. Stat.*, **2**(1): 126-131.
- Daundkar, K.S., Bairagi, S.K. and Kolambkar, R.A. 2015. Trends in arrivals and prices of onion in Pune market. *Int. Res. J. Agric. Econ. Stat.*, **6**(2): 300-303.
- Deokate, T.B., Bandgar, D.P. and Yadav, D.B. 2020. Price analysis of soybean in agricultural produce market committee Ahmednagar Maharashtra. *J. Pharmacogn. Phytochem.*, **9**(2): 875-877.
- Dhende, A.A., Suryawanshi, R.R., Patil, R.A. and Shinde, H.R. 2020. Trends in arrivals and prices of selected agricultural commodities in APMC, Sangli. *Int. J. Chem. Stud.*, **8**(6): 2676-2678.
- Final advance estimate district wise 2019-20 krishi. maharashtra.gov.in, Department of Agriculture, Government of Maharashtra, India (2020).
- Jahangir, A., Kachroo, J., Bhat, D. and Bhat, A. 2018. Analysis of Prices and Arrivals of Apple Fruit in Narwal Market of Jammu. *Econ. Aff.*, **63**(1): 107-111.
- Ministry of Agriculture & Farmers Welfare.
- Ritu, Mehta V.P., Malik D.P., Kumar R. and Nisha. 2020. Trends in arrivals and prices of major food crops in Haryana. *J. Pharmacogn. Phytochem.*, **9**(3): 1015-1019.
- Saha, Kar, N., Jha, A., Girish, K., Venkatesh, P. and Kumar, P. 2020. Market arrival and price behaviour analysis of potato in four major markets in India. *Econ. Aff.*, **65**(4): 529-533.
- Second Advance Estimates of Production of Foodgrains, Oilseeds and other Commercial Crops for 2019-20, Ministry of Agriculture and Farmers Welfare (2020).
- Thakare, H.P., Daundkar, K.S., Rathod, S.R. and Bondar, U.S. 2017. Changes and trends in arrival and prices of agricultural commodities in APMC Kolhapur market. *Int. Res. J. Agric. Econ. Stat.*, **8**(1): 26-30.

